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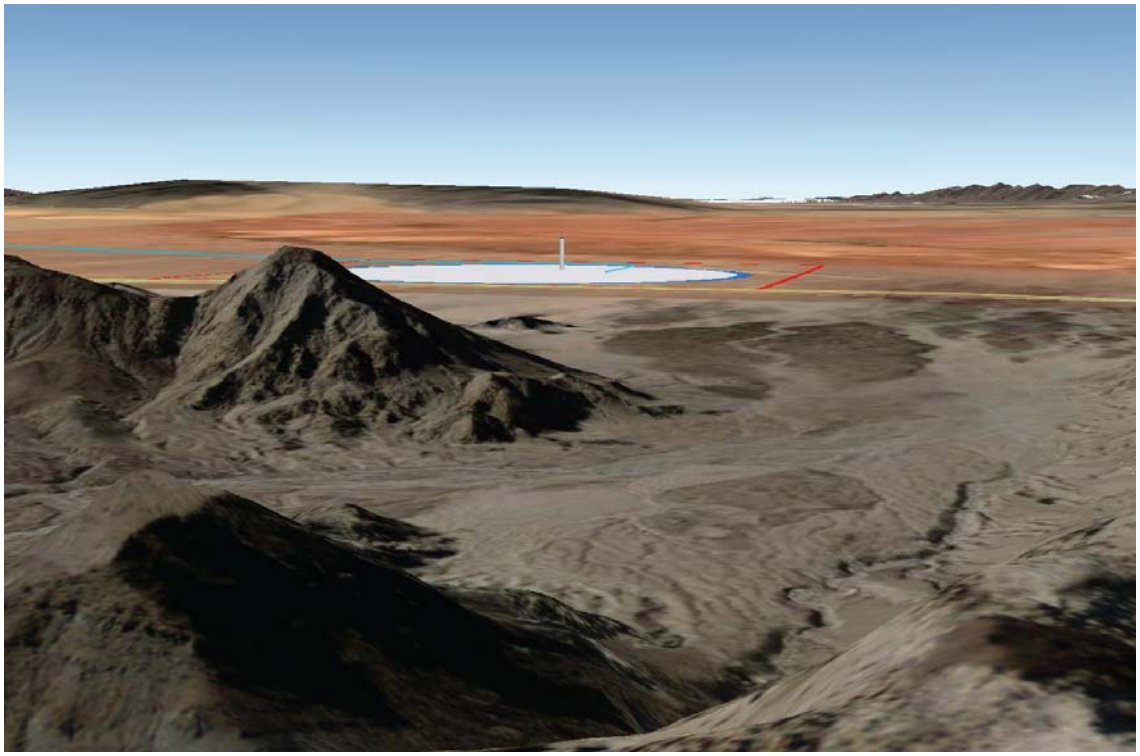
# RICE SOLAR ENERGY PROJECT

## Commission Decision



DECEMBER 2010
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DOCKET NUMBER 09-AFC-10

**CALIFORNIA**
**ENERGY COMMISSION**

1516 Ninth Street
Sacramento, CA 95814

http://www.energy.ca.gov/sitingcases/ricesolar/index.html

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**DISCLAIMER**

This report was prepared by the California Energy Commission Rice Solar Project AFC Committee as part of the Rice Solar Project, Docket No. 09-AFC-10. The views and recommendations contained in this document are not official policy of the Energy Commission until the report is adopted at an Energy Commission Business Meeting.

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA**
**1516 NINTH STREET, SACRAMENTO, CA 95814**
**1-800-822-6228 – WWW.ENERGY.CA.GOV**

| | |
|---|---|
| **APPLICATION FOR CERTIFICATION FOR THE** ***RICE SOLAR ENERGY POWER PLANT PROJECT*** | **DOCKET NO. 09-AFC-10**<br><br>**ORDER NO. 10-1215-21** |

# COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the **Rice Solar Energy Power Plant Project**. It incorporates the Presiding Member's Proposed Decision (PMPD) in the above-captioned matter, the Committee Errata, and Statement of Overriding Considerations and Findings incorporated in the Visual Resources section of the PMPD. The Commission Decision is based upon the evidentiary record of these proceedings and considers the comments received at the December 15, 2010 business meeting. The text of the attached Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and Conditions imposed.

This **ORDER** adopts by reference the text, Conditions of Certification, Compliance Verifications, and Appendices contained in the Commission Decision. It also adopts specific requirements contained in the Commission Decision which ensure that the proposed facility will be designed, sited, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

## FINDINGS

The Commission hereby adopts the following findings in addition to those contained in the accompanying text:

1. The **Rice Solar Energy Power Plant Project** will provide a degree of economic benefits and electricity reliability to the local area.

2. The Conditions of Certification contained in the accompanying text, if implemented by the project owner, ensure that the project will be designed, sited, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards.

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project's direct, indirect, and cumulative adverse environmental impacts will be mitigated to the extent feasible. Where full mitigation is not feasible, overriding considerations warrant acceptance of those impacts.

4. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.

5. The project is subject to Fish and Game Code section 711.4 and the project owner must therefore pay a nine hundred forty-nine dollars and fifty cents ($949.50) fee to the California Department of Fish and Game.

6. The benefits of the **Rice Solar Energy Power Project** outweigh the immitigable significant direct, indirect, or cumulative impacts which may result from its construction or operation.

7. No feasible mitigation measures or site or generation technology alternatives to the project, as described during these proceedings, exist which would reduce or eliminate any significant environmental impacts of the mitigated project.

8. An environmental justice screening analysis was conducted and that the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.

9. The Decision contains a discussion of the public benefits of the project as required by Public Resources Code section 25523(h).

10. The Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.

11. The proceedings leading to this Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an Application for Certification and thereby meet the requirements of Public Resources Code sections 21000 et seq. and 25500 et seq.

## ORDER

Therefore, the Commission **ORDERS** the following:

1. The Application for Certification of the **Rice Solar Energy Power Plant Project** as described in this Decision is hereby approved and a certificate to construct and operate the project is hereby granted.

2. The approval of the Application for Certification is subject to the timely performance of the Conditions of Certification and Compliance Verifications enumerated in the accompanying text and Appendices. The Conditions and Compliance Verifications are integrated with this Decision and are not severable therefrom. While the project owner may delegate the performance of a Condition or Verification, the duty to ensure adequate performance of a Condition or Verification may not be delegated.

3. This Decision is adopted, issued, effective, and final on December 15, 2010.

4. Reconsideration of this Decision is governed by Public Resources Code, section 25530.

5. Judicial review of this Decision is governed by Public Resources Code, section 25531.

6. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures as part of this Decision in order to implement the compliance monitoring program required by Public Resources Code section 25532. All conditions in this Decision take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.

7. This Decision licenses the project owner to commence construction on the project within five years of this Decision date. Subject to the provisions of California Code of Regulations, title 20, section 1720.3, this license expires by operation of law when the project's start-of-construction deadline passes with no construction.

8. The project owner shall provide the Executive Director a check in the amount of nine hundred forty-nine dollars and fifty cents ($949.50) payable to the California Department of Fish and Game.

9. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents, including the Department of Fish and Game fee, as provided by Public Resources Code section 25537, California Code of Regulations, title 20, section 1768, and Fish and Game Code, section 711.4.

10. We order that the Application for Certification docket file for this proceeding be closed effective the date of this Decision, with the exception that the docket file shall remain open for 30 additional days solely to receive material related to a petition for reconsideration of the Decision.

Dated: December 15, 2010, at Sacramento, California.

KAREN DOUGLAS
Chair

JAMES D. BOYD
Vice Chair

JEFFREY D. BYRON
Commissioner

ANTHONY EGGERT
Commissioner

ROBERT B. WEISENMILLER
Commissioner

TABLE OF CONTENTS

PAGE

INTRODUCTION ..... 1
A. SUMMARY ..... 1
B. SITE CERTIFICATION PROCESS ..... 2
C. PROCEDURAL HISTORY ..... 4
D. COMMISSION OUTREACH ..... 5
E. PUBLIC COMMENT ..... 6

I. PROJECT DESCRIPTION AND PURPOSE ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 18
CONCLUSION OF LAW ..... 18

II. PROJECT ALTERNATIVES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 35
CONCLUSIONS OF LAW ..... 36

III. COMPLIANCE AND CLOSURE ..... 1
SUMMARY OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 2
CONCLUSIONS OF LAW ..... 3
GENERAL CONDITIONS OF CERTIFICATION ..... 4

IV. ENGINEERING ASSESSMENT ..... 1
A. FACILITY DESIGN ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 3
CONCLUSIONS OF LAW ..... 3
CONDITIONS OF CERTIFICATION ..... 4
B. POWER PLANT EFFICIENCY ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 6
CONCLUSIONS OF LAW ..... 7
C. POWER PLANT RELIABILITY ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 5
CONCLUSIONS OF LAW ..... 6
D. TRANSMISSION SYSTEM ENGINEERING ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 14
CONCLUSIONS OF LAW ..... 15
CONDITIONS OF CERTIFICATION ..... 15

TABLE OF CONTENTS (Cont.)

PAGE

E. TRANSMISSION LINE SAFETY AND NUISANCE ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 5
CONCLUSIONS OF LAW ..... 6
CONDITIONS OF CERTIFICATION ..... 7

V. PUBLIC HEALTH AND SAFETY ..... 1
A. GREENHOUSE GAS EMISSIONS ..... 1
INTRODUCTION AND SUMMARY ..... 1
FINDINGS OF FACT ..... 15
CONCLUSIONS OF LAW ..... 16
B. AIR QUALITY ..... 1
SUMMARY OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 32
CONCLUSIONS OF LAW ..... 33
CONDITIONS OF CERTIFICATION ..... 33
C. PUBLIC HEALTH ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 6
CONCLUSIONS OF LAW ..... 7
D. WORKER SAFETY/FIRE PROTECTION ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 10
CONCLUSIONS OF LAW ..... 11
CONDITIONS OF CERTIFICATION ..... 11
E. HAZARDOUS MATERIALS MANAGEMENT ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 9
CONCLUSIONS OF LAW ..... 11
CONDITIONS OF CERTIFICATION ..... 11
F. WASTE MANAGEMENT ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 22
CONCLUSIONS OF LAW ..... 23
CONDITIONS OF CERTIFICATION ..... 23

VI. ENVIRONMENTAL ASSESSMENT ..... 1
A. BIOLOGICAL RESOURCES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 77
CONCLUSIONS OF LAW ..... 78
CONDITIONS OF CERTIFICATION ..... 79

TABLE OF CONTENTS (Cont.)

PAGE

B. SOIL AND WATER RESOURCES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 22
CONCLUSIONS OF LAW ..... 23
CONDITIONS OF CERTIFICATION ..... 23
C. CULTURAL RESOURCES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 21
CONCLUSIONS OF LAW ..... 21
CONDITIONS OF CERTIFICATION ..... 22
D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 5
CONCLUSIONS OF LAW ..... 6
CONDITIONS OF CERTIFICATION ..... 6

VII. LOCAL IMPACT ASSESSMENT ..... 1
A. LAND USE. ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 17
CONCLUSIONS OF LAW ..... 18
CONDITIONS OF CERTIFICATION ..... 18
B. TRAFFIC AND TRANSPORTATION ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 25
CONCLUSIONS OF LAW ..... 27
CONDITIONS OF CERTIFICATION ..... 27
C. SOCIOECONOMICS & ENVIRONMENTAL JUSTICE ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 2
FINDINGS OF FACT ..... 25
CONCLUSIONS OF LAW ..... 26
D. NOISE AND VIBRATION ..... 1
SUMMARY OF THE EVIDENCE ..... 6
FINDINGS OF FACT ..... 9
CONCLUSIONS OF LAW ..... 10
CONDITIONS OF CERTIFICATION ..... 10
E. VISUAL RESOURCES ..... 1
SUMMARY AND DISCUSSION OF THE EVIDENCE ..... 1
FINDINGS OF FACT ..... 31
CONCLUSIONS OF LAW ..... 37
CONDITIONS OF CERTIFICATION ..... 37

TABLE OF CONTENTS (Cont.)

*APPENDIX A:* *LAWS, ORDINANCES, REGULATIONS, AND STANDARDS*
*APPENDIX B:* *EXHIBIT LIST*
*APPENDIX C:* *PROOF OF SERVICE LIST*

# INTRODUCTION

## A. SUMMARY OF THE DECISION

This Decision contains the Commission's rationale in determining that except for the technical area of Visual Resources as discussed in this Decision, the proposed Rice Solar Energy Project (RSEP) will, as mitigated, have no significant impacts on the environment and complies with all applicable laws, ordinances, regulations, and standards (LORS). The project may therefore be licensed. Our Decision is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the RSEP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On October 21, 2009, the California Energy Commission received from Rice Solar Energy, LLC, a wholly owned subsidiary of Solar Reserve, LLC, an Application for Certification (AFC) to construct, own, and operate a solar generating facility in unincorporated eastern Riverside County, California. On December 2, 2009, the Energy Commission accepted the AFC as complete, thus starting the Energy Commission's formal review of the proposed project.

The Energy Commission has exclusive jurisdiction to license this project and is considering the proposal under a review process established by Public Resources Code section 25540.6. The Energy Commission began review of the RSEP on December 2, 2009.

The Applicant has proposed to locate the RSEP in the Colorado Desert. The RSEP site is located approximately 32 miles west of Parker, Arizona and approximately 40 miles northwest of Blythe, California in Riverside County, California. The nearest community is Vidal Junction, approximately 15 miles northeast. The site is adjacent to State Route 62 (SR-62), which parallels a portion of the Arizona-California Railroad and the Colorado River Aqueduct, near the junction of SR-62 and Blythe-Midland Road, and near the sparse remains of the abandoned town of Rice, California. The power plant would occupy 1,387

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 6/28/10 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix B** of this Decision.

acres of a larger 2,560-acre parcel on private land located adjacent to, and immediately south of, SR 62.

Approximately nine miles of the 10-mile long generation tie line would be located on public land administered by the BLM with the balance on private land. The electrical interconnection would be to Western's Parker-Blythe 161-kilovolt (kV) transmission line at a new substation located southeast of the power plant.

If approved, the applicant has proposed RSEP construction would begin in the first quarter of 2011, begin startup testing in the first quarter of 2013, and to achieve commercial operation by third quarter of 2013 for an overall 30-month construction period. The Applicant expects the peak construction period to occur between months 8 and 20 with a peak construction workforce of up to 438 workers.

## B. SITE CERTIFICATION PROCESS

The RSEP and its related facilities are subject to Energy Commission licensing jurisdiction. (Pub. Res. Code, § 25500 et seq.) During licensing proceedings, the Commission acts as lead state agency under the California Environmental Quality Act (CEQA). (Pub. Res. Code, §§ 25519(c), 21000 et seq.) The Commission's regulatory process, including the evidentiary record and associated analyses, is functionally equivalent to the preparation of an Environmental Impact Report. (Pub. Res. Code, § 21080.5.) The process is designed to complete the review within a specified time period when the required information is submitted in a timely manner. A license issued by the Commission is in lieu of other state and local permits.

The Commission's certification process provides a thorough review and analysis of all aspects of a proposed power plant project. During this process, the Energy Commission conducts a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

Specifically, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally or on a formal level as intervenor parties who have the opportunity to present evidence and cross-examine witnesses. Public participation is encouraged at every stage of the process.

The process begins when an applicant submits an AFC. Commission staff reviews the data submitted as part of the AFC and makes a recommendation to the Commission on whether the AFC contains adequate information to begin the certification process. After the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the formal licensing process. This process includes public conferences and evidentiary hearings, where the evidentiary record is developed and becomes the basis for the Presiding Member's Proposed Decision (PMPD). The PMPD determines a project's environmental impact and conformity with applicable laws, ordinances, regulations, and standards and provides recommendations to the full Commission.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed Project and obtaining necessary technical information. During this time, the Commission staff sponsors public workshops at which intervenors, agency representatives, and members of the public meet with staff and the applicant to discuss, clarify, and negotiate pertinent issues. In this proceeding, Staff published its initial technical evaluation of the RSEP project in its Staff Assessment (SA) and made it available for a 30-day comment period.

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order to schedule formal evidentiary hearings. At the evidentiary hearings, all formal parties, including intervenors, may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public may offer oral or written comments at these hearings. Evidence submitted at the hearings provides the basis for the Committee's analysis and recommendations to the full Commission.

The Committee's analysis and recommendations appear in the PMPD, which is available for a 30-day public comment period. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, the Revised PMPD triggers an additional public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process, members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including

the Applicant, Commission staff, and formal intervenors, function independently with equal legal status. An "ex parte" rule prohibits parties in the case, or other persons with an interest in the case, from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications are made on the public record. The Office of the Public Adviser is available to assist the public in participating in all aspects of the certification proceeding.

## C. PROCEDURAL HISTORY

Public Resources Code, sections 25500 et seq. and Energy Commission regulations (Cal. Code Regs., tit. 20, § 1701, et seq.) mandate a public review process and specify the occurrence of certain procedural events in which the public may participate. The key procedural events that occurred in the present case are summarized below.

On October 21, 2009, the California Energy Commission received from Rice Solar Energy, LLC, a wholly owned subsidiary of Solar Reserve, LLC, an Application for Certification (AFC) to construct, own, and operate a solar generating facility in unincorporated eastern Riverside County, California. On December 2, 2009, the Energy Commission deemed the AFC data adequate (sufficient data to proceed) and assigned a Committee of two Commissioners to conduct proceedings.

The formal parties included the Applicant and the Energy Commission staff (Staff). There were no intervenors in this proceeding.

On January 11, 2010, the Committee issued a Revised Notice of Energy Commission Informational Hearing, Environmental Scoping Meeting, and Public Site Visit. (This Notice superseded the prior notice issued on December 29, 2009.) The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the RSEP project. The Public Adviser's Office also advertised the public hearing and site visit and distributed information to local officials and sensitive receptors surrounding the project site.[2]

[2] Sensitive receptors are people or institutions with people that are particularly susceptible to illness, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.

On January 25, 2010, the Committee conducted a site visit to tour the proposed RSEP site and then convened a public Informational Hearing at the City Hall, Council Chambers in Blythe, California. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the project, described the Commission's review process, and explained opportunities for public participation.

On February 9, 2010, the Committee issued an initial Scheduling Order. The Committee Schedule was based on both the Applicant's and Staff's proposed schedules and related discussion at the Informational Hearing. The schedule contained a list of events that must occur in order to complete the certification process within twelve months.

In the course of the review process, Staff conducted a Staff Data Response and Issue Resolution workshop on March 19, 2010. The purpose of the workshop was to provide members of the community and governmental agencies opportunity to obtain project information, and to offer comments regarding any aspect of the proposed project.

The Staff Assessment/Draft Environmental Impact Statement was issued on October 11, 2010.

The Committee conducted the Prehearing Conference and Evidentiary Hearing on October 29, 2010, in Sacramento at Commission headquarters.

The Committee published the PMPD on November 12, 2010, and held a Committee Conference in Sacramento at Commission Headquarters on December 3, 2010. The Full Commission adopted the PMPD and Errata at the December 15, 2010, business meeting.

## D. COMMISSION OUTREACH

Several entities within the Energy Commission provide various notices concerning power plant siting cases. Staff provides notices of staff workshops and the release of the Staff Assessments. The Hearing Office notices Committee-led events such as the informational hearing and site visit, status conferences, the prehearing conference, and evidentiary hearings. The Public Adviser's Office provides additional outreach for critical events as well as provides information to interested persons that would like to become more

actively involved in a power plant siting proceeding. Further, the Media Office provides notice of events to local and regional press through press releases. The public may also subscribe to the proceeding's e-mail List Server offered on the web page for each project which gives an immediate notification of documents posted to the project web page. Through the activities of these entities, the Energy Commission has made every effort to ensure that interested persons are notified of activities in this proceeding.

## E. PUBLIC COMMENT

The record contains public comments from interested individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing.

# I. PROJECT DESCRIPTION AND PURPOSE

The Applicant, Solar Reserve LLC, filed an Application for Certification (AFC) of the Rice Solar Energy project (RSEP) on October 21, 2009. The project is a concentrating solar thermal power plant to be located in an unincorporated area in the eastern portion of Riverside County, California. Solar Reserve LLC will own and operate the project.

As required by the California Environmental Quality Act (CEQA), this section of the Decision describes the project based on the evidence of record. (Cal Code Regs, tit. 14, § 15124.) The evidence was undisputed. (10/29/10 RT 21, 51-60, 104, 126, 157, 128, 223-226; Exs. 1, §§ 2, 4 [100 -107]; 5; 31 [Item 6]; 42; 200 § 3-3.)

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Setting

The site is located in the Colorado Desert, approximately 32 miles west of Parker, Arizona and approximately 40 miles northwest of Blythe, California in Riverside County, California. The nearest community is Vidal Junction, approximately 15 miles northeast. The site is also near the abandoned town of Rice, California.

The project footprint would include approximately 1,387-acres of privately owned property for the site containing the generation facility's centralized components. The site would be encompassed within a larger 2,560-acre parcel. If Western approves the interconnection request, the generating facility would be connected via a new 10-mile generation tie line to Western Area Power Administration's (Western) existing Parker-Blythe #2 161-kilovolt (kV) transmission line. The proposed gen tie line would connect to Western's line at a proposed new substation to be located southeast of the power plant.

Approximately nine miles of the generation tie line will be located on public land administered by the US Bureau of Land Management (BLM), although it would cross a portion of two privately owned parcels. (Exs. 1, pp. ES-4 - ES-5; 200, p. 3-1.) The proposed project would require BLM approval of an Amendment to its California Desert Conservation Area (CDCA) Plan and issuance of a Right-of-Way (ROW) grant for use of approximately 99 acres: a 10-mile transmission

corridor, 150 feet wide, and a three acre plot for the interconnection substation which would be built and owned by Western. (Ex. 1, p. 6.5-1.)

The project's power block and solar arrays would be located on the site of the Rice Army Air Field and a portion of Camp Rice, a World War II desert training base that was part of the infantry and artillery Desert Training Center, California-Arizona Maneuver Area used by General George S. Patton, Jr., from 1942-1944 to prepare American soldiers for combat in the North African desert. The airport was used by the public and private sector, respectively and was abandoned between 1955-1958. To the east, Camp Rice (Rice Divisional Camp) housed the 5th Armored Division during its training at the maneuvers area and maintained a large quartermaster depot at that location. The area was also used for Joint Exercise Desert Strike in 1964. Little remains of Camp Rice or the Rice Army Airfield, aside from a few foundations, concrete pads, and defunct runways. (Ex. 200, p. 6.5-7.)

The northern portion of the proposed project footprint is bounded by State Route (SR) 62, the Arizona and California Railroad short line, and the Colorado River Aqueduct. As noted above, the former Camp Rice is situated along a portion of the eastern project site boundary, with some private land directly south, and BLM-managed public lands surrounding the remainder of the site. The proposed transmission line corridor would extend southeast for approximately 10 miles, across BLM-managed public lands and two privately owned parcels, connecting with the Western Parker-Blythe transmission line within the existing Western/BLM right-of-way (ROW). (*Id*.)

**Project Design Figures 1** and **2** show the project in regional and local settings.

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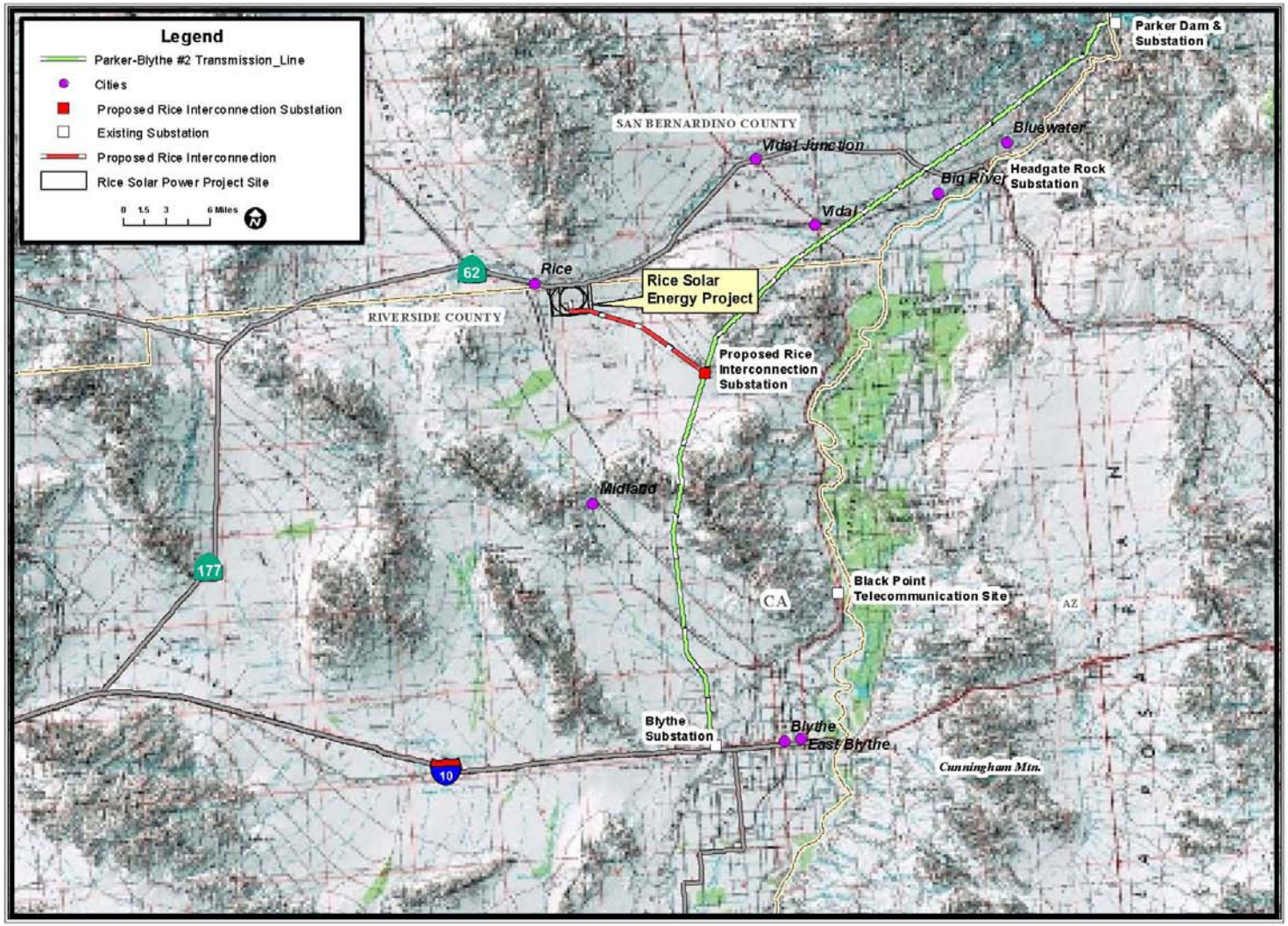
**PROJECT DESCRIPTION - FIGURE 1**

Rice Solar Power Project - Regional Setting & Parker-Blythe Transmission Line

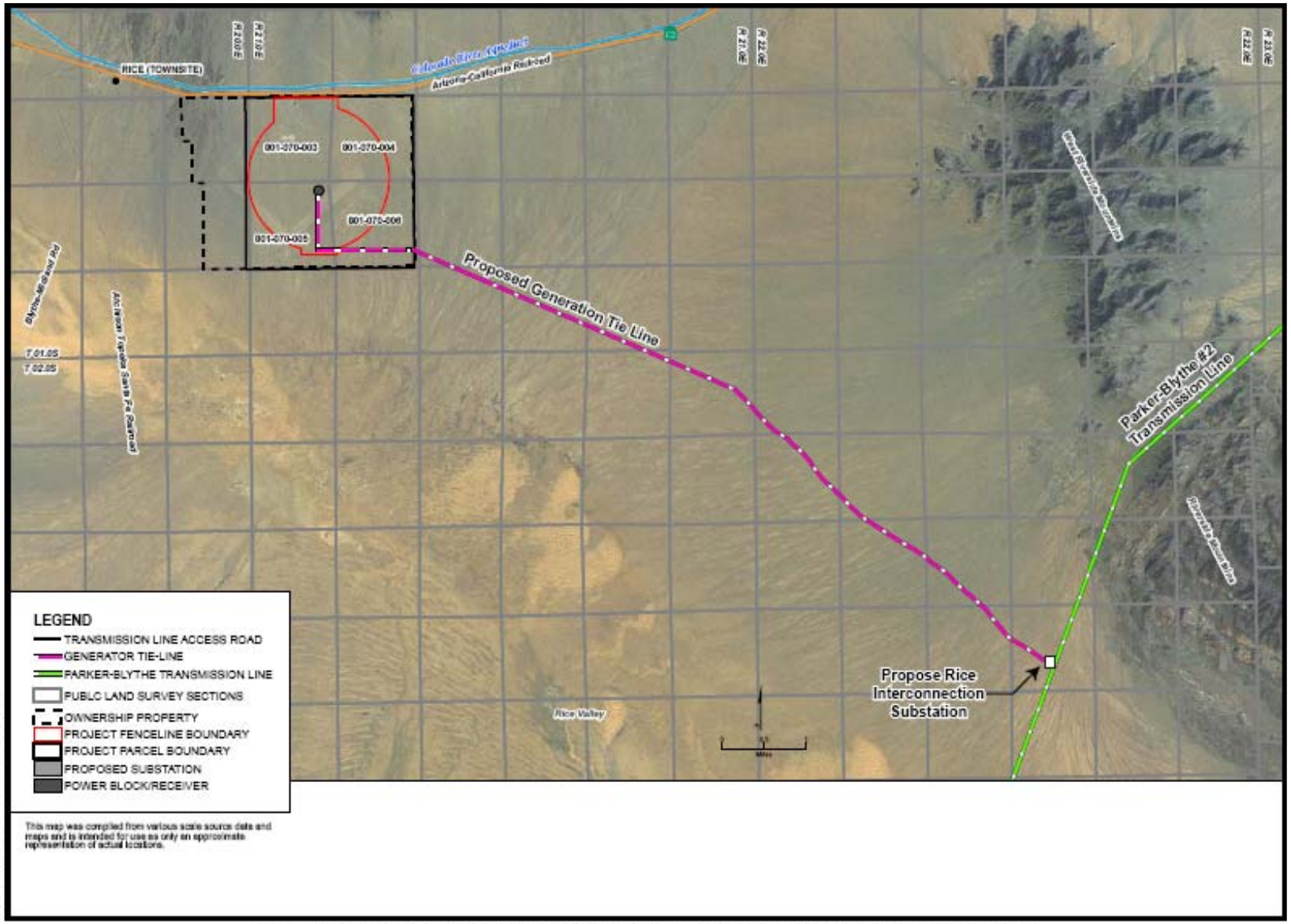



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: California Energy Commission and Western Area Power Administration

PROJECT DESCRIPTION

**PROJECT DESCRIPTION - FIGURE 2**
**Rice Solar Energy Project - Local Setting**




PROJECT DESCRIPTION

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC Fig 1.0-2

## 2. Project Objectives

The Applicant's stated project objectives are to:

- Generate controllable, predictable renewable power using integral thermal technology that:
  - Captures solar energy throughout the day, through varying sunshine and periods of dense cloud cover.
  - Stores thermal energy for electricity production during hours of peak electricity demand, including nighttime hours.
  - Generates stable power that enhances grid system stability and helps to facilitate integration of new intermittent renewable sources elsewhere.
  - Avoids the need for support from costly grid resources such as spinning reserves and peaking turbines.
- Deliver a minimum of 450,000 MWh of cost-competitive renewable power annually;
- Size generator output to maximize energy deliverables, reliably, during high electric demand hours;
- Minimize use of public lands by siting the project on private property that is formerly disturbed;
- Produce a reliable electricity supply free of carbon emissions to help diversify California's electrical power generation portfolio. (Ex. 1, pp. ES-2- ES-3.)

## 3. Key Project Components and Features

RSEP is designed to produce electricity at a capacity of 150 megawatts (MW) and annual energy of 450,000 megawatt-hours per year during periods of peak energy demands, including after sunset and when there is cloud cover. The primary components of the 1,410-acre power plant site include:

- A heliostat field with up to 17,500 tracking heliostats arranged in a circular array that will reflect and concentrate the sun's energy onto a tower-mounted receiver;

- A concrete central tower on which the receiver and maintenance crane will be mounted;
- A liquid salt storage system featuring hot and cold storage tanks; and
- Dry cooling technology for the steam turbine cycle using an air-cooled condenser.
- A 10-mile, 230-kV generator tie line that will connect the RSEP with the existing Western Parker-Blythe transmission line.

If Western approves the interconnection request, Western will construct and own a new interconnection substation for the project's tie-in to Western's system. (Ex. 1, pp. 2-4 – 2-5.)

4. Project Technology

Most of the RSEP power plant area will consist of a field of elevated mirrors guided by a tracking system (heliostats) that focus solar energy on a receiver heat exchanger. Each heliostat tracks the sun throughout the day and reflects the solar energy to the receiver.

The project features thermal energy storage that allows solar energy to be captured throughout the day and retained in a liquid salt heat transfer fluid. The liquid salt solar generating system is proprietary technology of United Technologies Corporation. This technology was successfully used in the 1990s in a Department of Energy-sponsored 10-MW project known as "Solar Two." Solar Two was located in Barstow, California. (Ex. 1, p. ES-1.)

According to the evidence, liquid salt has inherent thermal energy storage properties, has greater heat retention capacity, can operate at higher operating temperatures than alternatives such as synthetic oil, and will not vaporize or burn. (Ex. 1, p. ES-1.) Further, in its liquid state, salt has viscosity and appearance similar to water. But, unlike water which becomes steam at high temperatures, the salt remains in a liquid state at very high temperatures. The Applicant has stated that this allows large quantities of thermal energy to be captured and retained for several days and extracted on demand, even if the sun is not shining. In addition, because RSEP's process of collecting solar energy is decoupled from the electricity generation process, the Applicant expects the RSEP to deliver a stable, predictable, and controllable electrical supply. (Ex. 1, pp. ES-2, 2-6 – 2-7.)

RSEP's technology is distinguishable from parabolic trough systems in that it uses a single, common receiver located on top of a central tower. Solar energy from the entire field is concentrated onto the receiver. Liquid salt flowing within the receiver tubes absorbs the heat, which will then be collected in the "hot" salt storage tank near the base of the tower. (Ex. 1, pp. ES-2, 2-6 – 2-7.)

In a separate process, the hot salt is pumped through the steam generation system, releasing its heat through a series of heat exchangers that produce superheated steam. This steam powers a turbine to generate electricity. When this process is completed, the salt is collected in the "cold" salt storage tank and then pumped back into the receiver. (*Id*.)

a. Heliostats

Up to 17,500 heliostats would occupy approximately 1,329 acres arranged in concentric circles around the receiver tower. Each heliostat will be configured with a single mirror array hung in the landscape position. Each mirror would be 24 feet high by 28 feet wide, providing a reflective surface of 672 square feet per heliostat.

Each heliostat has a 12-foot high post or pier-type foundation to support and anchor the unit. The overall height of the heliostats would be about 26 feet when they are facing near horizontally, with about two feet of ground clearance. **Project Description Figure 3** shows the project layout and depicts the heliostat field.

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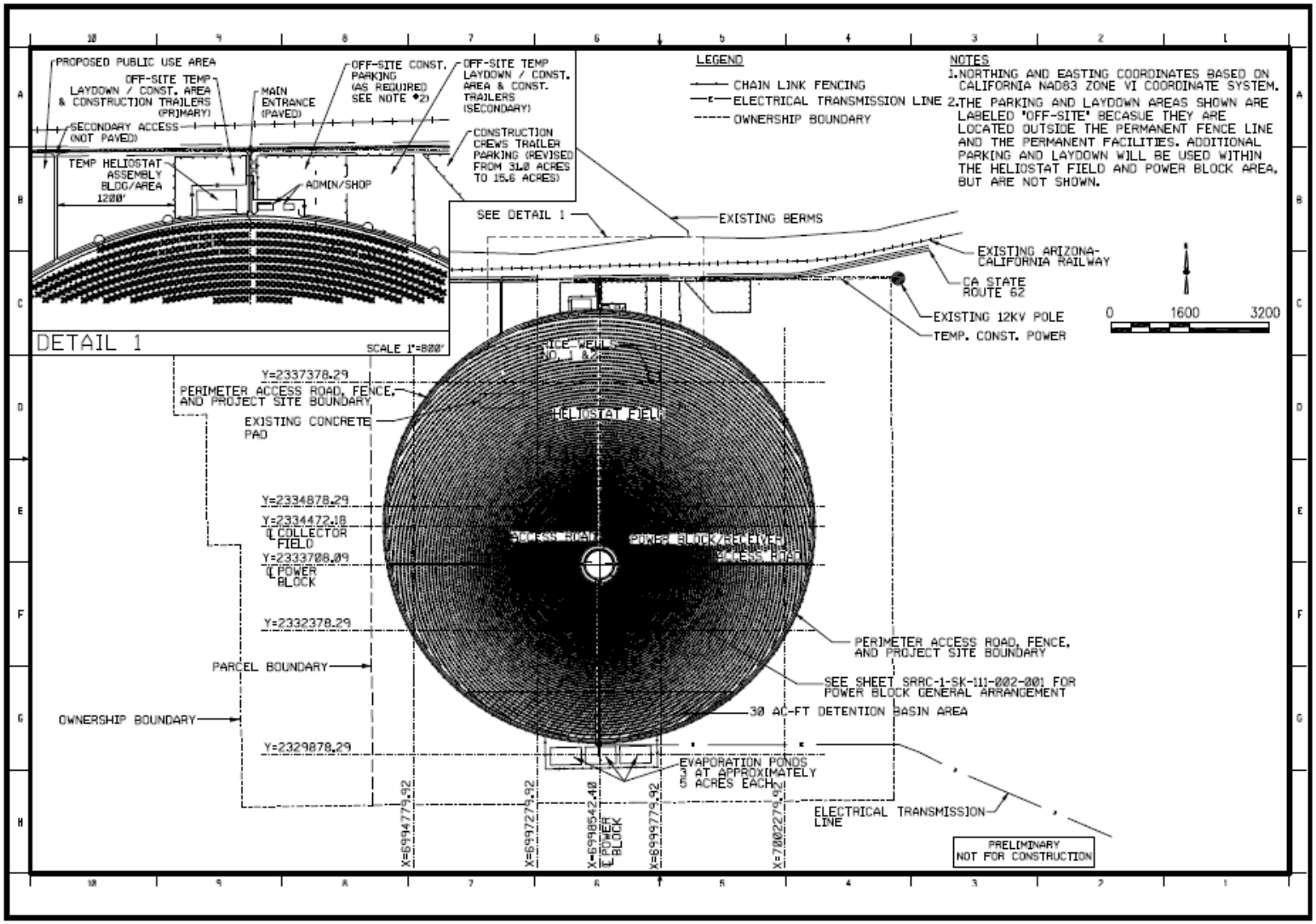
**PROJECT DESCRIPTION - FIGURE 3**
**Rice Solar Energy Project – Project Layout**




CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC Supplement, Worley-Parsons, July 2010

Note: The Applicant will provide a 100-foot buffer between State Route 62 and the construction laydown yard fence, as shown in Figure S119-1. (Exhibit 47.)

The arrangement of the heliostats within the array is optimized to maximize the amount of solar energy that can be collected by the field, and to avoid interference among heliostats as they track the sun during the day. The heliostats are arranged in arcs encircling the receiver tower extending in concentric rings from the central tower. The receiver tower is offset somewhat to the south of the true center of the heliostat field.

The heliostat spacing will vary through the field with tighter spacing in the center of the field near the power block and central tower. The spacing will gradually increase as the heliostats are arranged farther away from the central tower, since the outermost rows will reflect at a flatter angle and require more spacing to avoid shadow effects on each other. (Exs. 1, pp. 2-5 -2-6; 4 [DR 101].)

The heliostats can rotate 360 degrees around the pedestal and would move in the vertical plane within an approximate range from facing laterally to facing upward. The heliostat power and control cables would be direct-bury cables in the field up to each individual heliostat unit.

b. Solar Receiver Tower

The solar receiver would be located on the top of a cylindrical concrete tower. The tower structure would be approximately 538 feet tall. The height of the receiver atop the tower would be 100 feet and together, the receiver and tower would be 638 feet above the ground surface. A 15-foot high crane would be mounted on top of the receiver to facilitate receiver panel maintenance, making the total height of the receiver tower 653 feet above the ground.

The receiver is comprised of a series of manifolds and tubes. The cold salt will be stored in a cold liquid salt tank at ground level. The salt will enter the manifold system at approximately 550°F and then be distributed to the panels of receiver tubes where the solar energy from the heliostats heats the salt to approximately 1,050°F. The heated salt flows from the receiver to the hot salt storage tank located near the base of the tower.

Before start-up and commissioning of the power plant, the salt mixture of sodium nitrate ($NaNO_3$) and potassium nitrate ($KNO_3$) would need to be melted on a one time basis and maintained above the minimum temperature of 450°F to remain in a liquid form. (Ex. 1, p. 2-6.)

c. Power Block

The RSEP solar power plant would have a power block located slightly south of the center of the solar field. **Project Description Figure 4** shows the general arrangement of the power block area.

When power generation is desired, hot salt is pumped from the hot thermal storage tank into a series of feedwater heaters and steam generation modules to transfer the heat from the hot salt to water and saturated steam, and produce superheated steam. The steam is used in a Rankine cycle reheat steam turbine-generator to produce electricity. Superheated steam is expanded through the high-pressure stages of the turbine, routed back to the steam generation system where it is reheated and then returned to expand through the intermediate and low-pressure turbine sections. The steam turbine drives an attached generator to produce electricity.

Waste heat contained in steam exhausted from the turbine is then rejected to the atmosphere through a dry cooling process utilizing an air-cooled condenser. Condensed steam is returned to the steam generation cycle by way of multi-stage condensate and feedwater preheaters and a deaerator. (Ex. 200, pp. 3-6 – 3-7.)

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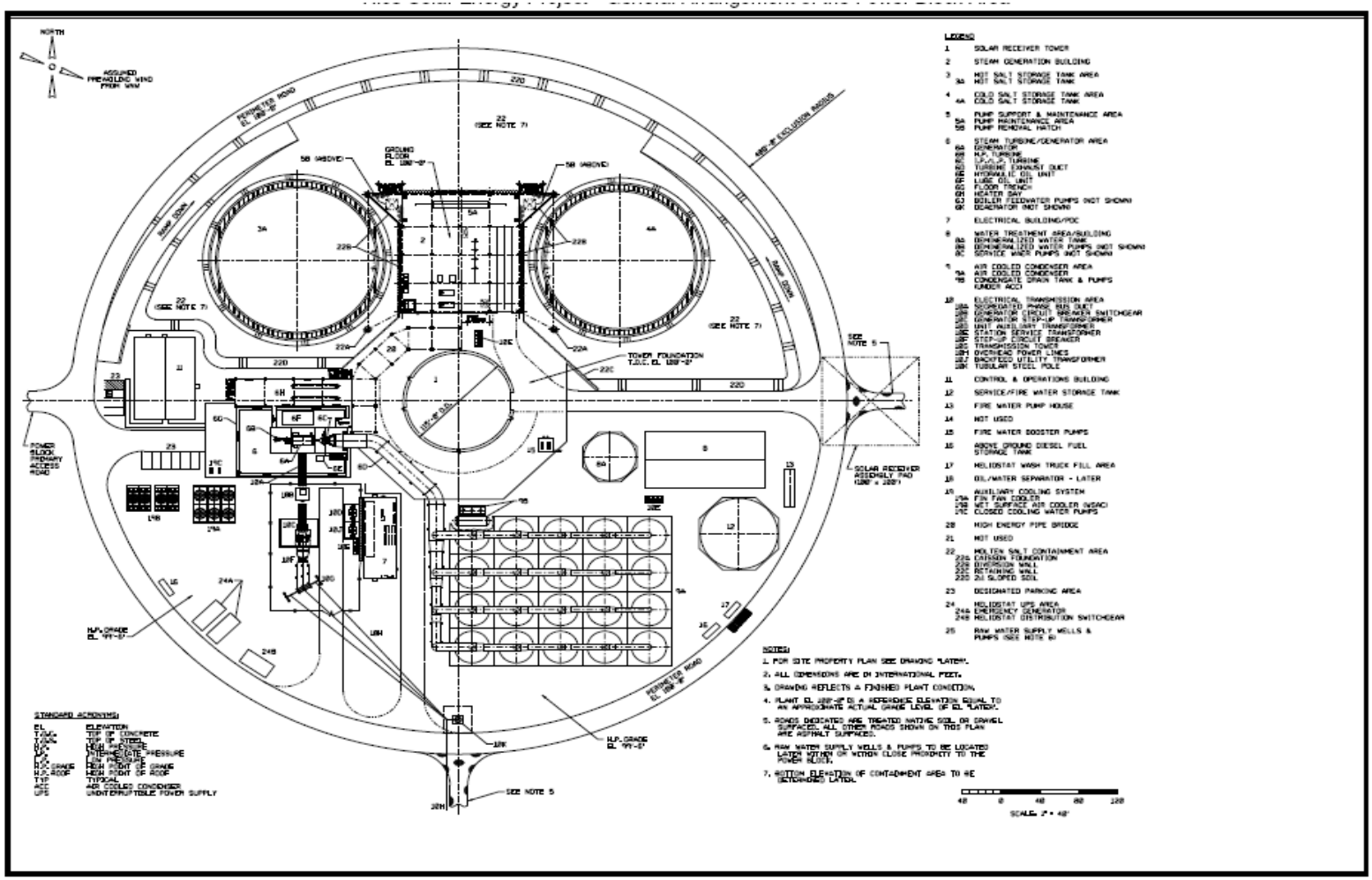
**PROJECT DESCRIPTION - FIGURE 4**
**Rice Solar Energy Project - General Arrangement of the Power Block**




CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC Fig 2.2-2

PROJECT DESCRIPTION

5. Transmission System Interconnection and Downstream Transmission Facilities

Power will be generated by the steam turbine generator (STG) at 13.8 kV and increased to transmission voltage by a fan-cooled generator step-up transformer to 161/230 kV for output to the grid. The STG will tie into a 230-kV-capable onsite switchyard. The RSEP will be operated at 161-kV but is designed to 230-kV standards in anticipation of a possible decision by Western to operate the line at 230-kV. (Ex. 1, pp. 2-18 – 2-21.)

All of the net power produced by RSEP is expected to be delivered to Western's transmission grid through the project's interconnection with a proposed new substation to be constructed and owned by Western. (Ex. 1, p. 2-17.) If Western approves the interconnection request, the new RSEP 10-mile long 161-kV transmission generation tie line will interconnect to Western's Parker-Blythe #2 transmission line southeast of the RSEP.

The line will take a direct and short route from the southern limits of the heliostat circle to the new substation, with the first 5.4 miles along a newly built private dirt road connecting to Rice Valley Road, and the remaining 4.6 miles along Rice Valley Road on BLM land to the substation interconnection point. The locations of the proposed Generation Tie Line and the existing Parker-Blythe transmission line are identified in **Project Description Figure 1** above.

The proposed locations of the new generator tie line and the existing Parker-Blythe #2 transmission line are shown above in **Project Description Figure 1**. The interconnection of the RSEP to Western's Parker-Blythe transmission line may require upgrades to existing downstream transmission facilities associated with Southern California Edison's (SCE) and Imperial Irrigation District's (IID) transmission systems. These upgrades are expected to consist of reconductoring, substation switchgear and transformer upgrades and system protection control modifications. California Environmental Quality Act (CEQA) analysis and permitting of these upgrades would be under the jurisdiction of the California Public Utilities Commission (CPUC) for SCE's (Ex. 200, pp. 3-10, 3-11.) system, and IID for changes to its system. The **Transmission System Engineering** section of this Decision more fully discusses the RSEP project's potential impacts on downstream transmission and telecommunications facilities. The interconnection of RSEP to Western's transmission system requires installation of telecommunication facilities to provide a protective relay circuit and a supervisory control and data acquisition (SCADA) circuit, together with data

and telephone services. To provide for telecommunication pathways from the new RSEP power plant to the new substation, a fiber optic cable will be incorporated with the 10-mile long overhead generation tie line to the new interconnection substation.

6. Downstream Telecommunications Facilities

From the new substation, telecommunications would likely be established in the following ways: (1) microwave (radio-frequency) transmission from either RSEP or the new substation to terminate at either Western's Blythe or Headgate Rock substations or to an existing telecommunications site at either Cunningham Mountain or Black Point; or (2) power line carrier/Broadband-over-Power-Line (BPL). (Ex. 200, pp. 3-10 – 3-11.)

7. Water Supply and Treatment

The RSEP requires a water source to support operations, including process water consisting of make-up water for the steam system and wash water for the heliostats, and potable water for domestic water needs. RSEP will use groundwater supplied from one of two newly constructed onsite wells.

The Applicant estimates that project water consumption will not exceed a maximum of 180 acre-feet per year (afy), which would primarily be used to provide water for washing heliostats (mirrors) and to maintain proper chemistry of boiler feed water by replacing feed water blow-down. RSEP's expected water requirements are shown below in **Project Description Table 2**.

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**Project Description Table 2**
**Average Daily and Annual Average RSEP Water Demands**

| ***Water Use*** | ***Average Daily Use (gpm)[1]*** | ***Annual Use (AFY)[2]*** |
|---|---|---|
| *Heliostat Mirror Wash* | *51* | *31* |
| *Steam Cycle Makeup* | *52* | *31* |
| *Potable Water* | *5* | *3* |
| *Other uses including wet surface air cooler (WSAC), service water, quench water* | *62* | *38* |
| ***Average Use Total*** | ***170*** | ***103*** |
| *Margin for other uses* | *25* | *15* |
| ***Total Plant Consumption*** | ***195*** | ***118*** |
| ***Maximum Annual Use*** | ***--*** | ***180*** |
| | | |
| ***Wastewater Discharge*** | | |
| *Service water* | *5* | -- |
| *WSAC blowdown* | *27* | -- |
| *Hydrostatic test water* | * | -- |
| ***Average discharge to evap. Ponds*** | *32* | *~20* |

[1] Gallons per minute
[2] Acre-feet per year, based on 3286 hours of operation per year.
*A volume of approximately 6 million gallons will be used during hydrostatic testing. Wastewater discharge facilities shall be operational, and monitoring networks must be installed prior to discharge.
*Staff subsequently analyzed and restricted the Applicant to 150 AFY. See the Soil&Water section of this Decision.

The groundwater quality will be improved by the project's use of an onsite treatment system. Water treatment equipment would consist of a multimedia filter, reverse osmosis filtration process, and an electrodeionization system. The demineralized water will be stored in a dedicated water storage tank. (Exs. 1, pp. 2-24 – 2-30; 200, pp. 3-8 – 3-9.)

8. Stormwater Water Discharge

The proposed project is sited within a previously modified drainage shed and would be constructed in the same location as the Rice Army Airfield. Directly north of the proposed project site location and north of SR-62 is a railroad currently owned by the California and Arizona Railroad Co. This section of railroad originally owned by Santa Fe Railroad was built by the early 1900s. Diversion dikes built to capture runoff from the Turtle Mountains, channel water beneath the railroad tracks.

The most hydraulically significant drainages on site are those crossing SR-62 adjacent to the project. Two road crossings at SR-62 convey all drainage generated up gradient of the site through or around the project. Runoff received from the north of SR-62 would be diverted outward and away from the project's eastern and western boundaries by constructing the perimeter loop road along the northern half of the heliostat field as a raised feature with a channel on the outward side to direct the flows much like the 1940s-era diversion dike diverted flows from the former Rice Army Airfield.

On-site runoff would only be contained in areas where rainwater could be exposed to contaminants. The solar field runoff would be allowed to discharge freely with minimal concentration.

Runoff generated between SR-62 and the site would be conveyed around the site's perimeter by a natural bottom channel. (Exs. 1, Appen. 5.15c; 200, pp. 3-12 – 3-13.) On-site runoff would drain as it would naturally from north to south through the RSEP site. The **Soil and Water Resources** section of this Decision discusses the project's proposed storm water and process wastewater disposal. (Ex. 200, pp. 3-13 - 3-14.)

9. Non-Hazardous Solid Waste

Construction activities are expected to generate an estimated 350 cubic yards of non-hazardous solid wastes, consisting of scrap wood, steel, glass, plastic, scrap metal, and paper. Of these items, recyclable materials would be separated and removed to the extent reasonably possible, and transported to recycling facilities. Non-recyclable solid materials (insulation, other plastics, food waste, roofing materials, vinyl flooring and base, carpeting, paint containers, packing materials, etc.) would be disposed of at a Class III landfill. (Exs. 1, pp. 2-30 - 2-31, SR 2009a, Table 5.14-1; 200, pp. 3-13 - 3-14.)

Non-hazardous liquid wastes generated during construction are expected to include equipment washdown water, emission control scrubbing solution purge, storm water runoff and sanitary waste. Storm water runoff would be managed in accordance with appropriate LORS. Sanitary wastes would be pumped to tanker trucks by licensed contractors for transport to a sanitary wastewater treatment plant. See the **Soil and Water Resources** section of this Decision regarding the management of project wastewater. (Exs. 1, pp. 2-30 – 2-31.)

Non-hazardous solid wastes generated during project operations would consist of glass, paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes. The project would generate approximately 10 cubic yards per year of non-hazardous waste, (the estimate does not include sewage). These wastes would be recycled to the greatest extent possible, and the remainder would be removed on a regular basis for disposal in a Class III landfill. Non-hazardous oily rags (one 55-gallon drum per month) would be laundered at an authorized recycle facility. Sanitary wastewater would be treated with an on-site septic system, and sludge would be contained onsite and transported to an off-site disposal facility as needed.

10. Hazardous Waste Management

During construction, anticipated hazardous wastes include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Estimated amounts are 60 empty containers, 7,500 gallons of oils, solvents, and adhesives (every 90 days), and 36 batteries (per year). Empty hazardous material containers would be returned to the vendor or disposed of at a hazardous waste facility; solvents, used oils, paint, oily rags, and adhesives would be recycled or disposed of at a hazardous waste facility; and spent batteries would be transported to a recycling facility. (Ex. 1, Table 5.14-1.)

During RSEP operations, the proposed project would generate both non-hazardous and hazardous wastes in solid and liquid forms under normal operating conditions. The non-hazardous wastes were described above in the Waste discussion. The project proposes to use three five-acre, double-lined evaporation ponds to manage the industrial wastewaters generated by the power block. The wastewater to be discharged into the evaporation ponds is anticipated to be non-hazardous; however, it would contain pollutants which could exceed water quality objectives or affect the beneficial uses of ground water, if released. Therefore, the wastewater would be classified as a “designated waste” and would be regulated by the State and Regional Water Boards. The Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) has jurisdiction over the area where the RSEP would be located. The project’s molten salt heat storage and transfer fluid feature will not generate any waste, in that it is a closed loop system.

Hazardous wastes that may be generated during routine project operation include oily absorbent and spent oil filters, and used hydraulic fluid (SR 2009a, p.

5.14-8). In addition, spills and unauthorized releases of hazardous materials or hazardous wastes may generate contaminated soils or cleanup materials that may also require management and disposal as hazardous waste.

11. Fire Protection

The fire protection system would be designed to protect personnel and limit property loss and plant downtime in the event of a fire. The primary source of fire protection water would be the 840,000-gallon raw water storage tank to be located in the power block as supplied by the project groundwater well. Approximately 480,000 gallons would be usable for plant process needs and 360,000 gallons would be reserved for fire protection. The project's overall fire water suppression system would be divided into two distinct fire suppression systems. One fire pump set would serve the fire suppression needs within the power block, and the second would serve the needs of the solar receiver tower and administration and shops areas located between SR 62 and the solar field. For both fire water pump systems, an electric jockey pump and electric motor-driven main fire pump would be provided to increase the water pressure to the level required to serve all fire fighting systems. In addition, a backup diesel engine-driven fire pump would be provided for each of the two firewater pump systems to pressurize the fire loop if the power supply to the electric motor-driven main fire pumps fails. (Exs. 1, p. 2-33; 200, p. 3-9.)

12. Construction Timeline and Workforce

The Applicant has proposed RSEP construction would begin in the first quarter of 2011, begin startup testing in the first quarter of 2013, and to achieve commercial operation by third quarter of 2013 for an overall 30-month construction period. The applicant expects the peak construction period to occur between months 8 and 20 with a peak construction workforce of up to 438 workers. The Applicant proposes to perform construction between 5 a.m. to 7 p.m. on weekdays and Saturdays. Construction could occur at times on a 24-hour, seven day-per-week basis to make up schedule deficiencies, to work around extreme mid-day heat or other weather events, or to complete critical construction activities such as when pouring concrete. (Exs. 1, pp. 2-37 - 2-41; 200, p. 3-14.)

13. Facility Closure

Following the operational life of 30 years, the project owner would perform site closure activities to meet federal and state requirements for the rehabilitation and

revegetation of the project site after decommissioning. The procedures to be used for project decommissioning and restoration would be in accordance with a Facility Closure Plan. Under this plan, it would be expected that all aboveground structures and facilities would be removed to a depth below grade, and removed off-site for recycling or disposal. Some concrete, piping, and other materials existing below grade may be left in place. Areas that had been graded would be restored to original contours. Shrubs and other plant species would be revegetated. (Ex. 1, p. 2-30.)

## FINDINGS OF FACT

Based on the evidentiary record, we find as follows:

1. Solar Reserve LLC will own and operate the Rice Solar Energy Project in an unincorporated area of Riverside County, California.

2. The project will be a concentrating solar power facility constructed on privately-owned land. The facility will have a nominal generating capacity of 150 MW.

3. The project's concentrating solar power technology consists of a field of heliostats that concentrate and focus the sun's energy on a central receiver.

4. The project features thermal energy storage that allows solar energy to be captured throughout the day and retained in a liquid salt heat transfer fluid.

5. The project and its objectives are adequately described by the relevant documents contained in the record.

6. The RSEP project will contribute to meeting the Applicant's goals that include generating controllable, predictable renewable power using integral thermal storage technology; delivering a minimum of 450,000 MWh of cost-competitive renewable power annually; minimizing use of public lands by siting the project on previously disturbed private property; and producing a reliable electricity supply free of carbon emissions to help diversify California's electrical power generation portfolio.

## CONCLUSION OF LAW

1. We therefore conclude that the RSEP is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act.

# II. PROJECT ALTERNATIVES

As a general rule, the California Environmental Quality Act (CEQA), its Guidelines, and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which meet the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts. (Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e); *see also*, tit. 20, § 1765.)

We therefore evaluate the project alternatives. The range of alternatives, including the "No Project" alternative, is governed by the "rule of reason" which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative where the effect cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f)(3).]

Because a portion of the Rice Solar Energy Project (RSEP) will be sited on land managed by the U.S. Bureau of Land Management and the Applicant has requested transmission interconnection with Western Area Power Administration, it is also subject to review under the National Environmental Policy Act (NEPA). As appropriate, our evaluation summarizes NEPA conclusions of Western Area Power Administration and the Bureau of Land Management.

The evidence in this case demonstrates that the project, as mitigated, will not create any significant adverse impacts. The evidence was undisputed. (10/29/10 RT 21, Exs. 1, § 6.0,;3; 4 [36-43]; 8; 23; 48 [Alternatives]; 200, § 4.1.)

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Objectives

The Applicant's stated project objectives include:

- Providing sustained renewable power using integral thermal storage technology that is controllable and predictable and that can:
  - Capture solar energy throughout the day, in varying sunshine and cloud cover conditions;
  - Retain thermal energy for electricity production later, during hours of peak electricity demand, including nighttime hours;

  - Generate stable power to facilitate integration of increasing quantities of intermittent resources and thereby enhance grid system reliability;
  - Diminish the necessity for grid system backup resources such as spinning reserve and peaking turbines;
  - Deliver a minimum of 450,000 MWh of cost-competitive renewable power annually;
  - Concentrate energy deliveries around high electric demand hours with generator output sized at 150 MW; and
  - Minimize use of public lands by siting the project on previously disturbed private property.
- Produce a reliable electricity supply free of carbon emissions to help diversify California's electrical power generation portfolio. (Ex. 1, pp. 6-1-6-2.)

The Applicant also seeks to respond to California's on-peak demand for electricity and contributed to the displacement of dirtier, less-efficient fossil fuel generation resources (i.e. peaking turbines) throughout the region and support Governor Schwarzenegger's Executive Order S-21-09 to streamline California's renewable energy project approval process and to increase the State's RPS to 33 percent renewable power by 2020. (Ex. 1, p. 6-2.) The Applicant also seeks to minimize the length of transmission interconnections.

Staff restated and summarized the Applicant's objectives in a manner that would facilitate Staff's alternatives analysis. Staff identifies the project objectives as:

- Constructing and operating of a 150 MW utility-scale solar facility in California capable of interconnecting to the California Independent System Operator (California ISO) Grid through Western's electrical transmission system;
- Locating the facility in areas of high solarity with ground slope of less than 6 percent; and
- Contributing to the state's renewable energy goals, the National Energy Policy of 2001, and the Energy Policy Act of 2005 (Public Law 109 58, August 8, 2005) which collectively encourage the development of renewable energy resources. (Ex. 200, p. 4-7.)

2. Project Description

The RSEP is 150 MW solar thermal facility that will use concentrating solar power (CSP) technology. A large circular field of mirrors (heliostats) focuses sunlight onto a central receiving tower; up to 17,500 heliostats would occupy 1,387 acres. Each 24 foot by 28 foot heliostat would be mounted on a 12-foot tall

post. The solar tower and receiver (plus 15 foot crane) would have a total height of 653 feet.

The RSEP will use liquid salt as the heat transfer fluid. Seventy million pounds (4.4 million gallons) of liquid salt will be stored in insulated hot (1,050° F) and cold (550° F) tanks to retain solar energy. Thermal energy storage allows electric generation beyond sunlight hours and during periods of cloud cover, for an average of 8.4 hours per day. To produce electricity, the salt circulates through the receiver and steam generation system, where superheated steam is used in a Rankine cycle reheat steam turbine generator.

Steam turbine exhaust would be dry-cooled utilizing a 20-cell air-cooled condenser (ACC).

If Western approves the interconnection request, the RSEP will interconnect with Western's 161-kV Parker-Blythe #2 transmission line, 10 miles southeast of the site. A new substation (300 feet by 400 feet) would be constructed at the interconnection point. The 10 mile generation tie line that would connect RSEP to Western's Parker-Blythe #2 transmission line would cross private and BLM land; the latter part is adjacent to the Rice Valley Wilderness Area. The gen tie would operate at 161-kV, and could operate at 230-kV with minor transformer modifications when Western rebuilds the Parker-Blythe #2 line to 230-kV. Portions of the transmission line route would be considered by the BLM as Multiple-Use Class M (Moderate Use) per the CDCA. SolarReserve has signed a power purchase agreement with Pacific Gas and Electric (PG&E) for the electricity generated from the RSEP. (Ex. 200, pp. 4-9 – 4-10.)

3. Summary of Project Impacts

As discussed throughout this Decision, environmental impacts for all issue areas would not be significant or would be mitigated to a less than significant level. The analyses and conclusions are summarized below as the RSEP is compared to each proposed alternative site.

4. Alternative Sites

a. Rejected Alternatives

The Applicant identified and ultimately rejected two alternative sites that could feasibly attain most of the project's objectives. The locations of the sites, which

are identified as the McCoy and Cadiz alternatives, are shown below in **Alternatives Figure 1.**

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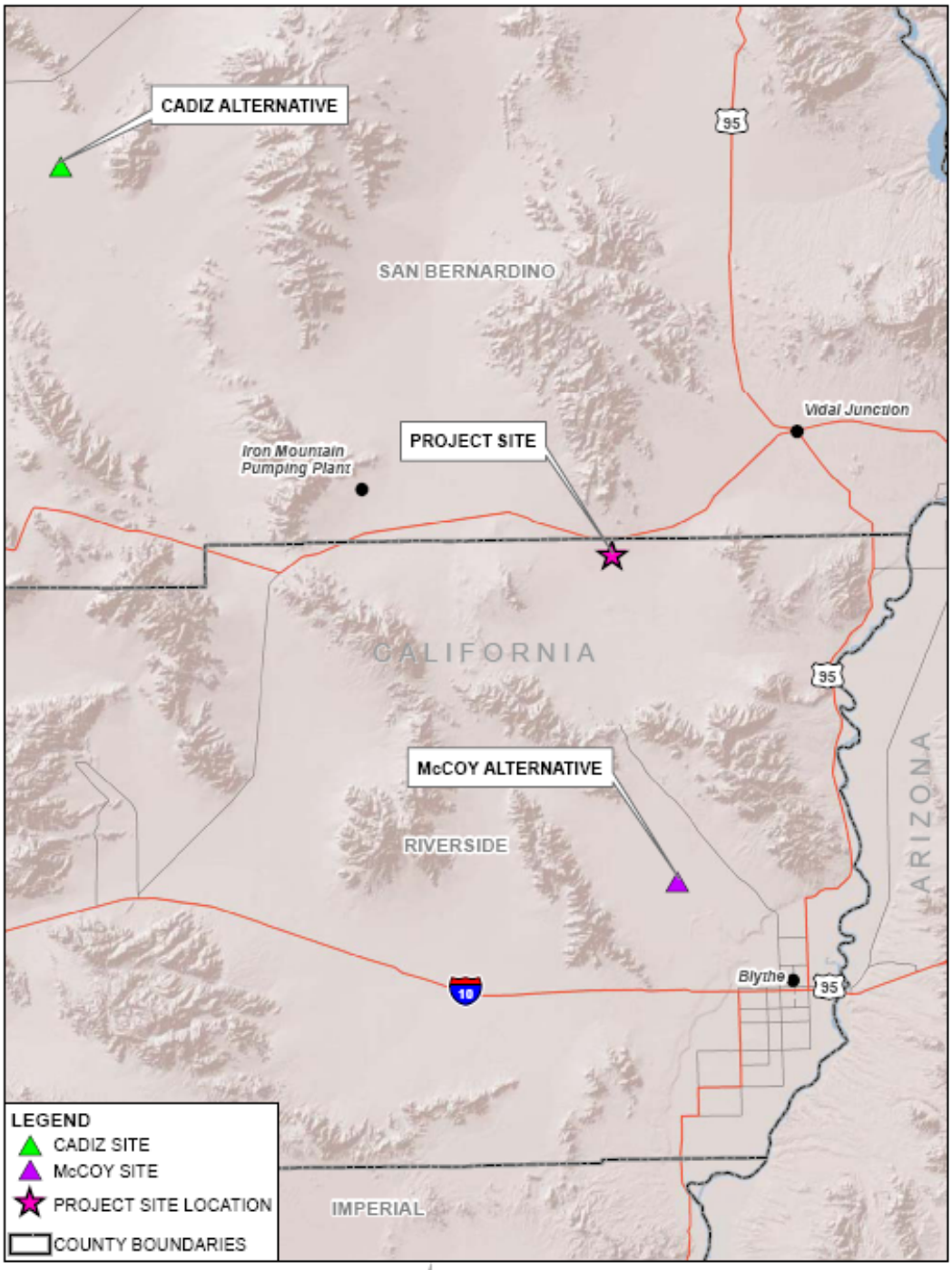
## PROJECT ALTERNATIVES - FIGURE 1
## ALTERNATIVE SITE LOCATIONS




This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

0 5 10
Miles

FIGURE 6.3-1
ALTERNATIVE SITE LOCATIONS
RICE SOLAR ENERGY PROJECT
*RIVERSIDE COUNTY, CALIFORNIA*

CH2MHILL

The Applicant's succinct but thorough description of the sites and comparative analyses are contained in the record. (Ex. 1, pp. 6-3 - 6-13.)

In summary, the McCoy alternative is described as a 1,905 acre-site is comprised of five parcels. Four parcels are federal land administered by the BLM. The remaining parcel is under private ownership. The site is approximately eight miles northwest of the City of Blythe, and six miles north of the Blythe airport. It sits in a valley framed by the northwest to southeast trending towards the McCoy Mountains and Big Maria Mountains.

The site is currently open desert and is not adjacent to degraded or impacted private lands. However, development within five miles of the site likely given the number of identified BLM right of way (ROW) applications. (Ex. 200, p. 4-17.) Because the site is located within the Southwest Area National Corridor, a one mile transmission line would be needed to interconnect to Western's Parker-Blythe #2 transmission line to the west. A new interconnection substation would also be required.

Like the RSEP, a project at this site will result in the permanent loss of 1,410 acres of desert habitat. California satintail may occur partially within the site. Other species observed at the site or that might occur at the site include the desert tortoise, bitter hymenoxys, California leaf-nosed bat, California McCoy snail, dwarf germander, and vermilion flycatcher. (Ex. 200, p. 4-18.)

The 2,551-acre Cadiz alternative is approximately two miles by two miles. The four parcels that comprise the site are privately owned and adjacent to federal land administered by BLM. The site is six miles south of the National Trails Highway (Route 66), 20 miles south of Interstate 40, 15 miles east of the town of Amboy, and six miles south of Chambless (which contains the nearest residences).

The site is undeveloped. Adjacent lands to the north and west are, or have been, used for agricultural production. A 60-mile transmission interconnection would be required to connect to Western's Parker-Blythe #2 transmission line. A connection to Metropolitan Water District's 230-kV line near the Iron Mountain substation would require an approximately 30 mile interconnection. (Ex. 200, p. 4-16.)

**Alternatives Table 1** below presents the Applicant's summary of the environmental and project development constraints of these sites as compared to

the RSEP. Staff concurred with the Applicant's conclusions. (Ex. 200, pp. 4-16 – 4-18.)

**Alternatives Table 1**
**Environmental and Project Development Constraints of the RSEP and Alternative Sites**

| Site or Alternative | RSEP Site | McCoy Site | Cadiz Site |
|---|---|---|---|
| Site control | Yes | No | No |
| Brownfield site | Yes | No | No |
| Privately owned | Yes | No | Yes |
| Land Use and zoning | Open Space – Rural Controlled Development Area zoning, utility uses permitted | Open Space – Rural Controlled Development Area zoning, utility uses permitted | • Agricultural zoning<br>• General Plan Amendment for an Energy Facilities overlay required |
| California Department of Conservation Designation | None | None | None |
| Williamson Act Contract | No | No | No |
| Sensitive receptors nearby | Residences at 15 miles | Rural residence at 2 miles; residential clusters at 5 miles | Residences at 6 miles |
| Visual resources | No significant or protected viewsheds or designated scenic highways | No significant or protected viewsheds or designated scenic highways | No significant or protected viewsheds or designated scenic highways |
| Biological resources | • Impacts to desert tortoise and other species would be mitigated<br>• Habitat quality low due to past disturbance | • Impacts to desert tortoise and other species would be mitigated<br>• Removal of pristine desert habitat | • Impacts to desert tortoise and other species would be mitigated<br>• Removal of pristine desert habitat<br>• Greater habitat disturbance with 60-mile-long transmission line |
| Cultural resources | • Previously used site, so prehistoric archaeological deposits may be disturbed<br>• Rice Army Airfield historic site | • Unknown, but prehistoric archaeological properties likely | • Unknown, but prehistoric archaeological properties likely<br>• Likely more disturbance of archaeological sites with 60-mile-long transmission line |
| Water resources | • Groundwater sufficient for project needs<br>• No effects on basin water quality or other wells | Groundwater availability and potential for impacts unknown | Groundwater availability and potential for impacts unknown |
| Significant unmitigated impacts or costly mitigation? | No | Unknown | Unknown |

Staff identified and rejected 15 other sites for detailed evaluation, including the sites discussed below. (Ex. 200, pp. 4-18 – 4-29, Table 1 (pp. 4-2 – 4-4.) Nine of these sites are briefly described below.

*Agriculture Lands*. The Agriculture Lands site is located in Imperial Valley, southwest of El Centro. The site would be comprised of seven separate and unconnected parcels, totaling 4,600 acres. Each parcel is on disturbed land: Parcel BL 1 has been fallow for several years with recovering native habitat whereas parcels BL 2 through BL 7 consist of active agricultural lands with little or no native habitat. An approximately 7.5 mile interconnection would be required to reach the Imperial Valley Substation.

Staff's environmental assessment established that the site supports species including the burrowing owl and flat-tailed horned lizard and sensitive plants such as annual rock-nettle. However, because the surrounding area is highly disturbed with agriculture, impacts to biological resources would likely be less than at the RSEP. Impacts to cultural resources would also likely be less than the RSEP site because the Imperial County General Plan EIR identifies most of the agricultural lands as having virtually no rare cultural resources (although a portion of BL 6 is located in an area identified as very sensitive for cultural resources). And, given the site's agricultural nature, visual impacts would be reduced in comparison to the RSEP site.

An industrial use at this site would likely be inconsistent with the Imperial County General Plan, which does not allow such a use on agricultural land unless the use is directly associated with an agricultural purpose.

Staff rejected the site for detailed evaluation for the following reasons: 1) the parcels are of varying configurations and none are of adequate shape or size for a 150 MW power tower facility and 2) I-8 and Highway 98 bisect the largest parcel.(Ex. 200, pp. 4-19 – 4-20.)

*Blythe Mesa*. This site is northwest of Blythe in the Palo Verde Valley. It includes land that is no longer productive or economically viable for agriculture, as well as Solar Energy Study Areas on public lands identified in BLM Solar Energy Development Programmatic EIS documents. The site, comprised of 50 percent agriculture, is primarily surrounded by undeveloped BLM land to the west. Agricultural land, as well as a Riverside County dumping site, golf course, and rural residences are located to the east. This 6,200 acre site consists of

three sections: a 2,780 acre southern section (Section 1), 2,000 acre eastern section (Section 2), and 1,280 acre northern section (Section 3).

Section 1 is unimproved and consists of 56 parcels with ten different landowners. A major wash made up of approximately 46 acres of desert dry wash woodland traverses this section. Section 1 also contains a disturbed wetland, two active detention basins, and three inactive detention basins. Section 2 consists of 79 parcels and 23 landowners. It contains scattered residences and is crossed by the railroad tracks of the Arizona & California Railroad Company, and has a wash that appears to drain agricultural fields. Section 3 consists of 17 parcels with ten landowners, and contains scattered residences. It is crossed by the Atchison Topeka and Santa Fe railroad and Western's 161-kV Parker-Blythe #2 transmission line.

A transmission interconnection (for any of the three sections) would likely follow the ROW of the Western line. The interconnection would trend south for 10-12 miles to reach the proposed Colorado River Substation. It would be located primarily on open space and through agriculture fields.

Staff's environmental assessment identified several areas of concern regarding biological resources. A number of sensitive species, including the desert tortoise, are likely in the site vicinity and could be adversely impacted. Furthermore, the desert dry wash and areas of Sonoran creosote bush scrub would be permanently lost as a result of vegetation clearing and grading for a solar facility. Although approximately 85 percent of the site is described as moderately to highly disturbed, impacts to biological resources would likely be similar to the RSEP. The disturbed nature of the site also reduces the potential for currently undocumented cultural resources.

Because sensitive receptors include relatively nearby residences, noise impacts would be higher here than at the RSEP, where there are no nearby sensitive receptors. Potential impacts to air traffic are also of concern given the southern section's one mile proximity to the Blythe airport and the 653-foot tall receiver tower. With respect to visual resources, although this location is less remote than the RSEP site (and thus presents a greater contrast to the landscape), the location of sensitive receptors near this site would result in equally significant visual resource impacts.

Staff rejected this site because 1) the sections that comprise this alternative are either of inadequate size or shape for the proposed project, 2) expanding any of

the three sections to accommodate the facility would encompass and impact more undisturbed desert habitat, and 3) the proximity of the largest section the Blythe airport would likely make the site infeasible given the air traffic impacts. (Ex. 200, pp. 4-20 – 4-21.)

*Broadwell Lake.* This site is located on land administered by the BLM, approximately 8.5 miles north northwest of Interstate 40 at Ludlow, in unincorporated San Bernardino County. It is approximately 1.5 miles east of the Kelso Dunes Wilderness, 7 miles north-northwest of the Bristol Mountains Wilderness, and 1 mile west of Broadwell Dry Lake. National Trails Highway (Route 66) and Interstate 40 are located approximately 8.5 miles south of the alternative site, and the historic Tonopah and Tidewater Railroad is located approximately 7 miles south of the site. The 5,000 acre site is large enough for the proposed RSEP.

Siting the project at this location would require a new substation and a short interconnection to existing 230-kV and 500-kV SCE transmission lines, 1 mile northwest of the site.

Staff's environmental assessment established that a project at this site would result in the permanent loss of relatively undisturbed vegetation (Mojave creosote scrub). Other impacts to biological resources would involve possible disruption of potential habitat for the desert tortoise. Impacts to biological resources would likely be greater than for the previously disturbed RSEP site.

Regarding visual impacts, the evidence indicates that the site is highly visible from the Kelso Dunes Wilderness and Bristol Mountain Wilderness, as there are no natural visual buffers between the site and these locations. The site is also visible from the Cady Mountains and potentially visible from the Afton Canyon Natural Area (an Area of Critical Environmental Concern, and one of the few places the Mojave River flows on the surface most of the year). The nearby Broadwell Lake has a high level of recreational use, and receives many visitors. Thus, impacts to visual resources and recreation would likely be higher than at the RSEP. Also, it is significant that the site would be located within the BLM North and Eastern Mojave (NEMO) Desert Management Plan, and the BLM Western Mojave Planning Area. Any significant unmitigated biological impacts caused by the project could make the site incompatible with the NEMO or Western Mojave Plans.

Cultural resources are another areas of concern with this site as it has 20 known archaeological, architectural, and historical sites, and is deemed to have a high sensitivity for Prehistoric and Historic archaeological resources.

Staff rejected this site because 1) it would require development of undisturbed, public land and 2) the site would have potentially higher environmental impacts – including to biological resources, visual resources, and land use and recreation – than the RSEP site. (Ex. 200, pp. 4-21 – 4-22.)

*Gabrych*. This site is located in the Palo Verde Valley by the Colorado River, east of the town of Palo Verde. It is on 10 parcels of privately owned land (with only one landowner) totaling 1,800 acres. The site is bordered to the south and east by the Colorado River. The Riverside/Imperial County line forms the site northern border. There are active agricultural uses west and north of the site.

Eighty-five percent of the site is comprised of active agricultural fields and active sheep grazing. The site also supports native habitat, including 38 acres of riparian scrub, 82 acres of arrowweed scrub, and 35 acres of desert saltbush scrub in the southwestern portion of the site and adjacent to the river. Seven acres of the Colorado River are within the southern portion of the site, and are jurisdictional to the U.S. Army Corps of Engineers and California Department of Fish and Game. Other jurisdictional areas may include named on-site canals, riparian habitat along the D-23-1-3 and C Canals, and arrowweed scrub occurring in the southwestern corner of the site.

The site could connect with the SCE system at the proposed Colorado Substation through a new transmission line that would trend west from the site for approximately five miles then turn north for approximately 12 miles. The new transmission line would cross BLM land and active and fallow agricultural land, would be located adjacent to the existing Western 161-kV transmission line, and would be located within an existing CDD designated utility corridor. The transmission line would be within 500 feet of rural residences within the town of Palo Verde. (Ex. 200, p. 4-22.)

Staff's environmental assessment identifies impacts to biological resources as an area of concern. The state-endangered (and of federal concern) Western yellow-billed cuckoo occurs along the eastern edge of the site, in riparian habitat associated with the river. The BLM-sensitive Yuma myotis is reported along the southern boundary of site and a number of other special status species – including the Colorado River cotton rat – occur to the west of the site. A solar

project at this site would also need to avoid the native and potentially jurisdictional habitat in the site's western portion and along the river, thereby lessening potential impacts to special status species as well. Development of this site could result in impacts to waters of the State and/or waters of the U.S. The potential for unrecorded cultural resources is low, as the entire surface of this site (with the exception of 233 acres) has been plowed or impacted by other agricultural activities. Thus, impacts to cultural resources are likely to be less than at the RSEP site.

A project at the site could result in temporary impacts to recreational users travelling down the Colorado River, and a direct impact on recreational users at Harvey's Fishing Hole. There would also be noise and visual impacts to the nearby Harvey's Fishing Hole. These visual impacts would likely be significant, similar to the RSEP site.

Staff rejected this site for the following reasons: 1) the site would be too narrow for the proposed project, 2) avoiding the native and potentially jurisdictional habitat in the western portion of the site (as well as along the Colorado River) further limits the ability of the site dimensions to accommodate the project, and 3) the site would not substantially reduce environmental impacts – and would have greater impacts to water resources, land use and recreation, visual resources, and noise and vibration. (Ex. 200, pp. 4-22- 4-23.)

*Garlock Road*. The Garlock Road site is located in southeastern Kern County's Fremont Valley, upstream of Koehn Dry Lake. It consists almost exclusively of fallow agricultural fields and is surrounded largely by undisturbed, native vegetation communities. The site encompasses five vegetation communities (in this approximate order of coverage from high to low): disturbed habitat, disturbed desert saltbush scrub, disturbed stabilized dunes, desert saltbush scrub, and developed. Disturbed habitat supports species such as mustard, thistle, Mediterranean grass, and filaree). The less disturbed surrounding areas are designated Desert Tortoise Critical Habitat.

The 2,000-acre site is comprised of 11 privately owned parcels in a rough U shape. There are a few isolated buildings onsite, and a small number of possibly unoccupied residential structures in the town of Garlock to the north of the site. The transmission interconnection to SCE's Kramer-Inyoken 230-kV transmission line would follow Garlock Road to the east and then Goler Road to the south; additional private party and BLM parcel crossings would be required.

Staff's environmental assessment establishes the presence of special status species within five miles of the site, including the listed desert tortoise, Western snowy plover, and Mohave ground squirrel. Although the largely disturbed nature of the site would limit wildlife use of the site for foraging, sheltering, breeding, or dispersal, because the site occurs in the center of Fremont Valley, wildlife may cross it to travel between the mountains to the north and south or between the upper elevations in the valley to the east to Koehn Lake to the west. Thus, impacts to biological resources would likely be similar to impacts at the RSEP, which is likewise on disturbed land surrounded by comparatively undisturbed desert habitat.

There are washes along the northern border and skirting the northwestern-most corner of the site. A focused delineation would be required to confirm jurisdiction since the wash may have connection to Koehn Lake. And, in relation to the wash, the northwestern portion of the site falls within a flood zone designated by the Federal Emergency Management Agency. Thus, use of the affected parcels would likely require engineering measures to reduce the risk of flooding.

Cultural resources impacts are possible at this site. Constructing and operating a solar facility here could affect the site of Old Garlock (3.2 miles southwest of the current town location), and possibly one historic archaeological site (an historic can dump that may extend into site area). Because of the history of agricultural use of the entire site, there is little potential for intact prehistoric or historic surface resources. Based on available information, impacts would be potentially less than or similar to impacts at RSEP site.

A project at this site would be visible to motorists and to users of designated offroad routes in the BLM Rand Mountains Fremont Valley Management Area, offroad trails in the El Paso Mountains, and the southeast portion of the Red Rock Canyon State Park. Visual impacts would likely be significant and similar to the RSEP site.

Staff rejected this site because in its current configuration, it is not adequately shaped or sized for the proposed RSEP. If the site was enlarged by available private parcels, the enlargement could encroach on undisturbed land or Desert Tortoise Critical Habitat. Moreover, the site does not offer a substantial reduction in impacts as compared to the RSEP. (Ex. 200, pp. 4-23 - 4-24.)

*Manix*. This 2,600- acre alternative site is located near Manix in San Bernardino County. The site is large enough for the proposed project with some room for

adjustment. It contains a combination of privately owned and BLM administered land, including some fallow and ruderal fields and developed areas. The site comprises 47 parcels. Union Pacific railroad tracks form the northern site border. The Mojave River and the Camp Cady Wildlife Area are located to the south. Mojave creosote bush scrub and atriplex scrub are the predominant vegetation types. (Ex. 200, p. 4-24.)

SCE's Coolwater-Dunn Siding 115-kV transmission line runs through the Manix alternative site, and would need to be realigned. A project at the site would require either an upgrade of the SCE transmission line or the construction of a new 10 mile 161-kV or 230-kV transmission line that would follow the existing corridor southwest to the Coolwater Substation.

The Mojave River, which rarely flows in the Manix area, runs to the south of the site. There are patches of well-developed riparian habitat and areas of no and poorly developed riparian habitat. Sensitive species – including Mojave fringe-toed lizard, desert tortoise, and Barstow woolly sunflower – may occur in the site vicinity. The Manix site, however, is generally made up of unsuitable to medium quality habitat for desert tortoise and contains poor quality habitat for rare plants. Impacts to biological resources would likely be similar to the impacts of the RSEP site.

The site is adjacent to the Mojave River floodplain, a landscape context with moderately high frequency of prehistoric archaeological sites. Camp Cady, established by the U.S. Dragoons in 1860, is a California State Historical Landmark (No. 963-1). The former San Pedro, Los Angeles, and Salt Lake Railroad, now the Union Pacific Railroad, and segments of the Old Spanish Trail, the Mormon Trail, and the Mojave Road are thought to run through the area comprising the alternative site; the presence and integrity of these segments are presently unconfirmed. The site could have similar or slightly greater impacts to cultural resources than the RSEP site.

Staff's evidence shows that Interstate 15 provides ready access to workers from the Barstow and Victor Valley areas, decreasing air emissions associated with commuting. Travel on Interstate 15, however, operates at a congested level on Friday afternoons, and a traffic analysis may result in the need to limit construction-period truck and commute traffic to off-peak periods. Construction equipment could travel to Barstow via railroad. In addition, the proximity to Interstate 15 would lead to prominent visibility for traffic in both directions.

However, given the site's agricultural setting and proximity to motorists, visual impacts are likely to be similar to the proposed RSEP site.

Staff rejected this site because even though it would be suitable in size and configuration for the proposed RSEP, there would be no reduction in impacts and slightly greater impacts in some issue areas as compared to the RSEP site. In addition, site control over 47 parcels might be difficult to obtain. (Ex. 200, pp. 4-24 – 4-25.)

*Mesquite Lake*. The Mesquite Lake alternative site is located in the Imperial Valley between the towns of El Centro and Brawley and is within the Mesquite Lake Specific Plan Area. Mesquite Lake is an area bordered by Keystone Road to the north, Highway 86 to the west, Harris Road to the south, and approximately 2,250 feet east of Old Highway 111 to the east. Transmission lines and roads occur within the site. The Mesquite Lake Plan Specific Area encompasses approximately 5,100 acres of land previously used primarily for agriculture. An additional 2,150 additional acres may be available immediately to the north.

The site is highly disturbed and is promoted for job-producing industrial land uses. Active and inactive agricultural land is comprised of hay fields, fallow fields, cattle grazing, a fish farm, processing plant, and equipment staging areas. There are several industrial facilities including the Holly Sugar Plant, Imperial Valley Resource Recovery Plant (an operational biomass facility), and a non-operational alternative-fuel-burning electric power plant. Four additional projects have applied for use of land in the Specific Plan Area. The Area contains seventy parcels owned by 52 landowners. Several canals traverse the site. A 25 mile interconnection would be needed to reach the Imperial Valley Substation.

Three vegetation communities have been identified within the Specific Plan Area: bush seepweed-iodine bush scrub, tamarisk scrub, and disturbed wetlands. Sensitive species within five miles of the site may include the flat-tailed horned lizard, Yuma clapper rail, Western yellow bat, burrowing owl, Gila woodpecker, Crissal thrasher, and Abrams' spurge. Agriculture lands and fish ponds on the site also provide foraging, covert, and/or breeding habitat for migratory birds, including special-status bird species that may be present. The surrounding area is more intensely disturbed than the Rice Valley and overall impacts to biological resources would likely be similar or less than the RSEP site.

Staff also noted that 15 known archaeological, architectural, or historical sites would potentially be affected by construction and operation of a solar facility at this site. However, areas where intensive cultivation for agricultural use have occurred would have a low probability for the presence of significant cultural resources due to deep excavation for drainage tiles and recurring surface disturbance. And, because a significant portion of the site has been cultivated, development of a solar project at the site would likely impact fewer cultural resources than the RSEP site.

Staff further determined that although the area includes active and fallow farmland, the loss of agricultural lands is likely to be a less than significant impact because the County has determined, since the 1970s, that the project area's highest and best use would be for medium and heavy industrial uses that would provide for more diversified employment opportunities and has rezoned the land for industrial use. In addition, given the more industrial nature of the site, visual impacts would likely be less than the proposed site.

Staff rejected this site even though its overall size and shape of the Mesquite Lake alternative is sufficient for the RSEP project. The project is 1) is traversed by three (34.5-kV, 92-kV, and 161-kV) Imperial Irrigation District transmission lines, Highway 111 and Dogwood Road (north to south arteries), the Rose Canal, and Union Pacific Railroad tracks and 2) the highly disturbed site would be suitable for a solar project with smaller, discrete units, but not for the proposed solar power tower facility. (Ex. 200, pp. 4-26 - 4-27.)

*Siberia East*. The 4,000 acre Siberia East site is off the National Trails Highway (Route 66) in San Bernardino County It is 8.5 miles southeast of Ludlow, five miles south of Interstate 40, and north of the Twentynine Palms Marine Corps Base. The National Trails Highway and Burlington Santa Fe railroad form the northeast border of the site. Barstow is 50 miles to the west.

Siberia East is on BLM-administered land, in the West Mojave Planning Area and in the California Desert Conservation Area. The land classification of Multiple Use would allow for a solar facility if NEPA requirements are met and the evidence establishes that BrightSource Solar has submitted an application to BLM for a 1,600 MW solar project on a larger 15,000 acre area at the site.

The site consists primarily of undisturbed Mojave Desert scrub, specifically creosote bush scrub, mixed scrub and blockbush scrub. It is on the northern border of the Northern Colorado Desert Tortoise Recovery Unit. A 22-mile

interconnection would need to be constructed, most likely to the SCE's Pisgah Substation to the northwest of the site.

Staff's environmental assessment concludes that siting the RSEP project at the Siberia East site would result in the permanent loss of relatively undisturbed vegetation, in what is currently open space, public land. Impacts to biological resources would likely be greater than those caused by the RSEP and there could be direct and/or indirect impacts to the desert tortoise or its occupied habitat.

As to cultural resources, the site is deemed to have a high sensitivity for prehistoric and historic archaeological resources, a low sensitivity for historic resources, and unknown sensitivities for cultural landscapes and ethnic resources. A project at the site would have a direct visual impact to the National Trails Highway.

Staff rejected this site because 1) it would not provide a reduction in impacts over the proposed site, and would likely have greater impacts to biological resources (particularly the desert tortoise), 2) it is on undisturbed public land whereas the proposed RSEP site is on previously disturbed private land, and 3) it would require a 22-mile transmission interconnection, which is longer that the interconnection proposed for the RSEP. (Ex. 200, pp. 4-27 – 4-28.)

*South of Highway 98*. The South of Highway 98 Alternative site is 5,000 acres located approximately four miles southeast of the greater El Centro region. It is on land administered by the Bureau of Reclamation. The site is between Highway 98 to the north and the United States/Mexico border to the south. It is crossed by the concrete lined All-American Canal. The 500-kV Southwest Powerlink Transmission Line is opposite the highway. Past seepage from the canal during the period before it was lined, has resulted in the formation of several hundred acres of wetland/riparian habitat on site.

Staff's environmental assessment identifies the site as partially disturbed. It is crossed by the canal, Southwest Powerlink, and off-road vehicle trails. Surrounding land is undeveloped, with the exception of Interstate 8 to the north.

Under the Imperial County General Plan, the All American Canal is considered a Significant Natural Area. It may also be considered a jurisdictional waterway. The canal supports year-round flows and is used by migratory waterfowl as well as resident species such as American coot and great blue heron. The recent

lining of the canal has resulted in the die-off of wetland vegetation in some areas, with continued loss expected. One listed species is identified within five miles of the site: the federally endangered and state threatened Yuma clapper rail. Two California species of special concern (flat-tailed horned lizard and Yuma hispid cotton rat) are within five miles of the site. CNPS-listed plants, the sand food and giant Spanish-needle also occur in the site vicinity. As such, overall impacts to biological resources are expected to be slightly greater at the South of Highway 98 site than at the proposed RSEP site.

The Imperial County General Plan EIR identifies the site as having a moderate to light sensitivity for cultural resources. A cultural resources records search conducted in 2009 for the site identified a total of 51 previously recorded cultural resources sites. However, the construction and ongoing maintenance of the All-American Canal may reduce the probability of undisturbed cultural resources at the site. This site may have slightly less impact to cultural resources than the RSEP site. Visual impacts would likely be similar to the proposed RSEP site.

If water were to be obtained from the Seeley Waste Water Treatment Facility, construction of a 38 mile pipeline would be required. (Ex. 200, pp. 4-28 – 4-29.) Staff rejected this site for the following reasons: 1) it is long and narrow, 2) the portion of the site south of the canal would be too narrow for the heliostat field of the proposed project, 3) the site surrounds the BLM Tamarisk Long Term Visitor Area campground, 4) a 30-mile transmission interconnection could be required to reach the Imperial Valley substation, with potential interference with agriculture operations and aerial spraying, 5) an interconnection to the adjacent Southwest Powerlink is also a possibility, and an interconnection study would likely be required, and 6) the site would not reduce environmental impacts. (Ex. 200, pp. 4-28 -4-29.)

b. Sites Retained for Extensive Evaluation

Staff identified three alternatives for extensive evaluation: the Reduced Acreage Alternative, North of Desert Center Alternative, and the SR 62/Rice Valley Road Transmission Line Alternative. (Ex. 200, pp. 4-12 - 4-14.) Overall, after considering each of the applicable areas of potential environmental impact, Staff determined that none of the alternatives is superior to the current proposal for the RSEP. However, as more fully discussed in the **Biological Resources** section of this Decision, the SR 62.Rice Valley Road Alternative appears superior to the proposed RSEP project. But, with implementation of the **Biological Resources**

Conditions of Certification, the impacts of the proposed RSEP project to biological resources will also be reduced to less than significant levels.

Staff's extensive analysis of the environmental impacts is detailed in the record. (Ex. 200, pp. 6.1-38 – 6.1-43 [Air Quality], 6.1-94 – 6/105 [Greenhouse Gas Emissions], 6.2-125 – 6.2-136 [Biological Resources], 6.3-67_- 6.3-72 [Cultural Resources], 6.5-60 – 65- 98 [Land Use], 6.6-12 - 6.6-13 [Noise and Vibration], 41 [Traffic and Transportation], 6.8-12 -6.8-16 [Socioeconomics], 6.9-35 -6.9-39, [Soil and Water Resources], 6.10-25 – 6.10-[Hazardous Materials], 6.11-12 – 6.11- 15 [Transmission Line Safety and Nuisance], 6.13-20 – 6.13-24 [Waste Management], 6.14 -28 – 6.14-31 [Worker Safety and Fire Protection], 6.15-18 – 6.15 -21 [Geology and Paleontology], 7.1-5 -7.1-6 [ Facility Design], 7.2-9 – 7.2 – 10 [Power Plant Efficiency], 7.3-6 – 7.3-7 [Power Plant Reliability], 7.4-11 – 7.4-12 [Transmission System Engineering].) We provide a summary below.

*Reduced Acreage Alternative*. This site would be located in the same 2,560 acre square-shaped parcel within the larger 3,324 acre ownership property as is currently proposed for the RSEP. However, this alternative would result in a 10 percent smaller heliostat field. The heliostat field (plus the evaporation pond and administration areas) would occupy about 1,270 acres instead of the 1,410 acres required for the proposed project. The heliostat footprint of the Reduced Acreage Alternative is shown in **Alternatives Figure 2**.

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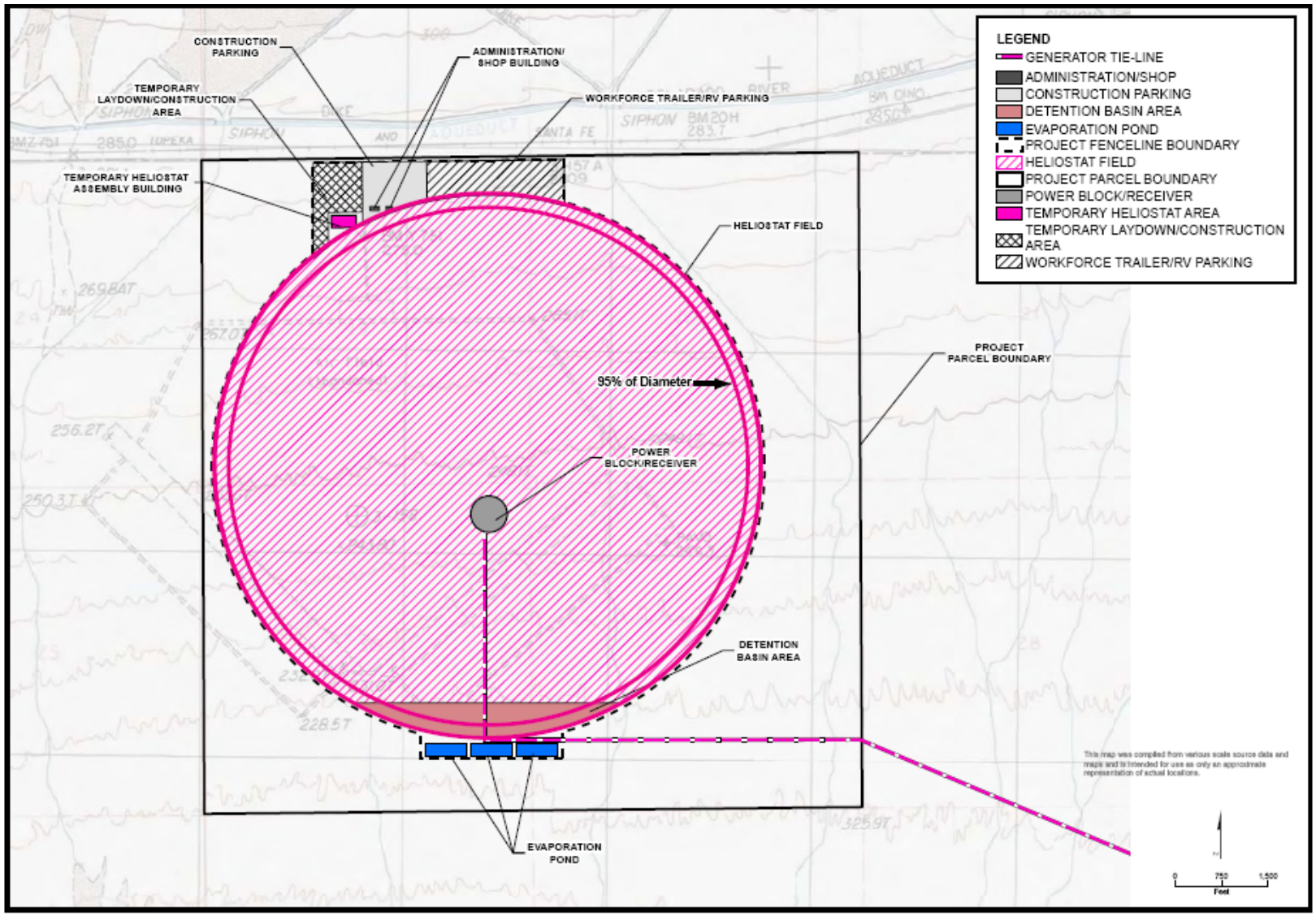
## PROJECT ALTERNATIVES - FIGURE 2
## REDUCED ACREAGE ALTERNATIVES




ALTERNATIVES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC Figure 2.2-6

Although the overall heliostat field distance from the central tower would be reduced, the number of heliostats would remain the same.

The receiver location would remain the same, with the edges of the field contracting towards the center. The site layout, 653 foot total height of the solar tower and receiver, and transmission interconnection to Western's Parker-Blythe #2 transmission line would also remain the same. However, the generation output would be reduced by approximately two MW. (Ex. 200, p. 4-12.)

Similar to the currently proposed RSEP, this alternative would transmit power to the grid through the planned Western substation to be located adjacent to Western's Parker-Blythe #2 161-kV transmission line. (*Id.*)

The elimination of about 140 acres of the proposed project footprint, would consequently reduce impacts to ephemeral washes, the loss of land considered habitat for the state- and federally-listed threatened desert tortoise and impacts to the historic Rice Airfield. Additionally, this alternative would allow the project to contribute clean, renewable energy to help meet the State's energy goals, while minimizing impacts to the desert environment. (Ex. 200, pp. 4-12- 4-13.)

Staff concluded that this reduced acreage alternative, even with Staff-recommended conditions of certification, would also have significant unavoidable visual impacts. (Ex. 200, p. 4-10.)

*North of Desert Center Alternative.* This alternative site would allow for a 150 MW solar thermal facility located on approximately 2,643 acres of land. The site is located along Desert Center Rice Road (State Route 177) east of Kaiser Road, north of Oasis Road, and approximately 1.6 miles north of I 10. It is primarily comprised of private land with smaller sections of BLM land in the eastern portion of the site. The site is characterized as fallow agricultural land.

The site is in the Colorado Desert and meets slope and solarity requirements. More particularly, the site is located just east of the Chuckwalla Valley Raceway, a 400-acre racing facility located at the former Desert Center Airport.

The existing SCE 161-kV transmission line (from the Blythe 2 substation to the Eagle Mountain 1 substation) that traverses the alternative site would need to be realigned to roughly follow the site boundary. A new 0.125 mile transmission line (along Osborne Ave.) and substation would interconnect to the realigned SCE line at the northeast boundary of the site; a transmission upgrade and a system impact

study would likely be required. The boundaries and transmission realignment of this alternative site are shown below in **Alternatives Figure 3**.

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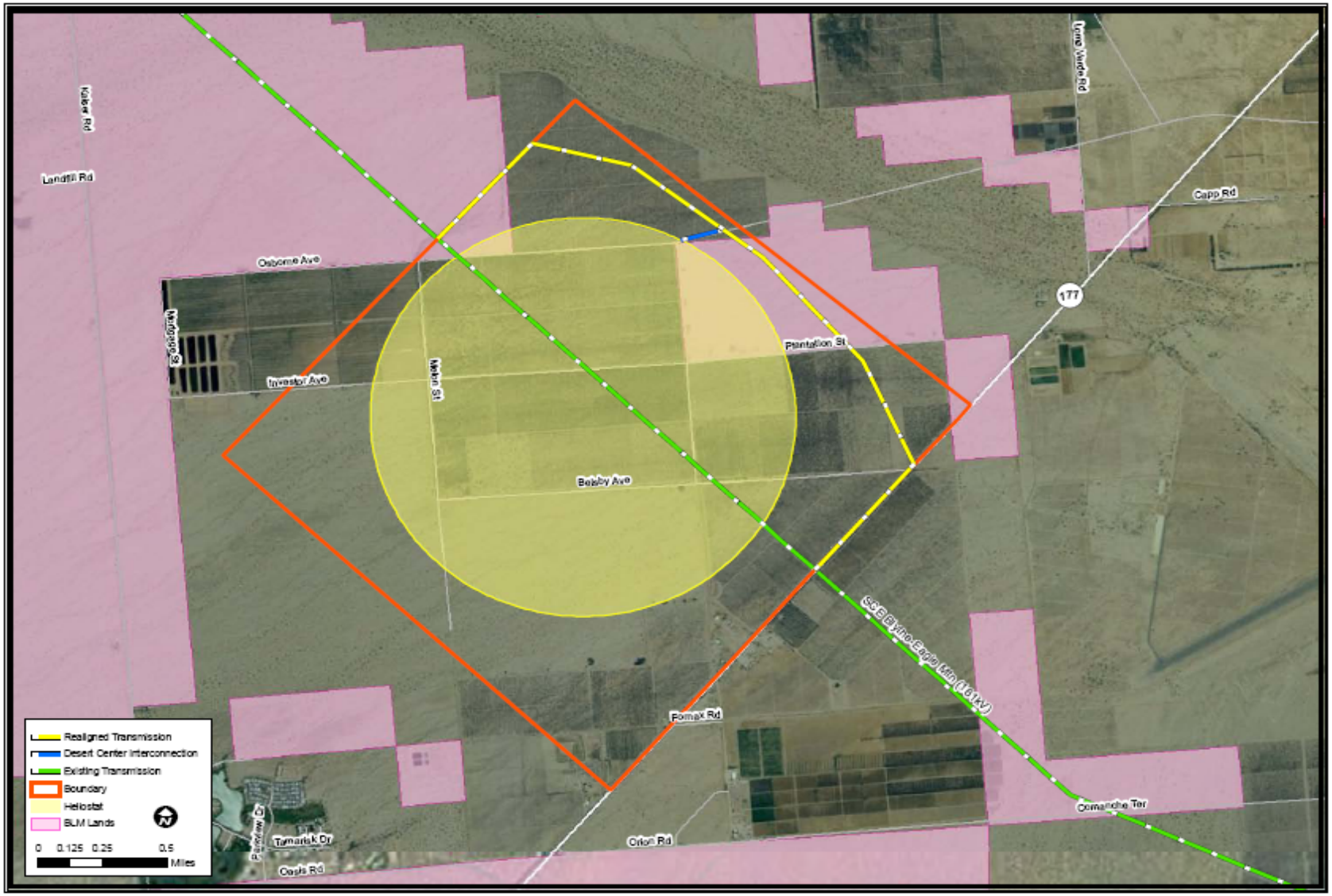
## PROJECT ALTERNATIVES - FIGURE 3
## NORTH OF DESERT CENTER ALTERNATIVE




ALTERNATIVES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: BLM, Aspen Environmental

Heliostats surrounding a 653 foot solar tower would occupy 1,410 acres of the site. Approximately 17,500 heliostats would be used. The heliostat field, power block parking areas, administration building, water treatment system, evaporation ponds, and 230-kV switchyard would all be contained within a 1,504- acre fenced project footprint.

Staff determined that this alternative would reduce impacts to cultural resources associated with the historic Rice Army Airfield. It would also reduce biological resource impacts and would avoid impacts to wildlife movement and alteration of ephemeral streams.. Notably, this would allow the project to contribute clean, renewable energy to help meet the State's energy goals, while minimizing impacts to the desert environment. (Ex. 200, pp. 4-13 - 4-14.)

Staff ultimately concluded, however, that impacts of this alternative – even with implementation of Staff-proposed conditions of certification – would have significant and unavoidable visual impacts. The number of residents adversely affected would be substantial, and viewers in the easternmost slopes of Joshua Tree National Park could be affected. This site could also result in a cumulatively significant impact to local roadway traffic levels of service. (Ex. 200, p. 4-10.)

To pursue this alternative, the Applicant would be required to submit new applications to the Energy Commission, Western and BLM, which would then be reviewed and subject to evaluation under a new environmental document. (Ex. 200, pp. 4-13 - 4-14.)

*State Route 62/Rice Valley Road Transmission Line Alternative*. This alternative transmission line route would interconnect to Western's 161-kV/230-kV Parker-Blythe #2 transmission line at the same location as the RSEP transmission line. This line would exit the power block directly to the east and follow a proposed access road within the heliostat field. The gen tie would then turn north inside the RSEP property boundary and run along the RSEP's circular perimeter road to the north and northwest. At the north end of the heliostat field, the route would traverse the construction laydown area, on previously disturbed land, over a distance of approximately 500 feet to the southern side of State Route 62 (SR 62). The route would follow SR 62 approximately 3.8 miles east to the junction of Rice Valley Road. It would then trend south to follow the unpaved Rice Valley Road for 4.1 miles to its juncture with the proposed new RSEP transmission line alignment and continue southeast for 5.4 miles along the proposed alignment to Western's Parker-Blythe #2 transmission line.

This alternative route is shown below in **Alternatives Figure 4**. (Ex. 200, p. 4-14.)

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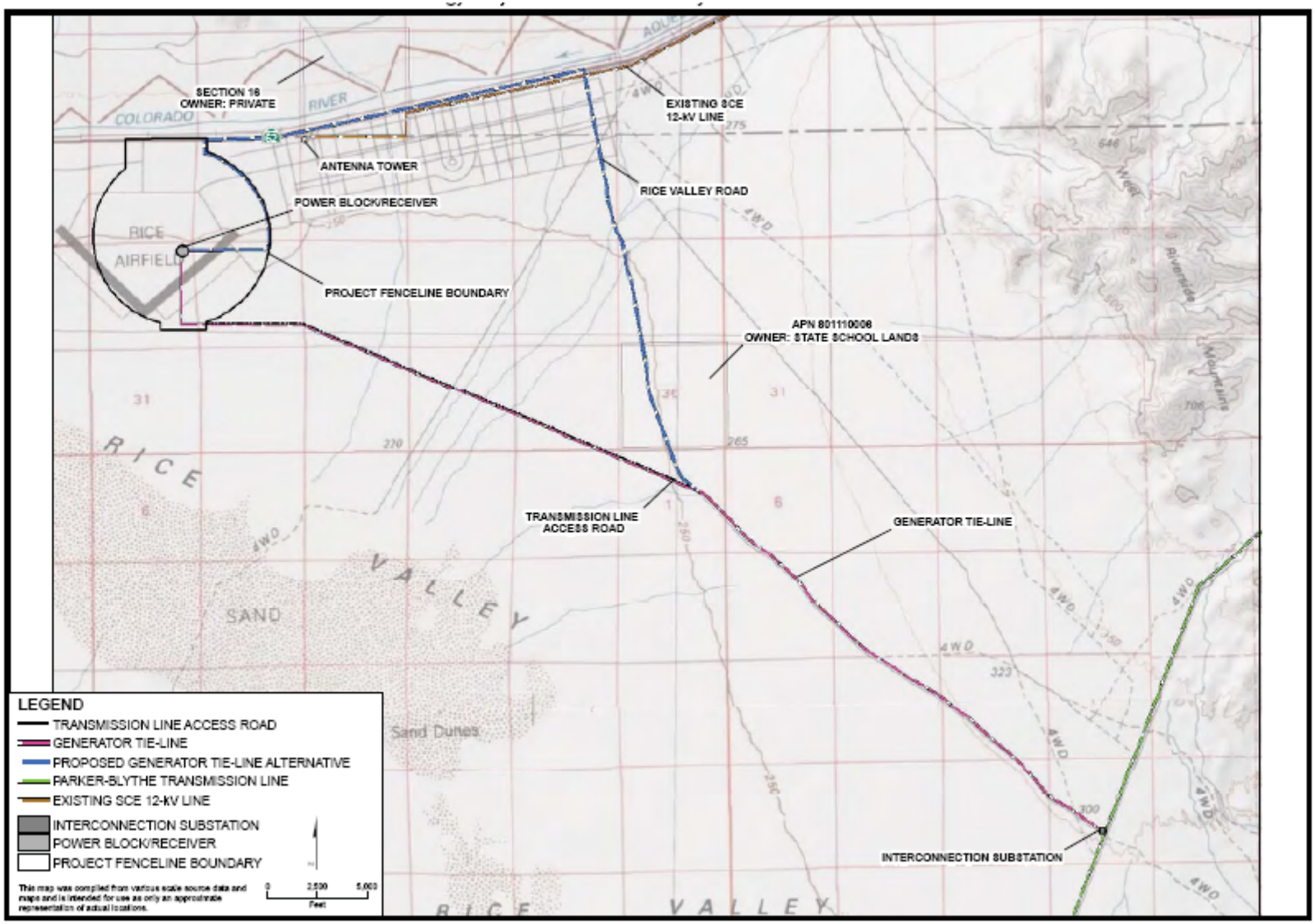
## PROJECT ALTERNATIVES - FIGURE 4
## RICE SOLAR ENERGY PROJECT – SR/62 RICE VALLEY ROAD TRANSMISSION LINE ALTERNATIVE




ALTERNATIVES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: CH2MHill 2010a

This route would avoid the loss of 13.4 acres of foraging and cover habitat for plan and animal species, including the desert tortoise. It would also avoid the creation of a new 4.6 mile vehicle access route between the proposed solar facility and the proposed junction of the new transmission line access road with the existing Rice Valley road. (*Id.)*

5. No Project/No Action Alternative

The No Project Alternative under CEQA defines the scenario that would exist if the proposed RSEP is not constructed. The CEQA Guidelines state that "the purpose of describing and analyzing a 'no project' alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (Cal. Code Regs., tit. 14 § 15126.6(i).) The No Project analysis in this RSA considers existing conditions and "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" [Cal. Code Regs, tit. 14 § 15126.6(e)(2).]

If the No Project Alternative is selected, the construction and operational impacts of the RSEP would not occur. There would be no grading of the site, no loss of resources or disturbance of desert habitat, and no installation of power generation and transmission equipment. The No Project Alternative would also eliminate contributions to cumulative impacts on a number of resources and environmental parameters in Riverside County and in the Colorado Desert as a whole. (Ex. 200, p. 4-14.)

In the absence of the RSEP, however, other power plants, both renewable and non-renewable, may have to be constructed to serve the demand for electricity and to meet RPS requirements. The impacts of these other facilities may be similar to those of the proposed project because these technologies require large amounts of land like that required for the RSEP. They may be located on desert habitat that has not been previously disturbed, and may be on public rather than privately owned land. The No Project/No Action Alternative may also lead to siting of other non-solar renewable technologies to help achieve the RPS requirements.

Additionally, if the No Project/No Action Alternative is chosen, additional gas-fired power plants may be built, or existing gas-fired plants may operate longer. If the proposed project were not built, California would not benefit from the reduction in greenhouse gases that this facility would provide, and California utilities would not receive the 150 MW contribution to its renewable state-mandated energy portfolio.

**NEPA Alternatives:** BLM is considering whether to approve a plan amendment and whether to approve the proposed project or an alternative. BLM's "action alternative" would be to amend the CDCA Plan to include RSEP and to approve the project, or one of the alternatives. The RSEP and ancillary facilities would be approved, a ROW grant issued, and the CDCA Plan amended to include the RSEP generation facilities and transmission line as an approved use under the Plan.

BLM could also take no action on the project but amend the CDCA plan to make the area available for future renewable development, take no action on the project and amend the CDCA plan to make the area unavailable for future renewable development, or take no action on the project application and on a land use plan amendment. (Ex. 200, p. 4-15.)

Western's alternatives are the "action alternative" to grant the interconnection request, and the "no action alternative" which for Western is to not grant the interconnection request.

6. Alternative Solar Generation Technologies

Staff evaluated several alternative solar thermal technologies, including Stirling dish technology, parabolic trough, linear Fresnel technology, and distributed solar technologies. The record contains a thorough analysis and discussion of these alternative technologies, which we briefly summarize here. (Ex. 200, pp. 4-29 – 4-37.)

While all of these technologies are considered potentially feasible and would meet most or all of the project objectives, none would eliminate significant impacts identified for the RSEP. Specifically, the Stirling engine system and solar power tower options would require larger surface areas than the proposed project, with associated greater impact potential. The linear Fresnel system has the potential to result in fewer impacts than the RSEP due to more compact configuration, although the technology is proprietary and not currently available to other developers. Based on these and other factors, the described alternative solar thermal technologies were eliminated from further consideration. (*Id*.)

7. Alternative Renewable Technologies

***Wind.*** Wind carries kinetic energy that can be used to spin the blades of a wind turbine rotor and an electrical generator, which then feed alternating current (AC) into the utility grid. Approximately 750 to 2,550 acres of land would be required for a 150 MW wind electricity power plant. While wind plants would not necessarily impact the same types of wildlife and vegetation as the proposed RSEP plant, the significant acreage necessary for a 150 MW wind plant would still cause significant habitat loss in addition to potentially significant impacts from habitat fragmentation and bird and bat mortality. Wind turbines are often over 400 feet high for two MW turbines. As such, any wind energy project would be highly visible, similar to the proposed RSEP.

Wind turbines can create adverse environmental impacts, as summarized below:

- Birds collide with wind turbines. Avian deaths, particularly raptors, are a substantial concern depending on raptor use of the area;

- Wind energy can negatively impact birds and other wildlife by fragmenting habitat, both through installation and operation of wind turbines themselves and through the roads and power lines that are required to support the turbines;

- Bats collide with wind turbines. The extent of bat mortality depends on turbine placement and bat flight patterns; and

- Visual impacts of wind turbines can be significant, and installation in scenic and high traffic areas can result in strong local opposition. Other impressions of wind turbines are that they are attractive and represent clean energy.

Further, approximately 750 to 2,550 acres of land would be required for a 150 MW wind electricity power plant. While wind plants would not necessarily impact the same types of wildlife and vegetation as the proposed RSEP plant, the substantial acreage necessary for a 150 MW wind plant would still cause significant habitat loss in addition to potentially significant impacts from habitat fragmentation and bird and bat mortality. Wind turbines are often over 400 feet high for 2-MW turbines. As such, any wind energy project would be highly visible, similar to the proposed RSEP.

While wind electricity generation is a viable and important renewable technology in California, it would not reduce the large-scale ground disturbance and visual

impacts associated with the RSEP. Additionally, it would not meet the project objective to construct a utility scale solar energy project. Furthermore, it is part of a renewable energy supply mix along with solar thermal, which will likely be needed to meet statewide RPS requirements. (Ex. 200, p. 4-39.)

***Biomass Energy***. Electricity can be generated by burning organic fuels in a boiler to produce steam, which then turns a turbine; this is biomass generation. Biomass can also be converted into a fuel gas such as methane and burned to generate power. Wood is the most commonly used biomass for power generation. Major biomass fuels include forestry and mill wastes, agricultural field crop and food processing wastes, and construction and urban wood wastes. Several techniques are used to convert these fuels to electricity, including direct combustion, gasification, and anaerobic fermentation. Biomass facilities do not require the extensive amount of land required by the other renewable energy sources discussed, but they generate much smaller amounts of electricity

Generally, small amounts of land are required for biomass power facilities; however, a biomass facility should be sited near a relatively large source of biomass to minimize the cost and truck emissions associated with bringing the biomass waste to the facility.

The emissions due to biomass fuel-fired power plant operation are generally unavoidable. Direct impacts of criteria pollutants could cause or contribute to a violation of the ambient air quality standards. Significant impacts can potentially occur for PM10 and ozone because emissions of particulate matter and precursors and ozone precursors could contribute to existing violations of the standards for those criteria pollutants. Biomass/biogas facility emissions could also adversely affect visibility and vegetation in Federal Class I areas or state wilderness areas as a result of significantly deteriorating air quality related values in the wilderness areas. Toxic air contaminants from routine operation would also cause health risks that could adversely affect sensitive receptors in the local area of the plant.

Most biomass facilities produce only small amounts of electricity (in the range of 3 to 10 MW) and could not meet the project objectives. Biomass facilities also generate significant air emissions and require numerous truck deliveries to supply the plants with the biomass waste materials. (Ex. 200, p. 4-40.)

*Geothermal Energy.* Geothermal technologies use steam or high-temperature water obtained from naturally occurring geothermal reservoirs to drive steam

turbine/generators. Geothermal plants provide highly reliable base load power, with capacity factors from 90 to 98 percent. However, they must be built near geothermal reservoir sites because steam and hot water cannot be transported long distances without substantial thermal energy loss.

Concerns regarding geothermal power plants include air quality, hazardous materials, and geology. Benefits from geothermal power plants include an increased reliability and less ground disturbance than some renewable resources, including solar.

Geothermal power projects require less ground disturbance than almost any other energy source, typically from about 0.2 to 0.5 acres per MW; however, geothermal plants must be built where the resource is since the steam cannot be piped long distances without significant heat loss. This results in a highly secure and predictable fuel supply (95 percent or higher availability), but inflexibility in siting. It may also result in a long interconnection requirement to reach a transmission system.

Because of the minimal ground disturbance required from the geothermal facilities themselves, impacts to biological resources and cultural resources would likely be minimized compared to the heliostat field for the RSEP. However, in that two to five geothermal facilities would be required for provision of 150 MW, depending on the locations of the new facilities, more transmission lines and switchyards with corresponding potential impacts (i.e., biological, cultural, soil & water, land use, visual) may be required for grid interconnection, when compared to the proposed RSEP. (Ex. 200, pp. 4-40 - 4-41.)

***Tidal Energy.*** The oldest technology to harness tidal power for the generation of electricity involves building a dam, known as a barrage, across a bay or estuary that has large differences in elevation between high and low tides. Water retained behind a dam at high tide generates a power head sufficient to generate electricity as the tide ebbs and water released from within the dam turns conventional turbines.

Tidal technologies, especially tidal fences, have the potential to cause significant biological impacts, especially to marine species and habitats. Fish could be caught in the unit's fins by the sudden drop in pressure near the unit. The passageways, more than 15 feet high and probably sitting on the bay floor, could squeeze out marine life that lives there or alter the tidal flow, sediment build-up, and the ecosystem in general. Even the in-flow turbines can have environmental impacts on marine systems.

In-flow tidal turbines are a relatively new technology and are not considered an alternative to the RSEP project because they are an unproven technology at the scale that would be required to replace the proposed project. Additionally, the environmental impacts of tidal turbines are still under review.

Tidal fence technology is a commercially available technology in Europe, although limited to areas that are adjacent to a body of water with a large difference between high and low tides, and it can result in significant environmental impacts to ocean ecosystems. In-flow tidal turbines are a relatively new technology and are not considered an alternative to the RSEP project because they are an unproven technology at the scale that would be required to replace the proposed project. Additionally, the potential for adverse impacts of tidal turbines is still under review. (Ex. 200, pp.4-42 - 4-43.)

***Wave Energy.*** Wave power technologies have been used for nearly 30 years. The environmental impacts of wave power have yet to be fully analyzed but a recent study published by the U.S. Department of Commerce and National Oceanic and Atmospheric Administration listed a number of potentially significant environmental impacts created by wave power:

- Significant reduction to waves with possible effects to beaches (e.g., changes to sediment transport processes);
- The use of buoys may have positive effects on forage fish species, which in turn could attract larger predators. Structures need to reduce potential entanglement of larger predators, especially marine turtle species;
- Modifications to water circulation and currents may result in changes to larval distribution and sediment transport;
- Wave energy development may affect community structures for fish and fisheries;
- Lighting and above-water structures may result in marine bird attraction and collisions and may alter food webs and beach processes;
- A diversity of concerns would arise regarding marine mammals including entanglement issues;
- Energy-absorbing structures may affect numerous receptors and should avoid sensitive habitats;
- Chemicals used in the process must be addressed both for spills and for a continuous release such as in fouling paints;
- New hard structures and lighting may break loose and increase debris accumulation;

- Impacts on fish and marine mammals caused by noise coming from the buoys should be understood and mitigated;
- Electromagnetic effects may affect feeding or orientation and should be better understood; and
- Impact thresholds need to be established. As projects scale up in location or implementation, new risks may become evident.

Wave technology is not considered an alternative to the RSEP project because is an unproven technology at the scale that would be required to replace the proposed project and because it may also result in substantial adverse environmental impacts. (Ex. 200, pp. 4-44 – 4-46.)

8. Alternative Methods of Generating or Conserving Electricity

Of the three nonrenewable generation alternatives (natural gas, coal, and nuclear), only natural gas-fired power plants would be viable alternatives within California. However, gas-fired plants would fail to meet a major project objective to construct and operate a renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities and would therefore not achieve the purpose and need of the project. Because these alternatives would not support renewable power generation within California, and could have significant environmental impacts of their own, they are not viable alternatives to the RSEP. (Ex. 200, p. 4-46.)

Staff's evaluation of each technology is presented in the record. (Ex. 200, pp. 4-46 – 4-50.)

***Natural Gas Generation*:** Natural gas power generation accounts for approximately 22 percent of all the energy used in the United States and comprises 40 percent of the power generated in California. A gas-fired power plant generating 150 MW would generally require about six acres of land. (Ex. 200, p. 4-46.)

Natural gas power plants may result in numerous environmental impacts; of greatest concern is emission of air pollutants and greenhouse gases. Although natural gas generation is clearly a viable technology, it is not a renewable technology, so it would not attain the objective of generating renewable power meeting California's renewable energy needs. (Ex. 200, p. 4-47.)

*Coal Generation.* Coal-fired electric generating plants are the cornerstone of America's electric power generation system. Traditional coal-fired plants generate large amounts of greenhouse gases. New clean coal technology includes a variety of energy processes that reduce air emissions and other pollutants from coal-burning power plants. The Clean Coal Power Initiative is providing government co-financing for new coal technologies that help utilities meet the Clear Skies Initiative to cut sulfur, nitrogen, and mercury pollutants by nearly 70 percent by 2018. The Clean Coal Power Initiative is now focusing on developing projects that use carbon sequestration technologies and/or beneficial reuse of carbon dioxide (DOE 2008). However, these technologies are not yet in use. (Ex. 200, p. 4-48.)

In 2006, California enacted SB 1368 which prohibits utilities from making long-term commitments for electricity generated from plants that create more carbon dioxide (CO2) than clean-burning natural gas plants.

Although coal generation is a viable technology, it is not a renewable technology, so it would not attain the objective of generating renewable power meeting California's renewable energy needs. (Ex. 200, p. 4-48.)

*Nuclear Energy*. California law currently prohibits the construction of any new nuclear power plants in California. New nuclear facilities may not currently be permitted in California, so this technology is infeasible at present. (Ex. 200, p. 4-49.)

*Conservation and Demand-Side Management*: Conservation and demand-side management consist of a variety of approaches to reduction of electricity use, including energy efficiency and conservation, building and appliance standards, and load management and fuel substitution. In 2005, the Energy Commission and CPUC's Energy Action Plan II declared cost effective energy efficiency as the resource of first choice for meeting California's energy needs. The Energy Commission noted that energy efficiency helped flatten the state's per capita electricity use and saved consumers more than $56 billion since 1978. (Ex. 200, p. 4-49.)

The CPUC, with support from the Governor's Office, the Energy Commission, and the California Air Resources Board, among others, adopted the California Long-Term Energy Efficiency Strategy Plan for 2009 to 2020 in September 2008. The plan is a framework for all sectors in California including industry, agriculture, large and small businesses, and households. Major goals of the plan include:

- All new residential construction will be zero net energy by 2020;
- All new commercial construction will be zero net energy by 2030;
- Heating, ventilation, and air conditioning industries will be re-shaped to deliver maximum performance systems; and
- Eligible low-income customers will be able to participate in the Low Income Energy Efficiency program and will be provided with cost-effective energy efficiency measures in their residences by 2020.

However, with population growth and increasing demand for energy, conservation and demand-management alone is not sufficient to address all of California's energy needs and will not itself provide the renewable energy required to meet the California renewable energy goals. (Ex. 200, p. 4-50.)

## FINDINGS OF FACT

Based on the evidence, including that presented on each subject area described in other portions of this Decision, we find and conclude as follows:

1. The record contains an adequate review and analysis of a reasonable range of site location and generation alternatives to the project as proposed.

2. None of the identified alternatives are superior to the proposed RSEP in terms of feasibly meeting the project objectives and reducing significant potential environmental impacts under CEQA or NEPA.

3. The alternative technologies analyzed by Staff and referenced in this decision could not achieve all of the project objectives,

4. Other generation technologies (wind, geothermal, biomass, tidal, wave, natural gas, and nuclear) were also examined as possible alternatives to the proposed project. These technologies would either be infeasible at the scale of the proposed project, or would not eliminate substantial adverse impacts caused by the proposed project without creating their own substantial adverse impacts in other locations.

5. Conservation and demand side management programs would likely not meet the state's growing electricity needs that could be served by the proposed project. In addition, these programs would not provide the renewable energy required to meet the California Renewable Portfolio Standard (RPS) requirements.

6. Meeting the state's obligations to develop renewable energy will require contributions from all of the commercially available renewable technologies analyzed by Staff, such that these technologies are best viewed as complementary strategies rather than as competing alternatives.

7. The evidence contains an adequate review and analysis of alternative generation technology.

8. The evidence contains an adequate review and analysis of the “No Project/No Action” alternative.

9. The “No Project/No Action” alternative is not a reasonable alternative or feasible alternative to the RSEP.

## CONCLUSIONS OF LAW

1. The record contains a sufficient analysis of Alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and the National Environmental Policy Act.

2. The evidentiary record contains an adequate review of alternative generation technology, including that of rooftop photovoltaic distributed generation.

3. The record contains an acceptable analysis of a reasonable range of site location and generation alternatives to the project as proposed.

# III. COMPLIANCE AND CLOSURE

Public Resources Code section 25532 requires the Commission to establish a post-certification monitoring system. The purpose of this requirement is to assure that certified facilities are constructed and operated in compliance with applicable laws, ordinances, regulations, standards, as well as the specific Conditions of Certification adopted as part of this Decision. The Public Resources Code section 25806(d), states that renewable energy projects are exempt from paying an annual compliance fee.

## SUMMARY OF THE EVIDENCE

The record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the Rice Solar Energy Project is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the Project Owner and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.

Compliance with the Conditions of Certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Plan also contains requirements governing the planned closure, as well as the unexpected temporary and unexpected permanent closure, of the Project.

The Compliance Plan is composed of two broad elements. The first element establishes the "General Conditions," which:

- set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- set forth procedures for settling disputes and making post-certification changes;
- set forth the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed Conditions; and

- establish requirements for facility closure plans; and specify Conditions of Certification for each technical area containing the measures required to mitigate any and all potential adverse project impacts associated with construction, operation and closure below a level of significance. Each specific Condition of Certification also includes a verification provision that describes the method of assuring that the Condition has been satisfied.

In addition to meeting the Energy Commission's Conditions of Certification, the project owner will be required to comply with all terms and conditions required by the Bureau of Land Management (BLM), as will be described in the BLM's Record of Decision and Right-of-Way Grant documents for this project. The project owner will also be required to comply with all terms and conditions required by Western Area Power Administration in Western's Record of Decision including the requirements of the Biological Opinion in accordance with Section 7 of The Endangered Species Act and the Memorandum of Agreement in accordance with Section 106 of the Historic Preservation Act.

The second general element of the Plan contains the specific "Conditions of Certification." These are found following the summary and discussion of each individual topic area in this Decision. The individual Conditions contain the measures required to mitigate potentially adverse Project impacts associated with construction, operation, and closure to levels of insignificance. Each Condition also includes a verification provision describing the method of assuring that the Condition has been satisfied.

The contents of the Compliance Plan are intended to be implemented in conjunction with any additional requirements contained in the individual Conditions of Certification.

## FINDINGS OF FACT

The record establishes:

1. Requirements contained in the Compliance Plan and in the specific Conditions of Certification are intended to be implemented in conjunction with one another.

2. We adopt the following Compliance Plan as part of this Decision.

## CONCLUSION OF LAW

1. The compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Rice Solar Energy Project will be designed, constructed, operated, and closed in conformity with applicable law.

# GENERAL CONDITIONS OF CERTIFICATION

## DEFINITIONS

The following terms and definitions are used to establish when Conditions of Certification are implemented.

### PRE-CONSTRUCTION SITE MOBILIZATION

Site mobilization is limited preconstruction activities at the site to allow for the installation of fencing, construction trailers, construction trailer utilities, and construction trailer parking at the site. Limited ground disturbance, grading, and trenching associated with the above mentioned pre-construction activities is considered part of site mobilization. Walking, driving or parking a passenger vehicle, pickup truck and/or light vehicles is allowable during site mobilization.

### CONSTRUCTION

On-site work to install permanent equipment or structures for any facility.

#### Ground Disturbance

Construction-related ground disturbance refers to activities that result in the removal of top soil or vegetation at the site beyond site mobilization needs, and for access roads and linear facilities.

#### Grading, Boring, and Trenching

Construction-related grading, boring, and trenching refers to activities that result in subsurface soil work at the site and for access roads and linear facilities, e.g., alteration of the topographical features such as leveling, removal of hills or high spots, moving of soil from one area to another, and removal of soil.

Notwithstanding the definitions of ground disturbance, grading, boring, and trenching above, construction does **not** include the following:

1. the installation of environmental monitoring equipment;
2. a soil or geological investigation;
3. a topographical survey;
4. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; and
5. any work to provide access to the site for any of the purposes specified in 1, 2, 3, or 4 above.

## START OF COMMERCIAL OPERATION

For compliance monitoring purposes, “commercial operation” begins after the completion of start-up and commissioning, when the power plant has reached reliable steady-state production of electricity at the rated capacity. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

## COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

The **Compliance Project Manager** (CPM) shall oversee the compliance monitoring and is responsible for:

1. Ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;

2. Resolving complaints;

3. Processing post-certification changes to the conditions of certification, project description (petition to amend), and ownership or operational control (petition for change of ownership) (See instructions for filing petitions);

4. Documenting and tracking compliance filings; and

5. Ensuring that compliance files are maintained and accessible.

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies including the Energy Commission, and any Staff when handling disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate Commission staff and management. All submittals must include searchable electronic versions (pdf or MS Word files). The CPM may accept and approve, on a case by case basis, compliance submittals that provide sufficient detail to allow construction activities to commence without the submittal containing detailed information on construction activities that will be commenced later in time.

## PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings is to assemble both the Commission’s and project owner’s technical staff to review the status of all pre-construction or pre-operation requirements contained in the Commission’s Conditions of Certification. This is to confirm that all applicable Conditions of Certification have

been met, or if they have not been met, to ensure that the proper action is taken. In addition, these meetings ensure, to the extent possible, that Energy Commission Conditions will not delay the construction and operation of the plant due to oversight and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

## ENERGY COMMISSION RECORD

The Energy Commission shall maintain the following documents and information as a public record, in either the Compliance file or Dockets file, for the life of the project (or other period as required):

1. All documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;

2. All monthly and annual compliance reports filed by the project owner;

3. All complaints of noncompliance filed with the Energy Commission; and

4. All petitions for project or condition of certification changes and the resulting staff or Energy Commission action.

## PROJECT OWNER RESPONSIBILITIES

The project owner is responsible for ensuring that the compliance conditions of certification and all other conditions of certification that appear in the Commission Decision are satisfied. The compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, conditions of certification, or ownership. Failure to comply with any of the conditions of certification or the compliance conditions may result in reopening of the case and revocation of Energy Commission certification; an administrative fine; or other action as appropriate. A summary of the Compliance Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section.

## COMPLIANCE CONDITIONS OF CERTIFICATION

### Unrestricted Access (COMPLIANCE-1)

The CPM, responsible Energy Commission staff, and delegated agencies or consultants shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on-site for the purpose of conducting audits, surveys, inspections, or general site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time.

## Compliance Record (COMPLIANCE-2)

The project owner shall maintain project files on-site or at an alternative site approved by the CPM for the life of the project, unless a lesser period of time is specified by the conditions of certification. The files shall contain copies of all "as-built" drawings, documents submitted as verification for conditions, and other project-related documents.

Energy Commission staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition.

## Compliance Verification Submittals (COMPLIANCE-3)

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM.

Verification of compliance with the conditions of certification can be accomplished by the following:

1. Monthly and/or annual compliance reports, filed by the project owner or authorized agent, reporting on work done and providing pertinent documentation, as required by the specific conditions of certification;

2. Appropriate letters from delegate agencies verifying compliance;

3. Energy Commission staff audits of project records; and/or

4. Energy Commission staff inspections of work, or other evidence that the requirements are satisfied.

Verification lead times associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. **The cover letter subject line shall identify the project by AFC number, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal**. The project owner shall also identify those submittals **not** required by a condition of certification with a statement such as: "This submittal is for information only and is not required by a specific condition of certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and Energy Commission submittal number.

The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner.

All hardcopy submittals shall be addressed as follows:

**Chris Davis, Compliance Project Manager**
**(09-AFC-10C)**
**California Energy Commission**
**1516 Ninth Street (MS-2000)**
**Sacramento, CA 95814**

Those submittals shall be accompanied by a searchable electronic copy, on a CD or by e-mail, as agreed upon by the CPM.

If the project owner desires Energy Commission staff action by a specific date, that request shall be made in the submittal cover letter and shall include a detailed explanation of the effects on the project if that date is not met.

**Pre-Construction Matrix and Tasks Prior to Start of Construction (COMPLIANCE-4)**

Prior to commencing construction, a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix will be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first. It will be submitted in the same format as the compliance matrix described below.

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times for submittal of compliance verification documents to the CPM for conditions of certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

Failure to submit compliance documents within the specified lead-time may result in delays in authorization to commence various stages of project development.

If the project owner anticipates commencing project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. Compliance submittals should be completed in advance where the necessary lead time for a required compliance event extends beyond the date anticipated for start of construction. The project owner must understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change, based upon the Commission Decision.

## Compliance Reporting

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the Energy Commission Decision. During construction, the project owner or authorized agent will submit Monthly Compliance Reports. During operation, an Annual Compliance Report must be submitted. These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the conditions of certification require that compliance submittals be submitted to the CPM in the monthly or annual compliance reports.

### Posting A Surety Bond (COMPLIANCE-5)

Prior to site disturbance and each increment of construction, the project owner shall post a surety bond adequate to cover the cost of decommissioning and restoration, including the removal of the project features that have been constructed for that portion of the site and restoring the native topography and vegetation. An “increment of construction” shall mean a significant feature of construction, such as site grading, a building, a fluid storage tank, a water treatment facility, a hydrogen production facility, a switchyard, or a group of solar collectors connected to an electrical transformer (including that transformer). This Surety bond will apply to only site disturbance features located on public lands managed by BLM.

The project owner shall provide the surety bond to the BLM AO for approval and to the CPM for review with written evidence indicating that the surety bond is adequate to cover the cost of decommissioning and removing the project features constructed, allowing for site restoration. The written evidence shall include a valid estimate showing that the amount of the bond is adequate to accomplish such work. The timing for the submittal of the surety bond and approval of this document shall be coordinated with the BLM AO and CPM. Over the life of the project, the surety bond will be updated as necessary to account for any changes to the project description and/or decommissioning costs.

### Compliance Matrix (COMPLIANCE-6)

A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of all conditions of certification in a spreadsheet format. The compliance matrix must identify:

1. the technical area;
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;

4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);

5. the expected or actual submittal date;

6. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;

7. the compliance status of each condition, e.g., “not started,” “in progress” or “completed” (include the date); and

8. if the condition was amended, the date of the amendment.

Satisfied conditions shall be placed at the end of the matrix.

**Monthly Compliance Report (COMPLIANCE-7)**

The first Monthly Compliance Report is due one month following the Energy Commission business meeting date upon which the project was approved, unless otherwise agreed to by the CPM. The first Monthly Compliance Report shall include the AFC number and an initial list of dates for each of the events identified on the **Key Events List** form, found at the end of this section of the Decision.

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and an electronic searchable version of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:

1. A summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;

2. Documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, as well as the conditions they satisfy and submitted as attachments to the Monthly Compliance Report;

3. An initial, and thereafter updated, compliance matrix showing the status of all conditions of certification;

4. A list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;

5. A list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;

6. A cumulative listing of any approved changes to conditions of certification;

7. A listing of any filings submitted to, or permits issued by, other governmental agencies during the month;

8. A projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;

9. A listing of the month's additions to the on-site compliance file; and

10. A listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolution of the resolved actions, and the status of any unresolved actions.

All sections, exhibits, or addendums shall be separated by tabbed dividers or as acceptable by the CPM.

**Annual Compliance Report (COMPLIANCE-8)**

After construction is complete, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. Annual Compliance Reports shall be submitted over the life of the project, unless otherwise specified by the CPM. Each Annual Compliance Report shall include the AFC number, identify the reporting period, and shall contain the following:

1. An updated compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);

2. A summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

3. Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, with the condition it satisfies, and submitted as attachments to the Annual Compliance Report;

4. A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;

5. An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;

6. A listing of filings submitted to, or permits issued by, other governmental agencies during the year;

7. A projection of project compliance activities scheduled during the next year;

8. A listing of the year's additions to the on-site compliance file;

9. An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date (see Compliance Conditions for Facility Closure ); and

10. A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

**Confidential Information (COMPLIANCE-9)**

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Executive Director with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information that is determined to be confidential shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501, et. seq.

**Annual Energy Facility Compliance Fee (COMPLIANCE-10)**

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual compliance fee, which is adjusted annually. Current Compliance fee information is available on the Energy Commission's website ***http://www.energy.ca.gov/siting/filing_fees.html***. Contact the CPM for the current fee information. The initial payment is due on the date of the Business Meeting at which the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to:

**California Energy Commission**
**Accounting Office, MS-02**
**1516 9th Street**
**Sacramento, CA 95814**

**Reporting of Complaints, Notices, and Citations (COMPLIANCE-11)**

Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints, or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with a date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:
***http://www.energy.ca.gov/sitingcases/power_plants_contacts.html***

Any changes to the telephone number shall be submitted immediately to the CPM, who will update the web page.

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **NOISE** Conditions of Certification section of this Decision. All other complaints shall be recorded on the **Complaint** form found at the end of this section of the Decision.

## FACILITY CLOSURE

At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made that provide the flexibility to deal with the specific situation and project setting that exist at the time of closure. Laws, Ordinances, Regulations, and Standards (LORS) pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure.

There are at least three circumstances in which a facility closure can take place: planned closure, unplanned temporary closure, and unplanned permanent closure**.**

### CLOSURE DEFINITIONS

#### Planned Closure

A planned closure occurs when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence.

#### Unplanned Temporary Closure

An unplanned temporary closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency.

#### Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan. It can also

include unplanned closure where the project owner fails to implement the contingency plan, and the project is essentially abandoned.

## COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

### Planned Closure (COMPLIANCE-12)

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed Facility Closure Plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to the commencement of closure activities. The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed Facility Closure Plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;

2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;

3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and

4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

Prior to submittal of the proposed facility closure plan, a meeting shall be held between the project owner and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.

In the event that there are significant issues associated with the proposed facility closure plan's approval, or if the desires of local officials or interested parties are inconsistent with the plan, the CPM shall hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until the Energy Commission approves the Facility Closure Plan.

## Unplanned Temporary Closure/On-Site Contingency Plan

## (COMPLIANCE-13)

In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less than 60 days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facility and shall be kept at the site at all times.

The project owner, in consultation with the CPM, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific conditions of certification for the technical areas of Hazardous Materials Management and Waste Management.)

In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

In the event of an unplanned temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the circumstances and expected duration of the closure.

If the CPM determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than 12 months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CPM within 90 days of the CPM's determination (or other period of time agreed to by the CPM).

**Unplanned Permanent Closure/On-Site Contingency Plan**

**(COMPLIANCE-14)**

The on-site contingency plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.

In addition, the on-site contingency plan shall address how the project owner will ensure that all required closure steps will be successfully undertaken in the event of abandonment.

In the event of an unplanned permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the status of all closure activities.

A closure plan, consistent with the requirements for a planned closure, shall be developed and submitted to the CPM within 90 days of the permanent closure or another period of time agreed to by the CPM.

**Post Certification Changes to the Energy Commission Decision: Amendments, Ownership Changes, Staff Approved Project Modifications and Verification Changes (COMPLIANCE-15)**

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. **It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.** Implementation of a project modification without first securing Energy Commission, or Energy Commission staff, approval may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **staff approved project modifications** as specified below. Both shall be filed as a “Petition to Amend.” Staff will determine if the change is significant or insignificant. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission’s Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of approval and the process that applies are explained below. They reflect the provisions of Section 1769 at the time this condition was drafted. If the Commission’s rules regarding amendments are amended, the rules in effect at the time an amendment is requested shall apply.

### Amendment

The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, Section 1769(a), when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a condition of certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations or standards the petition will be processed as a formal amendment to the final decision, which requires public notice and review of the Energy Commission staff analysis and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(a). Upon request, the CPM will provide a sample petition to use as a template.

### Change of Ownership

Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769 (b). This process requires public notice and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(b). Upon request, the CPM will provide a sample petition to use as a template.

### Staff Approved Project Modification

Modifications that do not result in deletions or changes to conditions of certification, that are compliant with laws, ordinances, regulations, and standards and will not have significant environmental impacts may be authorized by the CPM as a staff approved project modification pursuant to section 1769 (a) (2). Once staff files an intention to approve the proposed project modifications, any person may file an objection to staff's determination within 14 days of service on the grounds that the modification does not meet the criteria of section 1769 (a) (2). If a person objects to staff's determination, the petition must be processed as a formal amendment to the decision and must be approved by the full commission at a noticed business meeting or hearing.

### Verification Change

A verification may be modified by the CPM without requesting an amendment to the decision if the change does not conflict with the conditions of certification and provides an effective alternate means of verification.

## CBO DELEGATION AND AGENCY COOPERATION

In performing construction and operation monitoring of the project, Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Energy Commission staff may delegate CBO responsibility to either an independent third party contractor or the local building official. Energy Commission staff retains CBO authority when selecting a delegate CBO,

including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

Energy Commission staff may also seek the cooperation of state, regional, and local agencies that have an interest in environmental protection when conducting project monitoring.

## ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision. The specific action and amount of any fines the Energy Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

## NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1237, but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by future law or regulations.

### Informal Dispute Resolution Process

The following procedure is designed to informally resolve disputes concerning the interpretation of compliance with the requirements of this compliance plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate an informal dispute resolution process. Disputes may pertain to actions or decisions made by any party, including the Energy Commission's delegate agents.

This process may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1237, but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and conditions of certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The process encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be brought before the full Energy Commission for consideration via the complaint and investigation procedure.

**Request for Informal Investigation**

Any individual, group, or agency may request the Energy Commission to conduct an informal investigation of alleged noncompliance with the Energy Commission's terms and conditions of certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for an informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter. Within seven working days of the CPM's request, provide a written report to the CPM of the results of the investigation, including corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to also provide an initial verbal report, within 48 hours.

**Request for Informal Meeting**

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or corrective measures proposed or undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;

2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;

3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner;

4. After the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any understandings reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and

requirements provided under Title 20, California Code of Regulations, section 1230, et. seq.

**Formal Dispute Resolution Procedure-Complaints and Investigations**

Any person may file a complaint with the Energy Commission's Dockets Unit alleging noncompliance with a Commission decision adopted pursuant to Public Resources Code section 25500. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1237.

**COMPLIANCE TABLE 1**
**SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION**

**KEY EVENTS LIST**

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

| EVENT DESCRIPTION | DATE |
|---|---|
| Certification Date | |
| Obtain Site Control | |
| Online Date | |
| **POWER PLANT SITE ACTIVITIES** | |
| Start Site Mobilization | |
| Start Ground Disturbance | |
| Start Grading | |
| Start Construction | |
| Begin Pouring Major Foundation Concrete | |
| Begin Installation of Major Equipment | |
| Completion of Installation of Major Equipment | |
| First Roll of Steam Turbine | |
| Obtain Building Occupation Permit | |
| Start Commercial Operation | |
| Complete All Construction | |
| **TRANSMISSION LINE ACTIVITIES** | |
| Start T/L Construction | |
| Synchronization with Grid and Interconnection | |
| Complete T/L Construction | |
| **FUEL SUPPLY LINE ACTIVITIES** | |
| Start Gas Pipeline Construction and Interconnection | |
| Complete Gas Pipeline Construction | |
| **WATER SUPPLY LINE ACTIVITIES** | |
| Start Water Supply Line Construction | |
| Complete Water Supply Line Construction | |

| CONDITION NUMBER | SUBJECT | DESCRIPTION |
|---|---|---|
| **COMPLIANCE-1** | Unrestricted Access | The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site. |
| **COMPLIANCE-2** | Compliance Record | The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files. |
| **COMPLIANCE-3** | Compliance Verification Submittals | The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed or the project owner or his agent. |
| **COMPLIANCE-4** | Pre-construction Matrix and Tasks Prior to Start of Construction | Construction shall not commence until the all of the following activities/submittals have been completed:<br>• property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns,<br>• a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction,<br>• all pre-construction conditions have been complied with,<br>• the CPM has issued a letter to the project owner authorizing construction. |
| **COMPLIANCE-5** | Surety Bond | Prior to site disturbance and each increment of construction, the project owner shall post a surety bond adequate to cover the cost of decommissioning and restoration and provide the surety bond to the BLM AO for approval. |
| **COMPLIANCE-6** | Compliance Matrix | The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance conditions of certification. |
| **COMPLIANCE-7** | Monthly Compliance Report including a Key Events List | During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Energy Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List. |

**COMPLIANCE TABLE 1**
**SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION**

| CONDITION NUMBER | SUBJECT | DESCRIPTION |
|---|---|---|
| **COMPLIANCE-8** | Annual Compliance Reports | After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. |
| **COMPLIANCE-9** | Confidential Information | Any information the project owner deems confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality. |
| **COMPLIANCE-10** | Annual fees | Payment of Annual Energy Facility Compliance Fee |
| **COMPLIANCE-11** | Reporting of Complaints, Notices and Citations | Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations. |
| **COMPLIANCE-12** | Planned Facility Closure | The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure. |
| **COMPLIANCE-13** | Unplanned Temporary Facility Closure | To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation. |
| **COMPLIANCE-14** | Unplanned Permanent Facility Closure | To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation. |
| **COMPLIANCE-15** | Post-certification changes to the Decision | The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility. |

**RICE SOLAR ENERGY PROJECT, Docket No. 09-AFC-10**

**COMPLAINT LOG NUMBER**:_____**COMPLAINANT INFORMATION**

NAME:_____ PHONE NUMBER:_____

ADDRESS:_____

## COMPLAINT

DATE COMPLAINT RECEIVED:_____ TIME COMPLAINT RECEIVED:_____

COMPLAINT RECEIVED BY: ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE:_____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION):_____

_____

_____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:_____

_____

_____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS:_____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:_____

_____

_____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN:_____

_____

## CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED:_____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

OTHER RELEVANT INFORMATION:_____

_____

This information is certified to be correct.

PLANT MANAGER SIGNATURE:_____ DATE: _____

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING DOCUMENTATION, AS REQUIRED)

# IV. ENGINEERING ASSESSMENT

The broad engineering assessment of the Rice Solar Energy Project consists of separate analyses that examine its facility design, engineering, efficiency, and reliability aspects. These analyses include the on-site power generating equipment and the project-related linear facilities.

## A. FACILITY DESIGN

This review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to project design and construction. It addresses consistency with applicable LORS, but does not extend to the project's environmental impacts under the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA). (Ex. 200, pp. 7.1-5, 7.1-6, 7.1-7.) The evidentiary presentations were uncontested. (10/29/2010 RT 13:17-25; Ex. 200, pp. 7.1-1 – 7.1-22.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The Application for Certification (AFC) describes the preliminary facility design. In considering the adequacy of the plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes, as appropriate, the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety or the operational reliability of the project. (Ex. 200, p. 7.1-1.)

Staff considered potential geological hazards and reviewed the preliminary project design with respect to grading, flood protection, erosion control, site drainage, and site access in addition to the criteria for designing and constructing related linear facilities such as the transmission interconnection facilities. (Ex. 200, p. 7.1-3; see also, the **Geology and Paleontology** section of this Decision.) The evidence establishes that the project will incorporate accepted industry standards. This includes design practices and construction methods for preparing and developing the site. (*Id.*) Conditions **CIVIL-1** through **CIVIL-4** ensure that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include project components necessary for power production, those costly or time consuming to repair or replace, facilities used for storage of hazardous or toxic materials, and those capable of becoming potential health and safety hazards if not constructed properly. Major structures also include enclosures, tanks, pipes, water lines, and septic systems. (Ex. 200, p. 7.1-3.) These components are referred to in Condition **GEN-2**. The master drawing and master specifications list described in **GEN-2** refer to documents based on the project's *detailed* design and may include supplemental materials for structures and equipment not currently identified as part of the project's preliminary design.

The Conditions of Certification establish a design review and construction inspection process to verify compliance with applicable standards and special requirements. (Ex. 200, p. 7.1-4.) The project will be designed and constructed in conformance with the latest edition of the California Building Standards Code (currently the 2007 CBSC) and other applicable codes and standards in effect at the time design approval and construction actually begin. (Ex. 200, p. 7.1-3.) Condition of Certification **GEN-1** incorporates this requirement. Conditions **GEN-3** through **GEN-8** require that qualified individuals oversee and inspect facility construction. (Ex. 200, p. 7.1-4.) Similarly, Conditions **MECH-1** through **MECH-3** address compliance of the project's mechanical systems with appropriate standards, and a quality assurance/quality control program assures that the project will be designed, procured, fabricated, and installed as described. (Ex. 200, pp. 7.1-3 – 7.1-4.) Condition **ELEC-1** mandates that design and construction of major electrical features comply with applicable LORS.

The project is located in an area of low seismic activity. (Ex. 200, p. 7.1-2.) The 2007 CBSC requires specific "dynamic" lateral force procedures for certain structures to determine their seismic design criteria; others may be designed using a "static" analysis procedure. To ensure that project structures are analyzed appropriately, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the Chief Building Official[1] (CBO) for review and approval prior to the start of construction. (Ex. 200, p. 7.1-3.)

[1] The Energy Commission is the CBO for facilities we certify. We may delegate CBO authority to local building officials and/or independent consultants to carry out design review and construction inspections. When CBO duties are delegated, we require a Memorandum of Understanding with the delegate entity to outline respective roles, responsibilities, and qualifications of involved individuals such as those described in Conditions of Certification **GEN-1** through **GEN-8**. The Conditions further require that every appropriate element of project construction be first approved by the CBO and that qualified personnel perform or oversee inspections. (Ex. 200, p. 7.1-4.)

The evidentiary record also mentions project closure. The general closure provisions of the Compliance Monitoring and Closure Plan describe related requirements. (Ex. 200, p. 7.1-22.) (See the **Compliance and Closure** section of this Decision.)

Overall, the evidentiary record establishes that the Conditions of Certification create a design review and construction inspection process which verifies compliance with applicable standards and special requirements. (*Id*.) We therefore conclude that the project will be designed and constructed in compliance with all applicable LORS, and that these activities will not negatively impact public health and safety.

## FINDINGS OF FACT

Based on the evidence of record, the Commission makes the following findings:

1. The Rice Solar Energy Project is currently in the preliminary design stage.
2. The evidence summarized in this topic area addresses consistency with applicable LORS, and does not extend to an evaluation of the project's environmental impacts.
3. The facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision.
4. The Conditions of Certification set forth below provide, in part, that qualified personnel will perform design review, plan checking, and field inspections of the project.
5. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed in accordance with applicable law and in a manner that protects public health and safety.
6. The **General Conditions,** included in the **Compliance and Closure** section of this Decision, establish requirements to be followed in the event of facility closure.

## CONCLUSION OF LAW

1. We therefore conclude that implementation of the Conditions of Certification listed below ensure that the Rice Solar Energy Project will be designed and constructed in conformance with the applicable LORS pertinent to the engineering aspects summarized in this section of the Decision.

## CONDITIONS OF CERTIFICATION

**GEN-1** The project owner shall design, construct, and inspect the project in accordance with the 2007 (or the latest edition in effect when initial project engineering designs are submitted for review) California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval. The CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously. The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All transmission facilities (lines, switchyards, switching stations, and substations) are covered in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBSC is in effect, the 2007 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

- The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

- The project owner shall submit plans, calculations, and other related documents that have been specifically developed for the RSEP project to the CPM and the CBO.

**Verification:** Five days prior to requesting the issuance of the certificate of occupancy, the project owner shall submit to the CPM and the CBO a statement of verification, signed by the responsible design engineer, attesting that all design, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of

facility design. The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.

Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to performing any construction, addition, alteration, moving, demolition, repair, or maintenance on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

**GEN-2** Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, master drawings, and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the planned date of each submittal to the CBO. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request. In addition to the design submittals referenced above, plans and calculations for all construction work shall be submitted to the CBO for approval.

**Verification:** At least 60 days (or a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawings, and master specifications list for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures and equipment may be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

**GEN-3** The project owner shall make payments to the CBO for design review, plan checks, and construction inspections based upon a reasonable fee schedule negotiated between the project owner and the CBO. These fees may be based on hourly rates or the valuation of the facilities reviewed, or may be otherwise agreed upon by the project owner and the CBO. A copy of the contract between the owner and the CBO shall be submitted to the CPM for review and approval by Staff.

**Verification:** The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been

paid. The CBO shall inform the CPM if the project owner has not met its obligations as specified in the agreement between the project owner and the CBO for payments related to CBO services.

**GEN-4** Prior to the start of rough grading, the project owner shall assign a California- registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The RE shall be aware of construction activities at the project site at all times. However, he/she is not required to be physically present at the job site as long as the construction work is being performed as delegated below. The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical, plumbing, and electrical portions of the project, respectively. A registered civil engineer may be delegated responsibility for civil engineering aspects of the project such as grading, storm water pollution prevention practices (SWPPP), storm water management practices (SWMP), drainage, erosion, sedimentation control programs (DESCP), and similar aspects of civil engineering. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE or his/her delegate shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;

2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;

3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the Conditions of the project;

4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;

5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and

6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to CBO-approved plans and specifications.

The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approvals.

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

**GEN-5** Prior to the start of rough grading, the project owner shall assign at least one of each of the following California-registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California-registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California-registered electrical engineer.

The project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading; site preparation; excavation; compaction; and construction of secondary containment, foundations, erosion, and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems;

3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures;

4. Review, implement, and monitor storm water pollution prevention practices (SWPPP);

5. Review, implement, and monitor storm water management practices (SWMP);

6. Review, implement, and monitor drainage, erosion, sedimentation control programs (DESCP); and

7. Review, implement, and monitor all other civil engineering (earthwork) aspects of the project.

B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

1. Review all the engineering geology reports;

2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load;

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and

4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and

2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;

2. Provide consultation to the RE during design and construction of the project;

3. Monitor construction progress to ensure compliance with engineering LORS;

4. Evaluate and recommend necessary changes in design; and

5. Prepare and sign all major building plans, specifications, and calculations.

E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

F. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO, for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

**GEN-6** Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the applicable edition of the CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A certified welding inspector, certified by the American Welding Society (AWS) and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks, and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Inspect the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM for corrective action; and

4. Submit a final signed report to the RE, CBO, and CPM stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

**Verification:** At least 15 days (or project owner and CBO approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s) or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

**GEN-7** If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, applicable sections of the CBC and/or other LORS.

**Verification:** The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action necessary to obtain the CBO's approval.

**GEN-8** The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request that the CBO inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

**Verification:** Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next monthly compliance report: (a) a written notice that the completed work is ready for final inspection; and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner, at its own expense, shall provide to the CBO three sets of electronic copies of the above documents. These shall be provided in the form of "read only" (Adobe) files, with restricted (password-protected) printing privileges, on archive quality compact discs.

**CIVIL-1** The project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A storm water pollution prevention plan (SWPPP);
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the CBC.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of site grading, the project owner shall

submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

**CIVIL-2** The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area.

**Verification:** The project owner shall notify the CPM, within 24 hours, when earthwork and construction are stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

**CIVIL-3** The project owner shall perform inspections in accordance with the CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

**Verification:** Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR) and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs for the reporting month shall also be included in the following monthly compliance report.

**CIVIL-4** After completion of finished grading, erosion and sedimentation control, and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans.

**Verification:** Within 30 days (or project owner and CBO approved alternative time frame) of the completion of the erosion and sediment control mitigation and

drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes, along with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.

**STRUC-1** Prior to the start of any increment of construction, the project owner shall submit plans, calculations, and other supporting documentation to the CBO for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;

4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

**Verification:** At least 60 days (or project owner and CBO approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO the above final design plans, specifications, and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

**STRUC-2** The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the CBC.

**Verification:** If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner

shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action necessary to obtain the CBO's approval.

**STRUC-3** The project owner shall submit to the CBO design changes to the final plans required by the CBC, including the revised drawings, specifications, calculations, and a complete description of and supporting rationale for the proposed changes, and shall give to the CBO prior notice of the intended filing.

**Verification:** On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.

**STRUC-4** Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

**Verification:** At least 30 days (or project owner and CBO approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.

**MECH-1** The project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations for each plant major piping and plumbing system listed in the CBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems subject to CBO design review and approval, and submit a signed statement to the CBO when the piping and plumbing systems have been designed, fabricated, and installed in accordance with all

of the applicable laws, ordinances, regulations and industry standards, which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Riverside County codes.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.

**MECH-2** For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of that installation.

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal-OSHA inspection approvals.

**MECH-3** The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction. The final plans, specifications, and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings, and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications, and calculations conform with the applicable LORS.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy

of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

**ELEC-1** Prior to the start of any increment of electrical construction for all electrical equipment and systems 480 Volts or higher (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit for CBO design review and approval the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A. Final plant design plans shall include:

1. one-line diagrams for the 13.8 kV, 4.16 kV, and 480 V systems; and

2. system grounding drawings.

B. Final plant calculations must establish:

1. short-circuit ratings of plant equipment;

2. ampacity of feeder cables;

3. voltage drop in feeder cables;

4. system grounding requirements;

5. coordination study calculations for fuses, circuit breakers, and protective relay settings for the 13.8 kV, 4.16 kV, and 480 V systems;

6. system grounding requirements; and

7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the monthly compliance report:

1. Receipt or delay of major electrical equipment;

2. Testing or energization of major electrical equipment; and

3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

**Verification:** At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

## B. POWER PLANT EFFICIENCY

Pursuant to the California Environmental Quality Act (CEQA), the Commission must determine whether the consumption of fossil fuel (a non-renewable form of energy) will result in substantial impacts upon energy resources. (Cal. Code Regs., tit. 14 § 15126.4(a)(1), App. F.). However, Rice Solar Energy Project (RSEP) would use solar energy to generate all of its capacity and fossil fuel, in the form of propane, would be used only for initial salt melting. The project would decrease reliance on fossil fuel, and would increase reliance on renewable energy resources. The undisputed evidence establishes that the project would not create significant adverse effects on fossil fuel energy supplies or resources, would not require additional sources of energy supply, and would not consume fossil fuel energy in a wasteful or inefficient manner. (Ex. 200, p. 7.2-1.)

The evidence contains analysis of the efficiency of the RSEP project design, compares project efficiency to that of other solar projects, and examines whether the project will incorporate measures that prevent or reduce wasteful, inefficient, or unnecessary energy consumption. (10/20/10 RT 21; Exs. 1; § 2, 2, 3, 48 [Power Plant Efficiency]; 200, § 7.2.) There are no LORS that establish solar power plant efficiency criteria.

### SUMMARY AND DISCUSSION OF THE EVIDENCE

RSEP, is a solar thermal power plant that is designed to produce a total of 150 MW (nominal net output) by employing the concentrated parabolic trough solar thermal technology, consisting of a large circular field of heliostats (mirrors) that reflect the sun's energy onto a central receiver tower to produce electrical power using a steam turbine generator fed from solar steam generators. The project would occupy approximately 1,410-acres. Liquid salt would be used as the heat transfer fluid (HTF).[1] (Ex. 200, p. 7.2-1.)

The project's power cycle would be based on a steam cycle (also known as the Rankine cycle). (Ex. 1, section 2.2.2.) The solar steam generator heat exchangers would receive HTF from the solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. The hot HTF would be used to generate steam in the

[1] Liquid salt has inherent thermal energy storage properties, has greater heat retention capacity and can operate at far higher operating temperatures than alternatives such as synthetic oil. (Ex. 200, p. 7.2-4.)

heat exchangers. This steam would then expand through the steam turbine generator to produce electrical power.

Applicant and Staff also evaluated alternative generating technologies to the proposed project[2]. Staff independently concluded that from the prospective of energy efficiency, given the project objectives, location, air pollution control requirements, and the commercial availability of various alternative technologies, that the selected solar thermal technology is a feasible selection. This evaluation is discussed in the **Alternatives** section of this Decision. (*Id*.)

1. Fossil fuel Use - Impacts

Solar thermal power plants typically consume much less fossil fuel (usually in the form of natural gas or propane) than other types of thermal power plants. Therefore, common measures of power plant efficiency used by the Commission to analyze gas-fired power plants are less meaningful when applied to a solar project. There are currently no legal or industry standards for measuring the efficiency of solar thermal power plants

RSEP would consume insignificant amounts of fossil fuel for power generation. It would consume fossil fuel only to initially melt salt for use as a HTF. The applicant estimates an average overall steam cycle efficiency of 38.7 percent for Rice Solar (Ex. 1, section 1.0.) Evidence of record compares the steam cycle efficiency of Rice Solar to the average efficiency of the typical modern steam turbines currently available in the market. The efficiency figures for these turbines range from 35 percent to 40 percent. The project's estimated thermal efficiency of 38.7 percent is comparable to this industry figure. (Ex. 200, p. 7.2-4.)

California refineries alone produce approximately 630 million gallons of propane per year. This amounts to only about 60 percent of California's total propane supply. Only small amounts of propane would be consumed by the project. Therefore, the project would not create a substantial increase in fossil fuel demand. Because the project would consume so little fossil fuel, we have determined that the Rice Solar project

[2] For purposes of this analysis, natural gas, oil, coal, nuclear, geothermal, biomass, hydroelectric, wind, solar photovoltaic and other solar thermal technologies were all considered. Because this project would consume no fossil fuel for power production, staff believes that the Rice Solar project would not constitute a significant adverse impact on fossil fuel energy resources compared to feasible alternatives.

would not constitute a significant adverse impact on fossil fuel energy resources compared to feasible alternatives.

2. Solar Land Use - Impacts

However, solar power plants do occupy vast tracts of land, so the focus for analyzing the efficiency of these types of facilities must shift from fuel efficiency to land use efficiency. To analyze the land use efficiency of a solar facility, Energy Commission staff first analyzed the RSEP project to determine its overall solar efficiency. The greater the project's solar efficiency, the less land the plant must occupy to produce a given power output. (Ex. 200, p. 7.2-5.) Staff argued that the extent of the project's land use impacts is likely in direct proportion to the number of acres affected. For this reason, Commission staff evaluated the land use efficiency of the project and expressed the results in terms of power produced, or MW per acre. Staff also compared the project to the MW per acre of other solar projects currently under review by the Commission. These projects' power and energy output, and the extent of the land occupied by them, are summarized in **Efficiency Table 1**, below. The solar land use efficiency for a typical fossil fuel-fired (natural gas-fired) combined cycle power plant is shown only for comparison. (Ex. 200, p. 7.2-7.)

According to the Staff analysis, the RSEP will produce power at the rate of 150 MW net, and will generate energy at the rate of 450,000 MW-hours net per year, while occupying 1,400 acres. (Ex. 1. Section 2.0, 2.1, 2.2.1.) Staff calculations for the RSEP establish:

**Power-based efficiency**: 150 MW ÷ 1,400 acres = **0.11 MW/acre** or **9.0 acres/MW**.
Staff calculates energy-based land use efficiency thus:
**Energy-based efficiency**: 450,000 MWh/year ÷ 1,400 acres =**321 MWh/acre-year**.

**Efficiency Table 1** below shows that RSEP, employing the power tower technology, is slightly less efficient in use of land than several of the solar projects recently reviewed by the Commission, which use the linear parabolic trough technology. However, Rice Solar is as efficient in use of land as the Ivanpah SEGS and Calico Solar projects. (Ex. 200, p. 7.2-7.)

**Efficiency Table 1 — Solar Land Use Efficiency**

| Project | Generating Capacity (MW net) | Annual Energy Production (MWh net) | Annual Fuel Consumption (MMBtu LHV) | Footprint (Acres) | Land Use Efficiency (Power-Based) (MW/acre) | Land Use Efficiency (Energy – Based) (MWh/acre-year) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Total | Solar Only[1] |
| **Rice Solar (09-AFC-10)** | **150** | **450,000** | **0** | **1,400** | **0.11** | **321** | **321** |
| Calico Solar (08-AFC-13) | 850 | 1,840,000 | 0 | 8,230 | 0.10 | 224 | 224 |
| Beacon Solar (08-AFC-2) | 250 | 600,000 | 36,000 | 1,240 | 0.20 | 484 | 480 |
| Ivanpah SEGS (07-AFC-5) | 400 | 960,000 | 432,432 | 3,744 | 0.11 | 256 | 238 |
| Abengoa Solar (09-AFC-5) | 250 | 630,000 | 94,280 | 1,420 | 0.18 | 444 | 434 |
| Blythe Solar (09-AFC-6) | 1000 | 2,100,000 | 207,839 | 5,950 | 0.17 | 353 | 348 |
| Palen Solar (09-AFC-7) | 500 | 1,000,000 | 103,919 | 2,970 | 0.17 | 337 | 332 |
| Genesis Solar (09-AFC-8) | 250 | 600,000 | 60,000 | 1,800 | 0.14 | 333 | 329 |
| Ridgecrest Solar (09-AFC-9) | 250 | 500,000 | 51,960 | 1,440 | 0.17 | 347 | 342 |
| San Joaquin Solar Hybrid (08-AFC-12) | 106 | 774,000 | 5,899,500 | 640 | 0.17 | 1209 | 415 |
| Avenal Energy (08-AFC-1)[2] | 600 | 3,023,388 | 24,792,786 | 25 | 24.0 | 120,936 | N/A |

[1] Net energy output is reduced by natural gas-fired combined cycle proxy energy output; see **Efficiency Appendix A**.
[2] Example natural gas-fired combined cycle plant.
Source: Ex. 200, p. 7.2-7.

3. Alternatives

a. To Reduce Land Use Impacts

Building and operating a natural gas-fired combined cycle power plant would yield much greater land use efficiency than any solar power plant; see **Efficiency Table 1**. However, this approach would not achieve the basic project objective of generating electricity from the renewable energy of the sun and would not further the state's renewable energy development and green-house gas reduction goals.

b. Alternative Cooling System

The applicant proposes to employ dry cooling for steam condensation. Thus, minimal water would be used for cooling the turbine-generator lubricating oil system. Even though evaporative or wet cooling could offer greater efficiency, the evidence establishes that the applicant's selection of dry cooling is a reasonable tradeoff because it would prevent potentially significant environmental impacts caused by consumption of the large quantities of water required by wet cooling. (Ex. 200, 7.2-8.)

c. Reduced Acreage Alternative

The Staff testimony introduced a Reduced Acreage Alternative which would be 7.2 percent smaller than the proposed project and would be located in the same 2,560-acre square-shaped parcel within the larger 3,324-acre ownership property as the proposed project. The number of heliostats would remain the same as the proposed project. The heliostat field (plus the evaporation pond and administration areas) would occupy about 1,270 acres instead of the 1,370 acres required for the proposed project. The project's nominal 150 megawatts (MW) generation output would be reduced by approximately 2 MW. The analysis demonstrated that the land-use efficiency of this alternative would not substantially change from the original proposal because the size of the land to be occupied by the facility (power block and solar field) and the power output would be reduced proportionally. (Ex. 200, p. 7.2-9.) Also analyzed was a transmission line interconnection alternative known as the SR 62/Rice Valley Road Generation Tie Line Alternative. However, this alternative will have no impact on the efficiency of the project. (*Id.* p. 7.2-10.)

d. No Project/No Action Alternative

Under this alternative, the proposed RSEP would not be approved by the Energy Commission; BLM would not approve the transmission line application and would not amend the CDCA Plan; and Western would not approve the interconnection request. As a result, no solar energy project would be constructed on the project site. This alternative also assumes that the site would continue to remain in its existing condition. Thus, none of the impacts and none of the benefits of the proposed project related to Power Plant Efficiency would occur. However, other renewable energy projects may be constructed to meet State and Federal mandates, and those projects would have similar impacts in other locations. (*Ibid*.)

e. Cumulative Impacts

Although other solar and wind power projects have been proposed in the vicinity of RSEP, there are no nearby power plant projects or other projects consuming large amounts of fossil fuel that hold the potential for cumulative energy consumption impacts when aggregated with the project. The amount of fuel to be consumed by RSEP would be insignificant compared to the considerable resources of fossil fuel, including propane, in California. Because Rice Solar would essentially consume no fossil fuel for power generation, it should compete favorably in the California power market and replace fossil fuel burning power plants. The project would therefore cause a positive impact on the cumulative amount of fossil fuel consumed for power generation. (*Ibid*.)

Based on the uncontroverted evidence, we make the following findings and reach the following conclusions:

## FINDINGS OF FACT

1. RSEP will provide approximately 150 MW of electrical power, using solar energy to generate all of its capacity and consuming no fossil fuel for power production.

2. The project will burn insignificant amounts of propane for purposes of initial salt melting.

3. The evidence contains a comparative analysis of alternative fuel sources and generation technologies, none of which is superior to the proposed project at meeting project objectives in an efficient manner.

4. The RSEP would not create significant adverse effects on fossil fuel energy supplies or resources, and would not consume fossil fuel energy in a wasteful or inefficient manner.

5. The impact of the project's fuel consumption on energy supplies and energy efficiency is less than significant.

6. RSEP will not require the development of new fuel supply resources.

7. The project will decrease reliance on fossil fuel and will increase reliance on renewable energy resources. Consequently, the project would help in reducing California's dependence on fossil fuel-fired power plants.

8. The evidentiary record contains an analysis of the project's land use impacts compared to energy output, and analyses of alternative solar technologies and heat rejection systems.

9. The project will occupy approximately 9 acres per MW of power output, a figure higher than that of some other solar power technologies. Employing a less land-intensive solar technology, such as the concentrated parabolic trough technology would slightly reduce this figure.

10. No nearby power plant projects or other projects consuming large amounts of fossil fuel hold the potential for cumulative energy consumption impacts when aggregated with the project.

11. No Federal, State, or local laws, ordinances, regulations, or standards apply to the efficiency of this project.

## CONCLUSIONS OF LAW

1. The Rice Solar Energy Project will not create adverse effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.

2. No Conditions of Certification are required for this topic area.

## C. POWER PLANT RELIABILITY

In order to ensure safe and reliable operation of the Rice Solar Energy Project (RSEP) we must determine whether the project will be designed, sited and built in accordance with typical industry norms for reliable power generation. We apply these norms as a benchmark to ensure that the resulting project would not be likely to degrade the overall reliability of the electric system to which it is attached. [Pub. Res. Code, § 25520(b); Cal. Code Regs., tit. 20, § 1752(c)(2).] Furthermore, we are concerned that if, for any reason, a project proves to be unreliable and does not operate, then the Commission would have allowed the disturbance of large blocks of land and the environment with no related public benefit. There are, however, no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

The "availability factor" of a power plant is the percentage of time it is available to generate power; both planned and unplanned outages subtract from this availability. Measures of power plant reliability are based upon two factors: 1) the plant's actual ability to generate power when it is considered to be available and, 2) failures at start-up and unplanned (or forced) outages. For practical purposes, reliability can be considered a combination of these two industry measures, making a reliable power plant one that can provide power when called upon to operate. Power plant systems must be able to operate for extended periods without shutting down for maintenance or repairs. Achieving this reliability requires adequate levels of equipment availability, plant maintainability with scheduled maintenance outages, fuel and water availability, and resistance to natural hazards. This section examines these factors for the project, however at this time, solar-specific industry norms that could be used for comparison purposes, have not been developed for solar thermal power plants. (Ex. 200, p. 7.3-6.)

The responsibility for maintaining electrical system reliability falls largely to control area operators such as the California Independent System Operator (CAISO) that purchase, dispatch, and sell electric power throughout the state. CAISO has established protocols to ensure sufficient electrical system reliability. For example, "must run" power purchase agreements and "participating generator" agreements are two mechanisms that contribute to an adequate supply of reliable power. (Ex. 200, p. 7.3-2.)

The California Public Utilities Commission consults with CAISO to establish resource adequacy requirements for all load-serving entities (basically, publicly

and privately owned utility companies). These requirements include maintaining a minimum reserve margin (extra generating capacity to serve in times of equipment failure or unexpected demand) and maintaining sufficient local generating resources to satisfy the load-serving entity's peak demand and operating reserve requirements. The CAISO has begun to establish specific criteria for each load-serving entity under its jurisdiction. These criteria guide each load-serving entity in deciding how much generating capacity and ancillary services to build or purchase, after which the load-serving entity issues power purchase agreements to satisfy these needs. (*Id*.)

According to the evidence, as summarized below, these criteria have been developed on the assumption that individual power plants in the current competitive market will continue to exhibit historical reliability levels. However, it is possible that, if numerous power plants operated significantly below historical levels, this assumption would prove invalid. Therefore, to ensure adequate system reliability, we examine whether individual power plants will be built and operated to the traditional level of reliability reflected in the power generation industry. We take this approach because, where a power plant compares favorably to industry norms, it is not likely to degrade the overall reliability of the electric system it serves.

## SUMMARY AND DISCUSSION OF THE EVIDENCE

The Applicant intends that the RSEP provide dependable renewable power to the electricity grid, generally during the hours of peak power consumption such as hot summer afternoons and evenings. It expects an annual availability factor of approximately 92-98 percent for the project. For practical purposes, a reliable power plant is one that is available when called upon to operate. The evidence shows that delivering acceptable reliability entails: 1) adequate levels of equipment availability; 2) plant maintainability with scheduled maintenance outages; 3) fuel and water availability; and 4) resistance to natural hazards. (Ex. 200, p. 7.3-1, 7.3-3.)

The record, summarized below, evaluates the proposed project against typical industry norms as a benchmark for assessing plant reliability. The evidence was undisputed. (10/29/10 RT 21, Exs. 1, § 2, Appen. 5.15C, 5.6.5; 200, § 7.3.)

1. Equipment Availability

Equipment availability will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The project owner will apply a QA/QC program typical in the power industry. Equipment will be purchased from qualified suppliers and the project owner will perform receipt inspections, test components, and administer independent testing contracts. To ensure these measures are taken, we have incorporated appropriate Conditions of Certification in the **Facility Design** section of this Decision. (Ex. 200, p. 7.3-3.)

2. Plant Maintainability

The Rice Solar Energy Project's energy storage technology allows the plant to generate steady uninterrupted power, despite cloud cover, and even at night.. The RSEP offers adequate opportunity for maintenance work during the downtime for the generating equipment, and maintenance or repairs to the solar capture equipment could be done when those elements of the plant are shut down at night. The nature of solar thermal generating technology also provides inherent redundancy; the parallel arrangement of the heliostats would allow for the plant to operate with reduced output if one (or possible several) row(s) of reflectors were to require service or repair. This redundancy would allow service or repair to be done during sunny days when the plant is in operation. Other examples of the RSEP's redundant equipment include two 100 percent boiler feed-water pumps, three 50 percent condensate pumps, and a multi-fan air-cooled condenser. (Ex. 200, p. 7.3-4.)

The project owner will establish a maintenance program based on recommendations from the various equipment manufacturers. This will encompass both preventive and predictive maintenance techniques. Maintenance outages will likely be planned for night time of periods of low electricity demand. The evidence establishes that these measures will ensure acceptable reliability. (*Id*.)

3. Fuel and Water Availability

For any power plant the long-term availability of fuel, and water for cooling or process use is necessary to ensure reliability. The Rice Solar project will use small amounts of propane for initial salt melting. The evidence establishes that

adequate supplies of propane are available to meet the project's relatively modest needs. (Ex. 200, p. 7.3-4.)

The Applicant has proposed using well water for domestic and industrial water needs, including steam cycle makeup, mirror washing, service water and fire protection water. The project would be dry cooled, so no water would be required for power plant cooling. In addition, minimal amounts of water would be used for cooling the turbine-generator lubricating oil system. The quantities of water to be consumed by the project are relatively small compared to the capacity of the resource available. (Ex. 200, p. 7.3-5.)

4. Natural Hazards

The project will be designed and constructed to the latest applicable LORS. (Ex. 1, Appen. 2C.) These requirements represent an upgrading of performance during seismic shaking compared to older facilities due to continually upgraded seismic codes. Thus, this project would likely perform at least as well as, and perhaps better than, existing plants in the electric power system. To ensure these design benefits, we have adopted Conditions of Certification in the **Facility Design** section of this Decision. In addition, the general historical performance of California power plants and the electrical system during seismic events has historically been high. There is thus no basis for special concerns regarding RSEP's functional reliability during earthquakes[1].

High winds are common in the region of the site, presenting the potential risk of damage to the solar mirrors. However, the record shows that project features would be built to withstand wind loading. Regarding any risk from flooding, the site lies within an area designated by the Federal Emergency Management Agency as Zone D, which designates areas where there are possible but undetermined flood hazards. Project features would be designed and built to provide adequate levels of flood resistance. (Exs. 1, Appen. 5.15C, 5.6.5; 200, p. 7.3-5.)

5. Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors and other related reliability data. However, no

[1] Also see the **Geology and Paleontology** section of this document.

statistics are currently available for solar power plants[2]. Nevertheless, the evidence establishes the likelihood that the project will reach its predicted annual availability factor of 92-98 percent. (Ex. 200, 7.3-1, 7.3-6.)

6. Noteworthy Project Benefit

The evidence shows that the Rice Solar project will provide reliable, renewable energy on hot summer afternoons and evenings, when it is most needed. The evidence characterizes this as a "noteworthy project benefit." (Ex. 200, p. 7.3-8.)

## FINDINGS OF FACT

Based on the uncontested evidence, we make the following findings:

1. No federal, state, or local/county LORS apply specifically to the reliability of the Rice Solar Energy Project.

2. A project's reliability is acceptable if it does not degrade the reliability of the utility system to which it is connected.

3. Because solar technology is relatively new and the technologies currently employed are so varied among solar projects, no National American Electric Reliability Corporation (NERC) statistics are available for solar power plants.

4. Applicant's unchallenged prediction of the availability factor for Rice Solar is 92-98 percent.

5. Implementation of Quality Assurance/Quality Control (QA/QC) program for Rice Solar during design, procurement, construction, and operation of the plant, as well as adequate maintenance and repair of the equipment and systems, will ensure the project is adequately reliable.

6. Appropriate Conditions of Certification included in the **Facility Design** portion of this Decision ensure implementation of the QA/QC program for Rice Solar and will ensure conformance with seismic design criteria.

7. The project's propane fuel supply is reliable.

8. The evidence shows that adequate, reliable supplies of water exist and are available for the project.

[2] NERC reports that, for the years 2002-2006, the availability factor for fossil fueled units is 86.01 percent.

9. The project will likely meet industry norms for reliability, including reliability during seismic events, and will not degrade the overall electrical system.

10. The nature of solar thermal generating technology provides inherent redundancy because the series-parallel arrangement of solar collector assemblies would allow for reduced output generation if one (or possibly several) rows of solar collectors were to require service or repair.

11. The project will provide renewable energy on hot summer days and evenings, when it is most needed.

## CONCLUSIONS OF LAW

1. We therefore conclude that the Rice Solar project will meet or exceed industry norms and not degrade the overall reliability of the electrical system.

2. There are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

3. No Conditions of Certification are required for this topic area.

## D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes ". . . any electric power line carrying electric power from a thermal power plant . . . to a point of junction with an interconnected transmission system." (Pub. Res. Code § 25107.) In conducting its review of a power plant AFC, the Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS) required for safe and reliable electric power transmission.

We must evaluate the power plant switchyard, outlet line, termination and downstream facilities identified by the Applicant. Additionally, under CEQA, the Commission must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the Energy Commission. (Cal. Code Regs., tit. 14, § 15378.) Thus, the Commission must identify the system impacts and necessary new or modified transmission facilities required downstream of the proposed interconnection. The record indicates that the Applicant in this case has adequately identified all necessary interconnection facilities based on the information currently available.

Because the Rice Solar Energy Project (RSEP) will interconnect to the Western Area Power Administration (Western) system and the new RSEP generation tie line will terminate at a proposed new Western 161/230-kV substation, Western is responsible for ensuring electric system reliability for RSEP interconnection.

Western will ensure adequacy and reliability of the proposed generator interconnection to its system according to Western's standards and applicable national and regional planning and reliability LORS. The applicable LORS are identified in **Appendix A** of this Decision. Western is the federal lead agency for the analysis of the RSEP interconnection under the National Environmental Protection Act (NEPA).

The record indicates that the Applicant in this case has adequately identified all necessary interconnection facilities based on the information currently available. The record also includes Conditions of Certification to ensure the project complies with applicable laws during the design review, construction, operation, and potential closure of the project. The evidence was undisputed. (10/29/10 RT 21; Exs. 1, § 3.0, Appen. 3A-3B; 2 [2-5]; 3; 4 [154-155]; 22; 23; 44; 45; 48; 200, §§ 5.1, 7.4, Appen. to TSE Section.)

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Transmission Facilities Description

The RSEP includes a steam turbine generator (STG) rated 200 MVA, 18-kV with a nominal net 150 MW output. The STG will be connected through an 8,000-ampere segregated bus duct and an 8,000-ampere 18-kV breaker to the low voltage terminal of a dedicated 118/157/202 MVA, 18/161/230-kV generator step-up (GSU) transformer with a specified impedance of 10 percent @118 MVA.

The 161-kV high voltage terminal of the GSU transformer will connected to the new on-site RSEP 161/230-kV switchyard dead-end structure through short overhead 1,272 Kcmil steel-reinforced aluminum conductors (ACSR) and a 2,000-ampere, 230-kV breaker with two associated 2,000-ampere disconnect switches.

The switchyard will interconnect to the existing Western Parker-Blythe 161-kV No. 2 line by way of a new approximately 10-mile long 230-kV single circuit overhead transmission line on 75 to 115-foot high tubular steel poles. Western's Parker-Blythe line currently operates at 161-kV but could be capable of operating at 230-kV.

The RSEP generator tie line will take a direct and short southeast route from the project site's south fence line along 5.4 miles of an existing dirt road to the Rice Valley Road. From this point, the line would run another 4.6 miles along a newly built dirt access road. The generator tie line will cross private land and land owned by the federal government and managed by the U. S. Bureau of Land Management (BLM).

The new generator tie line will terminate at a take-off structure within the fence line of the proposed new Western 161/230-kV substation (hereinafter referred to as "Rice substation") to be located adjacent to Western's Parker-Blythe 161-kV transmission line. Comments on the PMPD received from Western Area Power Administration (Western) indicate that Western has completed its Facilities Study and as a result, Western provided additional details regarding its proposed Rice Substation. For example, the Rice substation would be a ring bus configuration with three 2,000-ampere, 230-kV circuit breakers. In addition, according to Western, structural steel and bus work for a future fourth line bay would be included to be utilized by Western in the future if needed. Other major electrical equipment will include six, 2,000-ampere disconnect switches, nine metering

transformers and nine coupling capacitor voltage transformers. A control building (with batteries and chargers, control boards, telecommunications equipment, etc.) and microwave tower complete the major features. Western also stated that the existing Parker-Blythe No. 2 line would be looped into the new substation, occupying the remaining two line bays. Western would construct, operate and maintain the station and its facilities within the fence line. (Exs. 1, §§ 2; 3; 45, p. 7.4-5.)

**Transmission System Engineering Figure 1** below shows the proposed transmission line route.

# Transmission System Engineering Figure 1
## Proposed Transmission Line Route

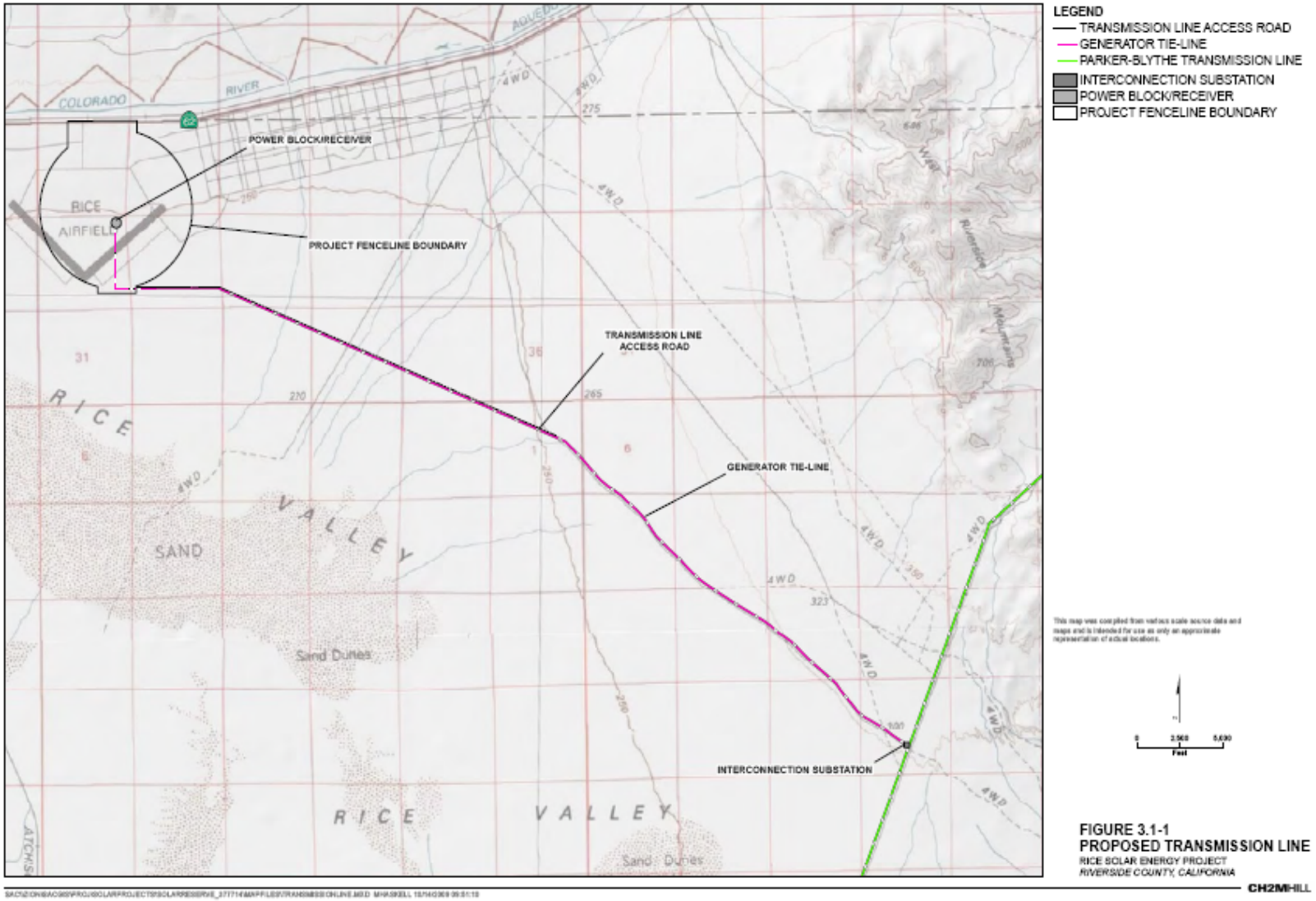



FIGURE 3.1-1
PROPOSED TRANSMISSION LINE
RICE SOLAR ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

CH2MHILL

The evidence establishes that the Applicant will build, own and operate the onsite switchyard and the generator tie line. Western will build, own and operate the proposed new Rice substation and the interconnecting facilities. All construction will be performed according to Western's construction standards. (Ex. 200, p. 7.4-5.)

The evidence establishes that the configuration of the proposed new RSEP switchyard, the generator overhead tie line and its termination at the proposed Rice substation will comply with industry standards and good utility practices. Implementation of proposed Conditions of Certification **TSE-1** through **TSE-8** will ensure that these facilities are designed, built and operated in accordance with good utility practices and applicable LORS. (Ex. 200, p. 7.4-6.)

Condition of Certification **TSE-1 r**equires the project owner to provide the Compliance Project Manager (CPM) and Chief Building Official (CBO) a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List that contains a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment.

Conditions **TSE-2** and **TSE- 3** collectively require the project owner to assign specified engineers to perform design and review functions regarding the transmission system engineering facilities and provides a resolution mechanism for design/construction discrepancies. Condition **TSE-4** provides that the project owner shall not begin construction on power plant switchyard, outlet line, and termination until plans for each increment received CBO approval.

Condition **TSE-5** requires the project owner to ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. Similarly, **TSE-8** requires the project owner to be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM- and CBO-approved changes thereto, and to ensure conformance with California Public Utilities Commission General Order 95 or National Electric Safety Code, Title 8 of the California Code of Regulations, Articles 35, 36, and 37 of the *High Voltage Electric Safety Orders*, National Electric Code and related industry standards.

Condition **TSE-6** provides a mechanism for the project owner to request approval of changes that might not conform to the requirements of **TSE-5**. Condition

**TSE-7** requires the project owner to provide Western with required notices of the proposed date synchronizing the facility with the Western Desert Southwest (DSW) Transmission system.

2. Transmission System Impacts Analysis

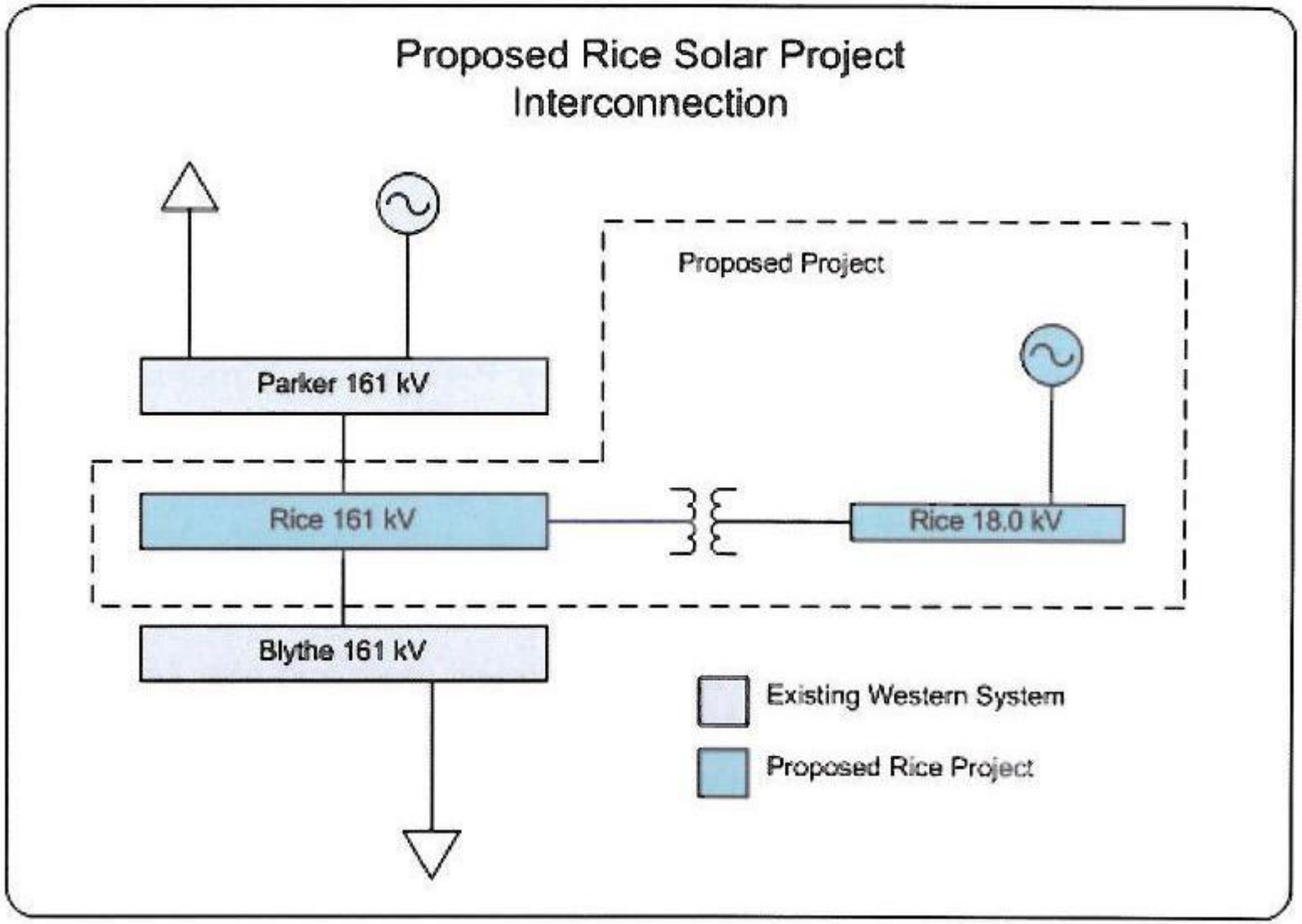
In accordance with the Western LGIP and "General Requirements for Interconnection", the System Impact Study (SIS) and Facilities Study (FS) were conducted to determine the preferred and alternate interconnection methods to the grid, the downstream transmission system impacts, and the mitigation measures needed to ensure system conformance with performance levels required by the Western reliability criteria, NERC Reliability standards, WECC system performance criteria and also California ISO Planning standards. (Ex. 22.) Both the SIS and FS analyze the grid with and without the proposed project under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds by which grid reliability is determined. We rely on these studies and any review conducted by the responsible agencies to determine the project impacts on the transmission grid and to identify any necessary new downstream facilities or modifications required to bring the transmission network into compliance with applicable reliability standards. (Ex. 200, p. 7.4- 6.)

The studies must analyze the impact of the project for the proposed first year of operation and thus are based on a forecast of loads, generation and transmission. Load forecasts are developed by each load serving entity embedded within Western's transmission system . Generation and transmission forecasts are established by an interconnection queue. The studies are focused on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission system, voltage collapse, loss of loads or cascading outages), and short circuit duties. (Exs. 22, 200, p. 7.4-6.)

The SIS, dated May 14, 2010, was prepared by Western to evaluate the system impacts of the proposed RSEP on the Western transmission system in the Desert Southwest region and the adjacent Southern California Edison (SCE) and Imperial Irrigation District (IID) transmission systems. The SIS was supplemented by additional studies and information (diagrams) dated August 9, 2010, which were conducted by Utility System Efficiencies, Inc., a consulting firm in coordination with Western, and used the Western base cases. (Ex. 1, p. 3-12, 22, 48.)

**Transmission System Engineering Figure 2** below shows the proposed configuration of the substation and associated generation.

**Figure 1: Project Interconnection Point**



The Western SIS was prepared with and without the RSEP 150 MW generation using the following base cases:

- An updated WECC 2013 heavy summer base case with addition of four higher queue projects with a total of 1319 MW generation; and

- An updated WECC 2013 heavy winter base case with addition of total 1319 MW generation of four higher queue projects and with maximum allowable East of the River (EOR) seasonal path flow. (Ex. 200, p. 7.4-6 7.4-7.)

In the base cases, generation added from the interconnection queue was balanced by reducing fossil fuel generation in the Los Angeles area. The existing 520 MW Blythe generating plant (modeled with only 319 MW generation output in the heavy summer case and 509 MW in the heavy winter case) interconnection was shown switched over from the Western system to the California ISO grid at the Julian Hinds 230-kV substation.

In each of the studies, it is expected that generation and critical seasonal power flows were maintained within their limits. It is expected that the base cases included funded and planned transmission upgrades in the Western system and planned California ISO approved upgrades that would be operational by 2013. (Exs. 22, pp. 4 – 5, 48; 200, p. 7.4-7.)

a. Power Flow Study Results

The SIS and supplementary report demonstrate that the addition of the RSEP will not cause any adverse impacts on the Western transmission system including the Parker-Davis transmission system in the Desert Southwest region under the base case scenarios during normal operation (N-0), and emergency Category B and Category C contingencies.

But the studies identify potential impacts on the adjacent Southern California Edison (SCE) transmission systems as follows:

- A new normal (N-0) and a new Category C contingency overload on the SCE Julian Hinds-Mirage 230-kV line,

- A new Category B contingency overload on the Imperial Irrigation District (IIID) Drop 4-Pilot Knob 92-kV line.

- Exacerbate pre-project overloads on the SCE Julian Hinds-Mirage 230-kV line under certain contingency conditions.

The addition of the RSEP may exacerbate pre-project overloads in six transmission elements in the Imperial Irrigation District (IID) system will be under certain contingency conditions. (Ex. 22, 200, p. 7.4-7 – 7.4-8.)

b. Sensitivity Power Flow Study Results

In addition power flow sensitivity studies were performed analyzing the addition of the proposed 110 MW Quartzsite plant in the Western queue to the base cases. The studies were performed with and without RSEP generation.

The SIS demonstrates that the addition of the RSEP and Quartzsite generation output will not cause any thermal overloads or voltage violations on the Western Parker-Davis system in the Desert Southwest (DSW) region during Category A normal operation, Category B emergency and Category C contingencies.

The addition of proposed projects will, however, create a new Category B contingency overload on the SCE system and a new Category B contingency overload on the IID system. In addition, a pre-project overload on the SCE system and several pre-project overloads on the IID system are exacerbated under normal and certain contingency conditions. (Exs. 22; 200, p. 7.4-8.)

The evidence establishes that Western apprised SCE and IID of the SIS report and base cases. SCE suggested modifications to the modeling of Static Var Compensator at the Devers substation for load flow and transient and post-transient analyses. SCE requested three additional contingency power flow studies and the short circuit study results for SCE buses. SCE also requested to coordinate the SIS reports with California ISO and Metropolitan Water District (MWD).

Specifically with respect to mitigation, SCE suggested the following possible measures to address the overload on the Julian Hinds-Mirage 230-kV line after coordination with California ISO:

- Generation curtailment in the Western system;
- Not to schedule power into SCE system from Western system; and
- Reconductoring the Julian Hinds-Mirage 230-kV line.

Like SCE, IID also indicated that it would review the base cases data for accuracy and to determine if the current operating procedures adequately protect their system with the proposed addition of the RSEP. (Ex. 200, p. 7.4-10.)

Based on the record of communications among Western, SCE, and IID, it appears that these entities will develop and implement a viable mitigation plan that will eliminate the identified overloads in the SCE and IID systems. Implementation of Staff-proposed Condition of Certification **TSE 5**, subdivision f) iii) – as adopted below - will ensure that an adequate mitigation plan is developed . (Exs. 48, 200, p. 7.4-10.)

c. Short- Circuit Study Results

Three line-to-ground faults were simulated with and without the RSEP to determine if any equipment or circuit breakers in Western substations in the project vicinity would be overstressed due to increase in fault currents caused by the addition of the project. The short circuit duty analysis with heavy summer and heavy winter cases included all higher queue projects and the related transmission upgrades.

The study shows that the addition of the RSEP will increase the fault duties in the range of 1.3 kA to 1.5 kA at the Parker and Blythe 161-kV substations, but will remain within the fault interrupting capacities of the circuit breakers at both substations. Thus, RSEP does not trigger the need for any circuit breaker replacements in the Western Parker-Davis system. (Exs. 22; 200, pp. 7.4-10 – 7.4-11.)

d. Transient Stability Study Results

Transient stability analysis was performed using the base cases to determine whether the transmission system would remain stable with the addition of the RSEP. More particularly, the analysis was performed for the 2013 heavy summer and 2013 heavy winter base cases with simulated faults under selected critical Category B and Category C contingencies in the Western Parker-Davis system. According to the study, no transient stability concerns were identified for the addition of the RSEP. (Exs. 22; 200, p. 7.4-11.)

3. Downstream Facilities Impacts

Other than the above-described interconnection facilities (i.e., the new RSEP switchyard, generator overhead tie line, and Rice substation), accommodating the interconnection of the RSEP generation output to the Western Parker-Davis system will not involve installing new downstream transmission facilities or making modifications to existing facilities within Western's transmission system. (Ex. 200, p. 7.4-11.)

4. Telecommunications Impacts

As noted above, comments on the PMPD received from Western indicate that Western has completed its Facilities Study and as a result, Western provided additional details regarding telecommunications impacts. According to Western, dual-path communications are required between Western's interconnecting substation ("Rice") and Phoenix Operations Center. However, only single-path communication is required between Western and RSEP for breaker control, relaying, etc. The metering and SCADA data coming from Western's station requires "physically-separate" and "diversely-routed" dual paths to Phoenix Operations Center. The two paths selected will be microwave (primary path) and digital power line carrier (redundant path). The microwave (primary) signal will be sent to either Headgate Rock Sub or Black Point Communications Site using an intermediate reflector, to gain access to Western's microwave backbone. The digital power line carrier signal will be sent to Parker Dam Substation to gain access to Western's fiber-optic backbone.

Common communications systems used for this purpose include the fiber optic cable link, microwave (radio-frequency) transmission, and the power line carrier/broadband-over-power-line. (Ex. 23.) Based on the new information from Western, from the new substation interconnecting the RSEP to Western's system, telecommunications would be established in the following ways:

(1) microwave (radio-frequency) transmission from either RSEP or the new substation to terminate at either Western's Blythe~~,~~ or Headgate Rock substations or to an existing telecommunications site at either Cunningham Mountain or Black Point; ~~or~~ and

(2) power line carrier/broadband-over-power-Line. (Exs. 23; 200, § 7.4, Appendix to TSE.)

The Applicant has provided a planning-level description of the telecommunication options. (Ex. 23.) Site-specific engineering and design document will be provided at a later date. Thus, Staff prepared a screening level analysis to inform of the potential environmental and public health effects caused by interconnection of the RSEP to the Western transmission system. (Ex. 1, § 7.4, Appendix to TSE.)

In summary, Staff's evaluation encompassed the topics that included but were not limited to **Air Quality, Visual Resources, Biological Resources, Cultural Resources, Geology and Paleontology, Hazardous Waste Management, Land Use, Noise and Vibration, Traffic and Transportation, Socioeconomics, Soil and Water Resources, Waste Management,** and **Visual Resources**. (*Id*.) The evaluation does not include sections specific to power plant operations (i.e., **Facility Design, Power Plant Efficiency, Power Plant Reliability, and Transmission Line Safety and Nuisance**). Rather, the construction-related analysis and proposed mitigation measures in this Decision and the SA/DEIS provide a general understanding of the potential impacts in those areas that could possibly, but not likely, be caused by telecommunication interconnection actions.

Based on the evidence and analysis presented, we find that the telecommunication upgrades will not impact **Facility Design, Power Plant Efficiency, Power Plant Reliability, and Transmission Line Safety and Nuisance**. Although there might be environmental impacts in other technical areas, we anticipate those impacts being less than significant with implementation of the Conditions of Certification set forth throughout this Decision. We recognize, however, that additional mitigation measures might be required by Western as the project design is further refined. (*Id.*)

5. Cumulative Impacts

The Transmission System Engineering analysis focuses on whether or not a proposed project will meet required codes and standards. The cumulative analysis considers whether the interconnection of the RSEP to Western's transmission system along with other existing and foreseeable generation projects will conform to all LORS.

At all times the transmission grid must remain in compliance with reliability standards, whether one project or many projects interconnect. For the RSEP interconnection to the Western DSW system, the Western SIS did not identify any potential cumulative impacts on the Western transmission network. Further,

the evidence indicates that no cumulative impacts are expected in the Western DSW 161/230-kV network because the existing 520 MW Blythe generating plant interconnection was recently switched over from the Western grid to the California ISO grid and the other pending interconnection projects identified in Western's DSW region are located in states of Arizona and Nevada. (Ex. 200, § 5.1; p. 7.4-11.)

We find that the impacts identified in the SIS due to the addition of the RSEP, will be mitigated with the identified recommended measures and Conditions of Certification. Implementation of the mitigation measures and conditions will minimize the project's contribution to cumulative impacts to less than significant levels.

6. Compliance with LORS

The evidence establishes that the configuration of the proposed new RSEP switchyard, the generator overhead tie line and its termination at the proposed Rice substation will comply with industry standards and good utility practices. Implementation of proposed Conditions of Certification **TSE-1** through **TSE-8** will ensure that these facilities are designed, built and operated in accordance with good utility practices and applicable LORS.

## FINDINGS OF FACT

Based on the evidence, the Commission makes the following finding:

1. The record includes a System Impact Study (SIS) and a supplementary report which analyzes potential reliability and downstream transmission impacts that could occur when the RSEP project interconnects to the grid.

2. The System Impact Study performed by Western and the supplementary report demonstrate that the addition of the 150 MW RSEP would not cause any adverse impacts on the Western transmission system including the Parker-Davis (P-D) transmission system in the Desert Southwest region under 2013 heavy summer and 2013 heavy winter system conditions during normal operation (N-0), and emergency Category B and Category C contingencies.

3. The System Impact Study performed by Western and the supplementary report identify that the project could have impacts on the adjacent Southern California Edison (SCE) and Imperial Irrigation District (IID) transmission

systems. The addition of the RSEP would cause a new normal (N-0) and a new Category C contingency overload on the SCE Julian Hinds-Mirage 230-kV line, and a new Category B contingency overload on the IID Drop 4-Pilot Knob 92-kV line. The project would also exacerbate pre-project overloads on the SCE Julian Hinds-Mirage 230-kV line and on six transmission elements in the IID system under certain contingency conditions. Sensitivity studies which included the RSEP and another Western queue project, the proposed 110 MW Quartzsite plant (QP), identified similar impacts in the SCE and IID systems.

4. With the concurrence of the Califoria ISO, SCE, MWD and IID, Western will develop a viable mitigation plan that will eliminate the identified overloads in the SCE and IID systems and be agreed to by the Applicant.

5. A planning-level project description was the basis of the general environmental analysis of the telecommunication system upgrade options summarized herein and more fully set forth in Appendix A to the SA/DEIS Transmission System Engineering analysis.

6. The RSEP would meet the requirements and standards of all applicable LORS upon compliance with the recommended Conditions of Certification.

7. The RSEP is a solar generation facility which would provide clean renewable energy towards meeting state mandates and goals.

## CONCLUSIONS OF LAW

1. With the implementation of the various mitigation measures specified in this Decision, and the Conditions of Certification which follow, the proposed transmission interconnection for the Rice Solar Energy Project will not contribute to significant adverse direct, indirect, or cumulative impacts.

2. The Conditions of Certification below ensure that the transmission-related aspects of the Rice Solar Energy Project will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**TSE-1** The project owner shall furnish to the CPM and to the CBO a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal

packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

**Verification:** At least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with CPM and CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

| **Table 1: Major Equipment List** |
|---|
| Breakers |
| Step-up Transformer |
| Switchyard |
| Busses |
| Surge Arrestors |
| Disconnects and Wave-traps |
| Take off facilities |
| Electrical Control Building |
| Switchyard Control Building |
| Transmission Pole/Tower |
| Insulators and Conductors |
| Grounding System |

**TSE-2** Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following to the project:

a. a civil engineer;

b. a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;

c. a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; or

d. a mechanical engineer.

(Business and Professions Code Sections 6704 et seq. require state

registration to practice as a civil engineer or structural engineer in California.)

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical or civil and design engineer assigned in conformance with Facility Design condition **GEN-5**, may be responsible for design and review of the TSE facilities.

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations.

The electrical engineer shall:

1. Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

**Verification:** At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

**TSE-3** If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and

recommend corrective action (1998 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, *Duties and Responsibilities of the Special Inspector*; Appendix Chapter 33, Section 3317.7, *Notification of Noncompliance*). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and shall reference this condition of certification.

**Verification:** The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action required to obtain the CBO's approval.

**TSE-4** For the power plant switchyard, outlet line and termination, the project owner shall not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

c) the number of electrical drawings approved, submitted for approval, and still to be submitted.

**Verification:** At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

**TSE-5** The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations to the CBO as determined by the CBO.

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8

of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards.

b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to accommodate full output from the project and to comply with a short-circuit analysis.

c) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.

d) The project conductors shall be sized to accommodate the full output from the project.

e) Termination facilities shall comply with applicable Western interconnection standards.

f) The project owner shall provide to the CPM:

i) The Special Protection System (SPS) sequencing and timing if applicable,

ii) The Facilities study report performed by Western.

iii) A mitigation plan for potential overloads in the SCE and IID systems identified in the Western SIS as approved by Western through the process that involves all stakeholders (Western, California ISO, SCE, IID and MWD) and agreed to by the project owner.

iv) An Operational study report or procedures from Western based on the expected or current RSEP Commercial Operation Date (COD).

v) A copy of the executed LGIA signed by Western and the project owner.

**Verification:** At least 60 days prior to the start of construction of transmission facilities (or a lesser number of days mutually agreed to by the project owner and CBO), the project owner shall submit to the CBO for approval:

a) Design drawings, specifications and calculations conforming with CPUC General Order 95 or NESC, Title 8, Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, NEC, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.

b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[1] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, *High Voltage Electric Safety Orders*, NEC, applicable interconnection standards, and related industry standards.

c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **TSE-5** a) through f) above.

d) The Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM.

e) A mitigation plan for potential overloads in the SCE and IID systems identified in the Western SIS as approved by Western through the process that involves all stakeholders (Western, California ISO, SCE, IID and MWD) and as agreed by the project owner.

f) The Facilities study report performed by Western.

g) An Operational study report or procedures from Western based on the expected or current RSEP COD.

h) A copy of the executed LGIA signed by Western and the project owner.

**TSE-6** The project owner shall inform the CPM and CBO of any impending changes that may not conform to requirements **TSE-5** a) through f), and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

**Verification:** At least 60 days prior to the construction of transmission facilities, the project owner shall inform the CBO and the CPM of any impending changes that` may not conform to requirements of **TSE-5** and request approval to implement such changes.

**TSE-7** The project owner shall provide the following Notice to Western prior to synchronizing the facility with the Western DSW Transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing, provide Western a letter stating the proposed date of

[1] Worst case conditions for the foundations would include for instance, a dead-end or angle pole.

synchronization; and

2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the Western Outage Coordination Department.

**Verification:** The project owner shall provide copies of the Western letter to the CPM when it is sent to Western one week prior to initial synchronization with the grid. The project owner shall contact the Western Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with Western shall be provided electronically to the CPM one day before synchronizing the facility with the Western DSW transmission system for the first time.

**TSE-8** The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

**Verification:** Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, and applicable interconnection standards, NEC, related industry standards, and these conditions shall be provided concurrently.

b) An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan".

c) A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.

## E. TRANSMISSION LINE SAFETY AND NUISANCE

The Rice Solar Energy Project's transmission lines must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This portion of the Decision assesses the potential for the generation tie line and the extension of the distribution line to create the various impacts mentioned below, as well as whether mitigation measures are required to reduce any adverse effects to insignificant levels. The analysis of record takes into account both the physical presence of the lines and the physical interactions of the electric and magnetic fields. The evidence was undisputed. (10/29/10 RT 21; Exs. 1, § 3.3; 3; 48; 200, pp. 6.11-1 – 6.11-19.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The transmission line facilities associated with this project[1] consist of:

- A new, single-circuit 161/230-kV overhead transmission line extending 10 miles southeast from the on-site project switchyard to the proposed Rice interconnection substation adjacent to Western's Parker-Blythe #2 transmission line ;
- The project's on-site 161/230-kV switchyard from which the conductors will extend to the Western connection substation; and
- A 1.1-mile extension of the existing SCE 12-kV distribution line. (Ex. 200, p. 6.11-5.)

Both lines cross undisturbed, sparsely populated desert land, with no nearby residences. (Ex. 200, p. 6.11-1.) The project is located in the unincorporated eastern portion of Riverside County, south of State Route 62. The nearest town with a significant population is Parker, Arizona, about 32 miles to the east. (Ex. 200, p. 6.11-4.) The nearest residential area is Vidal Junction, approximately 17 miles to the northeast. (Ex. 200, p. 6.11-5.)

The tie line will be supported by steel monopole towers up to 115 feet tall, spaced approximately 600 feet apart. The 1.1 mile extension of the 12-kV distribution line will conform with SCE design guidelines. (*Id*.)

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[1] The Rice Project's generation tie line will interconnect to the Western Area Power Administration's (Western) grid. Accordingly, the tie line will be constructed, operated, and maintained in concert with Western's criteria. The extension of the existing distribution line must comply with Southern California Edison's (SCE) guidelines for line safety and field management. (Ex. 200, pp. 6.11-1 - 6.11-2, 6.11-4 – 6.11.5.)

Potential impacts involve aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and electric and magnetic field (EMF) exposure. (Ex. 200, pp. 6.11-1 - 6.11-2.) The evidence conclusively establishes the following:

- *Aviation Safety*

Hazards to area aircraft can arise from the potential for collision in the navigable airspace. The project site, however, is not located near a major commercial aviation center. The nearest airfields are the Blythe Airport, approximately 30 miles to the south, the Avi Sequilla Airport 32 miles to the east, and the La Paz Regional Hospital Heliport in Parker, Arizona. The evidence shows that the project is sufficiently distant so as not to pose a hazard to any of these facilities. Moreover, the 115 foot maximum height of the line's support structures is well below the 200-foot height threshold of concern for the Federal Aviation Administration (FAA). The only project structure above the 200 foot aviation hazard threshold is the 653 foot high solar receiver tower. This tower will have aircraft warning lights as required by the FAA. Thus, the project is unlikely to pose a hazard to users of the airports in the vicinity. (Ex. 200, p. 6.11-6.)

- *Interference with Radio-Frequency Communication*

This potential impact is one of the indirect effects of line operation and is produced by the physical interactions of the electric fields. It arises from corona discharge and is primarily a concern for lines larger than 345-kV. The project's 230-kV generation line and the 12-kV distribution line will be built and maintained according to standard Western and SCE practices aimed at minimizing any interference. Moreover, there are no nearby residential receptors. Thus, no radio frequency interference or related complaints are likely. (Ex. 200, pp. 6.11-6 - 6.11-7.)

- *Audible Noise*

This is typically perceived as a characteristic crackling, hissing, or frying sound or hum, especially in wet weather.[2] The noise level depends upon the strength of the line's electric field, and is a concern mainly from lines of 345-kV or higher. It

[2] In fair weather, audible noise from modern transmission lines is generally indistinguishable from background noise at the edge of a right-of-way 100 or more feet wide. (Ex. 200, p. 6.11-7.)

can be limited through design, construction, and maintenance practices. The project's tie line (230-kV) will embody a low corona design to minimize field strengths. The evidence shows that the lines are not expected to add significantly to the current background noise levels.[3] (Ex. 200, p. 6.11-7.)

- *Hazardous Shocks*

These could result from direct or indirect contact between an individual and an energized line. Adherence to minimum national safe operating clearances in areas where the lines might be accessible to the public assures safety. Compliance with the CPUC's GO-95, as required in Condition of Certification **TLSN-1**, will ensure that adequate measures are implemented to minimize this potential impact. (Ex. 200, p. 6.11-8.)

- *Nuisance Shocks*

Nuisance shocks are typically caused by direct contact with metal objects electrically charged by fields from an energized line. They are effectively minimized through grounding procedures for all metallic objects within the right-of-way as specified by the National Electrical Safety Code (NESC) as well as the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). This is required in Condition of Certification **TLSN-4**. (*Id.*)

- *Fire Hazards*

Fire can be caused by sparks from a line's conductors or by direct contact between the line and nearby trees or other combustible objects. Western's and SCE's standard fire prevention and suppression measures, and compliance with the clearance-related aspects of GO-95 as required in Condition of Certification **TLSN-3**, ensure that appropriate fire prevention measures are implemented for both project-related lines. (Ex. 200, pp. 6.11-7 – 6.11-8.)

- *Exposure to Electric and Magnetic Fields*

Electric and magnetic fields (EMF) occur whenever electricity flows. The possibility of deleterious health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines. Due to the

[3] Overall project noise levels are discussed in the **Noise** section of this Decision.

present scientific uncertainty regarding these potential health effects, CPUC policy requires reduction of EMF in the design, construction, and maintenance of new or modified lines, if feasible, without affecting the safety, efficiency, reliability, and maintainability of the transmission grid. (Ex. 200, pp. 6.11-8 - 6.11-9.)

The CPUC requires each new or modified transmission line in California to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved. EMF produced by new lines must be similar to the fields of comparable lines in that service area.[4] To comply with requirements for EMF management, specific field strength-reducing measures will be incorporated into the project lines' design and include:

- Increasing the distance between the conductors and the ground to an optimal level;
- Reducing the spacing between the conductors to an optimal level;
- Minimizing the current in the line; and
- Arranging current flow to maximize the cancellation effects from the interaction of conductor fields. (Ex. 200, pp. 6.11-9 - 6.11-11.)

The evidence shows that Applicant presented the design and operational measures necessary to maintain the intensity of fields from the proposed generation tie line within the levels established for similar Western lines as required by current field management LORS. The field strengths of most concern in this regard will be encountered at the edge of the line's right-of-way. These field intensities will depend upon the effectiveness of the field-reducing measures applied. Although the evidence indicates that the field strengths will likely be similar to those of other Western and SCE lines, we nevertheless require actual field strength measurements in Condition **TLSN-2.** (Ex. 200, p. 6.11-11.)

Since there are no residences in the vicinity of the project's lines, there will not be the long-term human residential EMF exposures associated with the health concerns of recent years. The only project-related EMF exposures of potential significance are the short-term exposures of plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the immediate vicinity of the

[4] Designing the generation tie line according to Western's field strength reducing guidelines, and the distribution line extension according to SCE criteria, constitutes compliance with CPUC requirements for EMF management. (Ex. 200, p. 6.11-10.)

lines. The evidence shows that these types of exposures are not significantly related to an adverse health effect. (Ex. 200, pp. 6.11-9 – 6.11-10.)

Overall, the evidence shows that the Rice Project's lines will not cause or contribute to an adverse cumulative impact. (Ex. 200, pp. 6.11-16.) Moreover, the generation tie line and the extension of the distribution line will be designed, constructed, operated, and maintained in compliance with applicable LORS. Implementation of the Conditions of Certification will ensure that any impacts are reduced to less than significant levels. (Ex. 200, p. 6.11-18.)

Finally, the evidence addresses the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR 62/Rice Valley Road Tie Line Alternative, and the various No Project Alternatives in regard to this topic area. None of the Alternatives would substantially alter the level of impacts posed by the project. The Rice Project does not create significant adverse impacts in this topic area. Therefore, it is not necessary to consider any of the project's Alternatives as a means of reducing impacts to below a level of significance. (Ex. 200, pp. 6.11-12 - 6.11-16.)

## FINDINGS OF FACT

Based on the evidence of record, we make the following findings:

1. The Rice Solar Energy Project's transmission facilities consist of an on-site 161/230-kV switchyard, a 10 mile long 161/230-kV single-circuit overhead transmission tie line extending from the switchyard to the proposed interconnection substation adjacent to Western's Parker-Blythe #2 transmission line, and a 1.1 mile extension of the existing SCE 12-kV distribution line.

2. The evidentiary record includes analyses of potential impacts from the project's generation tie line and distribution line extension involving aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.

3. The lines cross uninhabited desert land and there are no residences along the routes of the project's new generation tie line or the distribution line extension.

4. The available scientific evidence does not establish that EMF poses a significant health hazard to humans.

5. The electric and magnetic fields generated by the project's generation tie line and the distribution line will be managed to the extent Western and the CPUC consider appropriate, based on available health effects information.

6. The project's generation tie line and distribution line extension will comply with existing LORS for public health and safety.

7. The project's generation tie line will and distribution line extension incorporate standard EMF-reducing measures used by Western and SCE respectively.

8. The project owner will provide field intensity measurements before and after line energization to assess EMF contributions from the project-related current flow.

9. Neither the new generation tie line nor the extended distribution line will result in significant adverse environmental impacts to public health and safety or cause significant direct, indirect, or cumulative impacts as a result of aviation collisions, radio frequency communication interference, fire danger, nuisance or hazardous shocks, or electric and magnetic field exposure.

10. The record addresses the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR 62/Rice Valley Road Tie Line Alternative, and the various No Project Alternatives in regard to this topic area.

11. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

## CONCLUSIONS OF LAW

1. Implementation of the Conditions of Certification, below, will ensure that the Rice Solar Energy Project's transmission tie line and the extension of the distribution line comply with all applicable laws, ordinances, regulations, and standards relating to **Transmission Line Safety and Nuisance** as identified in the pertinent portion of **Appendix A** of this Decision.

2. Neither the Rice Project's transmission tie line nor the extension of the distribution line will create a significant direct, indirect, or cumulative impact due to safety and nuisance factors.

## CONDITIONS OF CERTIFICATION

**TLSN-1** The project owner shall construct the extension of the existing 12-kV distribution line according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and SCE's EMF reduction guidelines. The project owner shall construct the proposed 161/230 kV generation tie line according to Western's EMF reduction guidelines.

**Verification:** At least 30 days before starting construction of the transmission lines or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California-registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the Condition.

**TLSN-2** The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields at the points of maximum intensity along the generation tie line and distribution line routes. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed no later than 6 months after the start of operations.

**Verification:** The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements.

**TLSN-3** The project owner shall ensure that the rights-of-way of the generation tie line and the distribution line are kept free of combustible material, as required under the provisions of section 4292 of the Public Resources Code and section 1250 of Title 14 of the California Code of Regulations.

**Verification:** During the first 5 years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the rights-of-way and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

**TLSN-4** The project owner shall ensure that all permanent metallic objects within the rights-of-way of the project-related lines are grounded according to industry standards regardless of ownership.

**Verification:** At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this Condition.

# V. PUBLIC HEALTH AND SAFETY

## A. GREENHOUSE GAS (GHG) EMISSIONS

### 1. Introduction and Summary

There is scientific consensus that climate change is occurring and that human activity contributes in some measure to that change. Man-made emissions of greenhouse gases, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. Indeed, the California Legislature has found that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Health & Saf. Code, § 38501.)

The Rice Solar Energy Project (RSEP), as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the California Air Resources Board (CARB) for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health & Saf. Code, § 38500 et seq.) However, the project may be subject to future reporting requirements and GHG reductions or trading requirements as these regulations become more fully developed and implemented.

SB 1368, enacted in 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibits California utilities from entering into long-term commitments with any base load facilities that exceed the Emission Performance Standard of 0.500 metric tonnes $CO_2$ per megawatt-hour (1,100 pounds $CO_2$/MWh). Specifically, the SB 1368 Emission Performance Standard (EPS) applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or more, including contracts with power plants located outside of California. If a project, instate or out of state, plans to sell base load electricity to a California utility that utility will have to demonstrate that the project meets the EPS. *Base load* units are defined as units that operate at a capacity factor higher than 60 percent. As a renewable electricity generating facility, RSEP is determined by rule to be compliant with the SB 1368 EPS.

The generation of electricity using fossil fuels, even in a back-up generator at a thermal solar plant, produces air emissions known as greenhouse gases in

addition to the criteria air pollutants that have been traditionally regulated under the federal and state Clean Air Acts. California is actively pursuing policies to reduce GHG emissions that include adding non-GHG emitting renewable generation resources to the system.

The regulated greenhouse gases are carbon dioxide ($CO_2$), nitrous oxide ($N_2O$), methane ($CH_4$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons (HFC), and perflurocarbons (PFC). $CO_2$ emissions are far and away the most common of these emissions; as a result, GHG emissions are often expressed in terms of "metric tons of $CO_2$-equivalent" (MTCO2E) for simplicity.

Since the impact of the GHG emissions from a power plant's operation has global effects, those impacts should be assessed not only by analysis of the plant's emissions, but also in the context of the operation of the entire electricity system of which the plant is an integrated part. Furthermore, the impact of the GHG emissions from a power plant's operation should be analyzed in the context of applicable GHG laws and policies, such as AB 32.

In this part of the Decision we determine that:

- RSEP's construction and operation GHG emissions will be insignificant.
- From a policy and regulatory standpoint, the GHG emissions from a power plant's operation should be assessed in the context of the state's GHG laws and policies, such as AB 32; and
- RSEP operation will be consistent with the state's GHG policies and will help achieve the state's GHG goals by causing a decrease in overall electricity system GHG emissions and fostering the addition of renewable generation into the system, which will further reduce system GHG emissions.

As a result we find that the RSEP's GHG emissions will comply with all applicable laws, ordinances, regulations, and standards (LORS) identified below in **Greenhouse Gas Table 1** and will not result in any significant environmental impacts. We also find that the project is consistent with California's ambitious GHG goals and policies.

The evidence on this topic was undisputed. (10/29/10 RT 21, 51-60, 128; Exs. 1, pp. 5.1-8 – 5.1-9, 5.1-17; 200, § 6.1- Appendix AIR-1, 206, 206A)

## 2. Policy and Regulatory Framework

We begin with the observation as stated by the Legislature 35 years ago, "it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection." (Pub. Res. Code, § 25001.) Today, as a result of legislation, the most recent addition to "environmental quality protection" is the reduction of GHG emissions. Several laws and statements of policy are applicable as shown by **Greenhouse Gas Table 1** below.

**Greenhouse Gas Table 1**
**Laws, Ordinances, Regulations, and Standards (LORS)**

| Applicable Law | Description |
|---|---|
| **Federal** | |
| 40 Code of Federal Regulations (CFR) Part 98 | This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of $CO_2$ equivalent emissions per year. |
| **State** | |
| California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.) | This act requires the California Air Resources Board (ARB) to enact standards that will reduce GHG emission to 1990 levels by 2020. Electricity production facilities will be regulated by the ARB. |
| California Code of Regulations, tit. 17, Subchapter 10, Article 2, sections 95100 et. seq. | These ARB regulations implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.) |
| Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009 | The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 $MTCO_2$/MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs $CO_2$/MWh). |

### a. AB 32

The foundation of California's GHG policy is the California Global Warming Solutions Act of 2006. [Assembly Bill 32, codified in Health & Saf. Code, § 38560 et seq. (hereinafter AB 32).] AB 32 requires CARB to adopt regulations that will reduce statewide GHG emissions, by the year 2010, to the level of statewide GHG emissions that existed in 1990. Gubernatorial Executive Order S-3-05

(June 1, 2005) requires a further reduction, to a level 80 percent below the 1990 GHG emissions, by the year 2030.

Along with all other regulatory agencies in California, the Energy Commission recognizes that meeting the AB 32 goals is vital to the state's economic and environmental health. While AB 32 goals have yet to be translated into regulations that limit GHG emissions from generating facilities, the scoping plan adopted by ARB relies heavily on cost-effective energy efficiency and demand response, renewable energy, and prioritization of generation resources to achieve significant reductions of emissions in the electricity sector by 2020. Even more dramatic reductions in electricity sector emissions would likely be required to meet California's 2050 greenhouse gas reduction goal. Facilities under our jurisdiction, such as the RSEP, must be consistent with these policies.[1]

b. Renewable Portfolio Standard

California statutory law requires the state's utilities to be obtaining at least 20 percent of their electricity supplies from renewable sources by the year 2010. (Pub. Util. Code, § 399.11 et seq.) Gubernatorial Executive Orders increase the requirement to 33 percent and require CARB to adopt regulations to achieve the goal. [Governor's Exec. Orders Nos. S-21-09 (Sept. 15, 2009), S-14-08 (Nov. 17, 2008).]

c. Emissions Performance Standard

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into long-term commitments with any base load facilities that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of $CO_2$ per megawatt-hour (this is the equivalent of 1100 pounds $CO_2$/MWh). (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) Currently, the EPS is the only LORS that has the effect of limiting power plant GHG emissions. RSEP, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2903 [b][1]).

[1] Of course, RSEP and all other stationary sources will need to comply with any applicable GHG LORS that take effect in the future.

d. Loading Order

In 2003 the Energy Commission and the CPUC agreed on a "loading order" for meeting electricity needs. The first energy resources that should be utilized are energy efficiency and demand response (at the maximum level that is feasible and cost-effective), followed by renewables and distributed generation, combined heat and power (also known as cogeneration), and finally the most efficient available fossil fuel resources and infrastructure development.[2] CARB's AB 32 Scoping Plan reflects these policy preferences. (California Air Resources Board, *Climate Change Scoping Plan*, December 2008.)

We now consider whether, and how well, RSEP would advance these goals and policies. We begin by reviewing the project's emissions both during construction and during operation.

3. GHG Emissions During RSEP Construction and Salt Commissioning Facility

Construction of industrial facilities such as power plants requires coordination of numerous equipment and personnel. The concentrated on-site activities result in short-term, unavoidable increases in vehicle and equipment emissions that include greenhouse gases. RSEP development is expected to occur in three phases. The first phase – the construction phase - is expected to last approximately 30 months and involves construction of permanent facilities that include the heliostat field, liquid salt tower receiver, and power generating block systems. This construction phase also encompasses salt melting and conditioning activities. (Ex. 1, pp. 5.1-9 – 5.1-14.)

Short term emissions will be generated during construction. **Greenhouse Gas Table 2** below show the Applicant's greenhouse gas emissions estimate for the entire construction period.

[2] California Energy Commission 2008, *2008 Integrated Energy Policy Report Update*, (IEPR) (CEC-100-2008-008-CMF.)

**Greenhouse Gas Table 2**
**Estimated Rice Solar Construction/Commissioning Greenhouse Gas Emissions**

| **Construction Element** | **CO2-Equivalent (MTCO2E) [a,b]** |
|---|---|
| On-Site Construction Equipment | 6,333 |
| On-Site Motor Vehicles | 104 |
| Off-Site Motor Vehicles | 9,116 |
| Transmission Line Construction Equipment | 599 |
| Construction Subtotal | 16,152 |
| **Salt Conditioning Element** | |
| Salt Melting | 9,489 |
| Temporary Salt Heater | 1,374 |
| Temporary Electrical Heating Indirect Emissions | 1,595 |
| Conditioning Subtotal | 12,458 |
| **Construction and Salt Conditioning Total** | **28,610** |

**SOURCE: EX. 200, P. 6.1-86.**
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms
[b] The vast majority of the CO2E emissions, over 99%, are $CO_2$ from these combustion sources.

There are no adopted, enforceable federal or state LORS applicable to RSEP construction emissions of GHG. Nevertheless, there is guidance from regulatory agencies on how the significance of such emissions should be assessed. For example, the most recent guidance from CARB staff recommends a "best practices" threshold for construction emissions. [CARB, Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (Oct. 24, 2008)]. Such an approach is also recommended on an interim basis, or proposed, by major local air districts.

We understand that "best practices" includes the implementation of all feasible methods to control construction-related GHG emissions. As the "best practices" approach is currently recommended by the state agency primarily responsible not only for air quality standards but also for GHG regulation, we will use it here to assess the GHG emissions from RSEP construction.

To limit vehicle emissions of both criteria pollutants and GHG during construction, RSEP will use: (1) operational measures, such as limiting vehicle idling time and shutting down equipment when not in use; (2) regular preventive maintenance to prevent emission increases due to vehicular engine problems; and (3) use of low-emitting diesel engines meeting federal emissions standards for construction equipment, whenever available. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-89.)

Control measures that we have adopted elsewhere in this Decision to address criteria pollutant emissions would further minimize greenhouse gas emissions to the extent feasible. Also, the requirement that the owner use newer construction equipment will increase fuel efficiency and minimize tailpipe emissions. (See, e.g. Condition of Certification **AQ-SC5**.)

We find that the measures described above to directly and indirectly limit the emission of GHGs during the construction of RSEP are in accordance with current best practices. We therefore find that the evidence shows that the GHG emissions from construction activities would not exceed the level of significance.

4. Direct/Indirect Operation Impacts and Mitigation

a. Anticipated Emissions

Solar energy is the primary fuel for the RSEP project, which is greenhouse gas free. Although RSEP's solar power generation will not consume fossil fuels, the project will include the limited use of two- diesel-powered emergency generators and two diesel-powered emergency fire pumps as well as gasoline and diesel fuel in the maintenance vehicles, off-site delivery vehicles and staff and employee vehicles. Additional GHG emission sources for this proposed project are $SF_6$ from electrical equipment leakage and leakage of hydro fluorocarbons and perfluorocarbons from refrigeration and fire suppression equipment, respectively. (Exs. 1, pp. 5.1-14 – 5.1-16, 200, Appendix Air Quality AIR-1, p. 6.1-87.)

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Operations GHG emissions are shown as follows in **Greenhouse Gas Table 3**.

**Greenhouse Gas Table 3**
**Estimated Rice Solar Operating Greenhouse Gas Emissions**

| | Annual $CO_2$-Equivalent (MTCO2E)[a] |
|---|---|
| On-site Stationary Equipment Combustion [b] | 129 |
| Heliostat Washing Trucks [b] | 16 |
| Employee Commute [b] | 640 |
| Material Deliveries [b] | 172 |
| Equipment Leakage ($SF_6$) | 30 |
| Equipment Leakage (HFC -134a) | 4 |
| Equipment Leakage (PFC-14) | 3 |
| **Total Project GHG Emissions –** MTCO2E [b] | **994** |
| Facility Net MWh per year [c] | 450,000 |
| Facility GHG Performance (MTCO2E/MWh) | 0.0022 |

Source: Ex. 200, p. 6.1-87.
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
[b] The vast majority of the CO2E emissions, over 99%, are $CO_2$ from these emission sources.
[c] This represents net MWh including the reduction in total net generation from direct parasitic load and the use of grid power, where the net GHG emissions for grid power use is also assumed to the netted out by the reduction in gross facility MWh generation needed to cover the grid power use.

RSEP is estimated to emit 994 metric tonnes of $CO_2$-equivalent GHG emissions per year directly from primary and secondary emission sources. RSEP, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Cal. Code Regs., tit. 20, Chapter 11, § 2903 [b][1]). Moreover, RSEP has an estimated GHG emission rate of 0.0022 MTCO2E/MWh, which is well below the Greenhouse Gas Emission Performance Standard of 0.500 MTCO2/MWh. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-88.)

b. Assessment of Operational Impacts

As we have previously noted, a project's GHG emissions have global impacts. While it may be true that in general, when an agency conducts a CEQA analysis of a proposed project, it does not need to analyze how the operation of the proposed project is going to affect the entire system of projects in a large multi-state region, analysis of the impacts of GHG emissions from power plants requires consideration of the project's impacts on the entire electricity system.

California's electricity system – which is actually part of a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex.

Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity is produced and consumed instantaneously, and will continue to be until large-scale electricity storage technologies are available, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators. (*Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications,* CEC-700-2009-004, pp. 20 to 22.) [3] (Hereinafter referred to as "Committee CEQA Guidance")

The California Independent System Operator (CAISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus the CAISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), when a power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated. Due to the integrated nature of the electrical grid, the operational plant and the displaced plant may be hundreds of miles apart. (Committee CEQA Guidance.) Because one plant's operation could affect GHG emissions hundreds of miles away, the necessity of assessing their operational GHG emissions on a system-wide basis becomes clear.

As California moves towards an increased reliance on renewable energy by implementing the Renewables Portfolio Standard (RPS), non-renewable energy resources will be displaced. These reductions in non-renewable energy, shown in **Greenhouse Gas Table 4**, are targeted to be as much as 36,500 GWh. These assumptions are conservative in that the forecasted growth in electricity retail sales assumes that the impacts of planned increases in expenditures on (uncommitted) energy efficiency are already embodied in the current retail sales forecast[4]. Staff estimates that as much as 18,000 GWh of additional savings due to uncommitted energy efficiency program may be forthcoming.[5] This would

[3] The report was issued in March 2009 and is found on the Commission website at: **http://www.energy.ca.gov/2009publications/CEC-700-2009-004/CEC-700-2009-004.PDF**

[4] Energy efficiency savings are already represented in the current Energy Commission demand forecast adopted December 2009. (Ex. 200, p. 6.1-90.)

[5] See *Incremental Impacts of Energy Efficiency Policy Initiatives Relative to the 2009 Integrated Energy Policy Report Adopted Demand Forecast* (CEC-200-2010-001-D, January, 2010), page 2.

reduce non-renewable energy needs by a further 12,000 GWh given a 33 percent RPS. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-90.)

**Greenhouse Gas Table 4**
**Estimated Changes in Non-Renewable Energy Potentially Needed to Meet California Loads, 2008-2020**

| **California Electricity Supply** | **Annual GWh** | |
|---|---|---|
| Statewide Retail Sales, 2008, estimated [a] | 264,794 | |
| Statewide Retail Sales, 2020, forecast [a] | 289,697 | |
| Growth in Retail Sales, 2008-20 | 24,903 | |
| Growth in Net Energy for Load [b] | 29,840 | |
| **California Renewable Electricity** | **GWh @ 20% RPS** | **GWh @ 33% RPS** |
| Renewable Energy Requirements, 2020 [c] | 57,939 | 95,600 |
| Current Renewable Energy, 2008 | 29,174 | |
| Change in Renewable Energy-2008 to 2020 [c] | 28,765 | 66,426 |
| Resulting Change in Non-Renewable Energy [d] | 176 | (36,586) |

Source: Ex. 200, p. 6.1-90.
Notes:
a. 2009 IPER Demand Forecast, Form 1.1c. Excludes pumping loads for entities that do not have an RPS.
b. 2009 IEPR Demand Forecast, Form 1.5a.
c. RPS requirements are a percentage of retail sales.

RSEP will be capable of annually providing 450 GWh of renewable generation energy to replace resources that are or will likely be precluded from serving California loads. State policies, including GHG goals, are discouraging or prohibiting new contracts and new investments in high GHG-emitting facilities such as coal-fired generation, generation that relies on water for once-through cooling, and aging power plants. Some of the existing plants that are likely to require substantial capital investments to continue operation in light of these policies may be unlikely to undertake the investments and will retire or be replaced. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-90.)

High GHG-emitting resources, such as coal, are effectively prohibited from entering into new long-term contracts for California electricity deliveries as a result of the EPS. Between now and 2020, more than 18,000 GWh of energy

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Table 1 indicates that additional conservation for the three investor-owned utilities may be as high as 14,374 GWh. Increasing this value by 25 percent to account for the state's publicly-owned utilities yields a total reduction of 17,967 GWh.

procured by California utilities under these contracts will have to reduce GHG emissions or be replaced; these contracts are presented below in **Greenhouse Gas Table 5**. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-91.)

**Greenhouse Gas Table 5**
**Expiring Long-term Contracts with Coal-fired Generation 2009 – 2020**

| Utility | Facility [a] | Contract Expiration | Annual GWh Delivered to CA |
|---|---|---|---|
| PG&E, SCE | Miscellaneous In-state Qualifying Facilities [a] | 2009-2019 | 4,086 |
| LADWP | Intermountain | 2009-2013 | 3,163 [b] |
| City of Riverside | Bonanza, Hunter | 2010 | 385 |
| Department of Water Resources | Reid Gardner | 2013 [c] | 1,211 |
| SDG&E | Boardman | 2013 | 555 |
| SCE | Four Corners | 2016 | 4,920 |
| Turlock Irrigation District | Boardman | 2018 | 370 |
| LADWP | Navajo | 2019 | 3,832 |
| | | **TOTAL** | **18,522** |

Source:. Source: Ex. 200, p. 6.1-91.

Notes:

a. All facilities are located out-of-state except for the Miscellaneous In-state Qualifying Facilities.
b. Estimated annual reduction in energy provided to LADWP by Utah utilities from their entitlement by 2013.
c. Contract not subject to Emission Performance Standard, but the Department of Water Resources has stated its intention not to renew or extend.

This represents almost half of the energy associated with California utility contracts with coal-fired resources that will expire by 2030. If the State enacts a carbon adder[6], all the coal contracts (including those in **Greenhouse Gas Table 5**, which expire by 2020, and other contracts that expire beyond 2020 and are not shown in the Table) may be retired at an accelerated rate as coal-fired energy becomes economically uncompetitive due to the carbon adder or the capital needed to capture and sequester the carbon emissions. Also shown are the approximate 500 MW of in-state coal and petroleum coke-fired capacity that may be unlikely to contract with California utilities for baseload energy due to the SB 1368 EPS. As these contracts expire, new and existing generation resources will replace the lost energy and capacity. Some will come from renewable generation

[6] A carbon adder or carbon tax is a specific value added to the cost of a project for per ton of associated carbon or carbon dioxide emissions. Because it is based on, but not limited to, actual operations and emission and can be trued up at year end, it is considered a simple mechanism to assign environmental costs to a project.

such as this proposed project; some will come from new and existing natural gas fired generation. All of these new facilities will have substantially lower GHG emissions rates than coal and petroleum coke-fired facilities which typically average about 1.0 $MTCO_2$/MWh without carbon capture and sequestration. Thus, new renewable facilities will result in a net reduction in GHG emissions from the California electricity sector. (Ex. 200, Appendix Air Quality AIR-1, pp. 6.1-91 - 6.1-92.)

The State Water Resources Control Board (SWRCB) has proposed major changes to once-through cooling (OTC) units, shown in **Greenhouse Gas Table 6** below, which would likely require extensive capital for retrofit, retirement, or substantial curtailment of dozens of generating units. In 2008, these units collectively produced almost 58,000 GWh. While the more recently built OTC facilities may well install dry or wet cooling towers and continue to operate, the aging OTC plants are not likely to be retrofit to use dry or wet cooling towers without the power generation also being retrofit or replaced to use a more efficient and lower GHG emitting combined cycle gas turbine technology. Most of these existing OTC units operate at low capacity factors, suggesting a limited ability to compete in the current electricity market. Although the timing would be uncertain, new resources would out-compete aging plants and would displace the energy provided by OTC facilities and likely accelerate their retirements.

Any additional costs associated with complying with the SWRCB regulation would be amortized over a limited revenue stream today and into the foreseeable future. Their energy and much of their dispatchable, load-following capability will have to be replaced. These units constitute over 15,000 MW of merchant capacity and 17,800 GWh of merchant energy. Of this, much but not all of the capacity and energy are in local reliability areas, requiring a large share of replacement capacity – absent transmission upgrades – to locations in the same local reliability area. **Greenhouse Gas Table 6** provides a summary of the utility and merchant energy supplies affected by the OTC regulations.

New renewable generation resources will emit substantially less GHG emissions on average than other energy generation sources. Existing aging and OTC natural gas facility generation typically averages 0.6 to 0.7 $MTCO_2$/MWh, which is much less efficient, higher GHG emitting, than a renewable energy project like RSEP. A project like RSEP, located far from the coastal load pockets like the Los Angeles Local Reliability Area (LRA), would more likely provide energy support to facilitate the retirement of some aging and/or OTC power plants, but would not likely provide any local capacity support at or near the coastal OTC

units. Regardless, due to its low greenhouse gas emissions, RSEP would serve to reduce GHG emissions from the electricity sector. (Ex. 200, Appendix Air Quality AIR-1, p. 6.1-92.)

**Greenhouse Gas Table 6**
**Aging and Once-Through Cooling Units: 2008 Capacity and Energy Output [a]**

| Plant, Unit Name | Owner | Local Reliability Area | Aging Plant? | Capacity (MW) | 2008 Energy Output (GWh) | GHG Emission Rate(MTCO2/MWh) |
|---|---|---|---|---|---|---|
| Diablo Canyon 1, 2 | Utility | None | No | 2,232 | 17,091 | Nuclear |
| San Onofre 2, 3 | Utility | L.A. Basin | No | 2,246 | 15,392 | Nuclear |
| Broadway 3 [b] | Utility | L.A. Basin | Yes | 75 | 90 | 0.648 |
| El Centro 3, 4 [b] | Utility | None | Yes | 132 | 238 | 0.814 |
| Grayson 3-5 [b] | Utility | LADWP | Yes | 108 | 150 | 0.799 |
| Grayson CC [b] | Utility | LADWP | Yes | 130 | 27 | 0.896 |
| Harbor CC | Utility | LADWP | No | 227 | 203 | 0.509 |
| Haynes 1, 2, 5, 6 | Utility | LADWP | Yes | 1,046 | 1,529 | 0.578 |
| Haynes CC | Utility | LADWP | No | 560 | 3,423 | 0.376 |
| Humboldt Bay 1, 2 [a] | Utility | Humboldt | Yes | 107 | 507 | 0.683 |
| Olive 1, 2 [b] | Utility | LADWP | Yes | 110 | 11 | 1.008 |
| Scattergood 1-3 | Utility | LADWP | Yes | 803 | 1,327 | 0.618 |
| **Utility-Owned** | | | | **7,776** | **39,988** | **0.693** |
| Alamitos 1-6 | Merchant | L.A. Basin | Yes | 1,970 | 2,533 | 0.661 |
| Contra Costa 6, 7 | Merchant | S.F. Bay | Yes | 680 | 160 | 0.615 |
| Coolwater 1-4 [b] | Merchant | None | Yes | 727 | 576 | 0.633 |
| El Segundo 3, 4 | Merchant | L.A. Basin | Yes | 670 | 508 | 0.576 |
| Encina 1-5 | Merchant | San Diego | Yes | 951 | 997 | 0.674 |
| Etiwanda 3, 4 [b] | Merchant | L.A. Basin | Yes | 666 | 848 | 0.631 |
| Huntington Beach 1, 2 | Merchant | L.A. Basin | Yes | 430 | 916 | 0.591 |
| Huntington Beach 3, 4 | Merchant | L.A. Basin | No | 450 | 620 | 0.563 |
| Mandalay 1, 2 | Merchant | Ventura | Yes | 436 | 597 | 0.528 |
| Morro Bay 3, 4 | Merchant | None | Yes | 600 | 83 | 0.524 |
| Moss Landing 6, 7 | Merchant | None | Yes | 1,404 | 1,375 | 0.661 |
| Moss Landing 1, 2 | Merchant | None | No | 1,080 | 5,791 | 0.378 |
| Ormond Beach 1, 2 | Merchant | Ventura | Yes | 1,612 | 783 | 0.573 |
| Pittsburg 5-7 | Merchant | S.F. Bay | Yes | 1,332 | 180 | 0.673 |
| Potrero 3 | Merchant | S.F. Bay | Yes | 207 | 530 | 0.587 |
| Redondo Beach 5-8 | Merchant | L.A. Basin | Yes | 1,343 | 317 | 0.810 |
| South Bay 1-4 | Merchant | San Diego | Yes | 696 | 1,015 | 0.611 |
| **Merchant-Owned** | | | | **15,254** | **17,828** | **0.605** |
| **Total In-State OTC** | | | | **23,030** | **57,817** | |

Source: Source: Ex. 200, p. 6.1-93.

a. OTC Humboldt Bay Units 1 and 2 are included in this list. They must retire in 2010 when the new Humboldt Bay Generating Station (not ocean-cooled), currently under construction, enters commercial operation.
b. Units are aging but are not OTC.

The proposed RSEP promotes the state's efforts to move towards a high-renewable, low-GHG electricity system, and, therefore, reduce the amount of natural gas used by electricity generation and greenhouse gas emissions. Its use of solar power, resultant limited GHG emissions, and likely replacement of older existing plant capacity, furthers the State's strategy to promote generation system efficiency and reduce fossil fuel use and GHG emissions.

Net GHG emissions for the integrated electric system will decline when new renewable power plants are added to: (1) move renewable generation towards the 33 percent target; (2) improve the overall efficiency, or GHG emission rate, of the electric system; or (3) serve load growth or capacity needs more efficiently, or with fewer GHG emissions. We find that RSEP furthers the state's progress toward achieving these important goals and is consistent with State policies.

5. Cumulative Impacts on Greenhouse Gases

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts." (CEQA Guidelines § 15355.) "A cumulative impact consists of an impact that is created as a result of a combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines § 15130[a][1].) Such impacts may be relatively minor and incremental, yet still be significant because of the existing environmental background, particularly when one considers other closely related past, present, and reasonably foreseeable future projects.

GHG assessment is by its very nature a cumulative impact assessment. RSEP would emit a limited amount of greenhouse gases and, therefore, we have analyzed its potential cumulative impact in the context of its effect on the electricity system, resulting GHG emissions from the system, and existing GHG regulatory requirements and GHG energy policies. The evidence supports our finding that RSEP would not cause or contribute to a significant adverse cumulative impact on GHG, and would in fact result in a decrease in GHG from the generation of electricity in California. (Ex. 200, Appendix Air Quality AIR-1, pp. 6.1-97.)

6. Closure and Decommissioning

Eventually the facility would close, either at the end of its useful life or due to some unexpected situation such as a natural disaster or catastrophic facility breakdown. When the facility closes, all sources of air emissions would cease to

operate and thus impacts associated with those greenhouse gas emissions would no longer occur. The only other expected, albeit temporary, GHG emissions would be equipment exhaust (off-road and on-road) from dismantling activities. These activities would be of much a shorter duration than construction of the proposed project, equipment used to dismantle the facility are assumed to have lower comparative GHG emissions due to technology advancement, and would be required to be controlled in a manner at least equivalent to that required during construction. It is assumed that the beneficial GHG impacts of this facility, displacement of fossil fuel fired generation, would be replaced by the construction of newer more efficiency renewable energy or other low GHG generating technology facilities. Also, the recycling of the facility components (steel, concrete, etc.) could indirectly reduce GHG emissions from decommissioning activities. Therefore, while there would be temporary adverse greenhouse gas CEQA impacts during decommissioning we find that they are less than significant. (Ex. 200, Appendix Air Quality AIR-1, pp. 6.1-93 – 6.1-94.)

7. Mitigation Measures/Proposed Conditions of Certification

No Conditions of Certification related to Greenhouse Gas emissions are proposed. The project owner would comply with any future applicable GHG regulations formulated by the ARB, such as GHG reporting or emissions cap and trade markets.

## FINDINGS OF FACT

1. The GHG emissions from the RSEP project construction are likely to be 28,610 $MTCO_2$ equivalent ("MTCO2E") during the 30-month construction and commissioning period.

2. The RSEP will use best practices to control its construction-related GHG emissions.

3. Construction-related GHG emissions are less than significant if they are controlled with best practices.

4. State government has a responsibility to ensure a reliable electricity supply, consistent with environmental, economic, and health and safety goals.

5. California utilities are obligated to meet whatever demand exists from any and all customers.

6. Under SB 1368 and implementing regulations, California's electric utilities may not enter into long-term commitments with base load power plants with $CO_2$ emissions that exceed the Emissions Performance Standard ("EPS") of 0.500 $MTCO_2$ / MWh.

7. The maximum annual equivalent $CO_2$ emissions from RSEP operation will be nearly 1,000 MTCO2E, which constitutes an emissions performance factor of 0.0022 MTCO2E / MWh.

8. AB 32 requires CARB to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the 1990 level. Executive Order S-3-05 requires a further reduction, by the year 2050, to 80 percent below the 1990 level.

9. The California Renewable Portfolio Standard (RPS) requires the state's electric utilities obtain at least 33 percent of the power supplies from renewable sources, by the year 2020.

10. California's power supply loading order requires California utilities to obtain their power first from the implementation of all feasible and cost-effective energy efficiency and demand response, then from renewables and distributed generation, and finally from the most efficient available fossil-fired generation and infrastructure improvement.

11. There is no evidence in the record that construction or operation of RSEP will be inconsistent with the loading order.

12. When it operates, RSEP will displace generation from higher-GHG-emitting~~)~~ power plants.

13. RSEP will replace power from coal-fired power plants that will be unable to contract with California utilities under the SB 1368 EPS, and from once-through cooling power plants that must be retired.

14. RSEP operation will reduce overall GHG emissions from the electricity system.

15. The role of fossil fuel-fired generation will diminish as technology advances, coupled with efficiency and conservation measures, make round-the-clock availability of renewables generation feasible.

## CONCLUSIONS OF LAW

1. RSEP construction-related GHG emissions will not cause a significant adverse environmental impact.

2. RSEP operational GHG emissions will not cause a significant environmental impact.

3. As a renewable electricity generating facility, RSEP is determined by rule to be compliant with SB 1368.

4. RSEP operation will help California utilities meet their RPS obligations.

5. RSEP operation will be consistent with California's loading order for power supplies.

6. RSEP operation will foster the achievement of the GHG goals of AB 32 and Executive Order S-3-05.

7. The GHG emissions of any power plant must be assessed within the context of the entire electricity system on a case-by-case basis to ensure that the project will be consistent with applicable ~~the~~ goals and policies.

8. RSEP will:

    a) not increase the overall system heat rate;

    b) not interfere with generation from existing renewables or with the integration of new renewable generation; and

    c) have the ability to reduce system-wide GHG emissions.

## B. AIR QUALITY

Operation of the Rice Solar Energy Project (RSEP) will emit combustion products and use certain hazardous materials that could expose the general public and workers at the facility to potential health effects. This section on **Air Quality** evaluates whether the RSEP will likely comply with applicable state and federal air quality laws, ordinances, regulations, and standards (LORS), result in significant air quality impacts, and whether the proposed mitigation measures will likely reduce potential impacts to insignificant levels. The applicable LORS are identified in **Appendix A** to this Decision.

As required by CEQA, we specifically evaluate whether the RSEP will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing violation;
- Result in a cumulatively considerable net increase of any criteria pollutant that is already in nonattainment;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The Guidelines note that the significance criteria established by the applicable air district may be applied to the CEQA review.

The evidence describes the regulatory programs, standards, protocols, and analyses relevant to the project's air quality impacts. The evidence was undisputed. (10/29/10 RT 21, 51-60, 104, 126, 157, 128, 223-226; Exs, 1, § 5.1, Appendix 5.1A, 4 [1-35]; 6 [Air Quality]; 10 [Air Quality]; 11 [Air Quality]; 17 [Air Quality]; 24 [Air Quality]; 27 [Air Quality]; 33 [Air Quality]; 39 [Air Quality]; 200, §§ 5, 6.1.)

The criteria pollutants analyzed are nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), carbon monoxide (CO), ozone ($O_3$), and particulate matter (PM). Two subsets of particulate matter are: (1) inhalable particulate matter (less than or equal to 10 microns in diameter, or PM10) and (2) fine particulate matter (less than or equal to 2.5 microns in diameter, or PM2.5). Nitrogen oxides ($NO_X$, consisting primarily of nitric oxide [NO] and $NO_2$) and volatile organic compounds (VOC) emissions are analyzed because they readily react in the atmosphere as precursors to ozone and, to a lesser extent, particulate matter. Sulfur oxides ($SO_X$) are also

analyzed herein because they readily react in the atmosphere to form particulate matter and are major contributors to acid rain.

## SUMMARY AND DISCUSSION OF THE EVIDENCE

The federal Clean Air Act[1] and the California Clean Air Act[2] both require the establishment of standards for ambient concentrations of air pollutants, called ambient air quality standards (AAQS for the maximum allowable concentrations of "criteria air pollutants." The state AAQS, established by the California Air Resources Board (CARB), are typically more protective than the federal AAQS, which are established by the U.S. Environmental Protection Agency (EPA). (Ex. 200, pp. 6.1-5, 6.1-8.)

The criteria pollutants analyzed in this section include nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), carbon monoxide (CO), ozone ($O_3$), and particulate matter (PM). Two subsets of particulate matter are (1) inhalable particulate matter (less than or equal to 10 microns in diameter, or PM10) and (2) fine particulate matter (less than or equal to 2.5 microns in diameter, or PM2.5). Nitrogen oxides ($NO_X$, consisting primarily of nitric oxide [NO] and $NO_2$) and volatile organic compounds (VOC) emissions are analyzed because they readily react in the atmosphere as precursors to ozone and, to a lesser extent, particulate matter. Sulfur oxides ($SO_X$) are also analyzed herein because they readily react in the atmosphere to form particulate matter and are major contributors to acid rain. (Ex. 200, p. 6.1-2.)

The federal and state standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (one hour, for instance), or to a relatively lower average concentration over a longer period (8 hours, 24 hours, or 1 month). The state and federal AAQS are listed in **Air Quality Table 1,** below. (Ex. 200, p. 6.1-9.)

[1] Title 42, United States Code, section 7401 et seq.

[2] Health and Safety Code, section 40910 et seq.

**Air Quality Table 1**
**Federal and State Ambient Air Quality Standards**

| Pollutant | Averaging Time | Federal Standard | California Standard |
|---|---|---|---|
| Ozone ($O_3$) | 8 Hour | 0.075 ppm[a] (147 µg/m$^3$) | 0.070 ppm (137 µg/m$^3$) |
| | 1 Hour | — | 0.09 ppm (180 µg/m$^3$) |
| Carbon Monoxide (CO) | 8 Hour | 9 ppm (10 mg/m$^3$) | 9.0 ppm (10 mg/m$^3$) |
| | 1 Hour | 35 ppm (40 mg/m$^3$) | 20 ppm (23 mg/m$^3$) |
| Nitrogen Dioxide ($NO_2$) | Annual | 0.053 ppm (100 µg/m$^3$) | 0.03 ppm (57 µg/m$^3$) |
| | 1 Hour | 0.100 ppm (188 µg/m$^3$)[b] | 0.18 ppm (339 µg/m$^3$) |
| Sulfur Dioxide ($SO_2$) | Annual | 0.030 ppm (80 µg/m$^3$) | — |
| | 24 Hour | 0.14 ppm (365 µg/m$^3$) | 0.04 ppm (105 µg/m$^3$) |
| | 3 Hour | 0.5 ppm (1300 µg/m$^3$) | — |
| | 1 Hour | — | 0.25 ppm (655 µg/m$^3$) |
| Particulate Matter (PM10) | Annual | — | 20 µg/m$^3$ |
| | 24 Hour | 150 µg/m$^3$ | 50 µg/m$^3$ |
| Fine Particulate Matter (PM2.5) | Annual | 15 µg/m$^3$ | 12 µg/m$^3$ |
| | 24 Hour | 35 µg/m$^3$ | — |
| Sulfates ($SO_4$) | 24 Hour | — | 25 µg/m$^3$ |
| Lead | 30 Day Average | — | 1.5 µg/m$^3$ |
| | Calendar Quarter | 1.5 µg/m$^3$ | — |
| Hydrogen Sulfide ($H_2S$) | 1 Hour | — | 0.03 ppm (42 µg/m$^3$) |
| Vinyl Chloride (chloroethene) | 24 Hour | — | 0.01 ppm (26 µg/m$^3$) |
| Visibility Reducing Particulates | 8 Hour | — | In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent. |

Source: Ex. 200, p. 6.1-9

Notes:
[a] The 2008 standard is shown above, but as of September 16, 2009, this standard is being reconsidered. The 1997 8-hour standard is 0.08 ppm.
[b] The U.S. EPA is in the process of implementing this new standard, which became effective April 12, 2010. This standard is based on the 3-year average of the 98$^{th}$ percentile of the yearly distribution of the daily 1-hour maximum concentrations.

As shown by the table, the averaging times for the various air quality standards and the times over which they are measured, range from one-hour to annual averages. The standards are read as a concentration in parts per million (ppm), or as a weighted mass of material per a volume of air in milligrams or micrograms of pollutant in a cubic meter of air ($mg/m^3$ or $\mu g/m^3$, respectively.)

In general, an area is designated as "attainment" if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as "nonattainment" if concentration of a particular contaminant standard is violated. Where there is insufficient data to support designation as either attainment or nonattainment, the area can be designated as unclassified. An area could be attainment for one air contaminant while nonattainment for another, or attainment under the federal standard and nonattainment under the state standard for the same air contaminant. (Ex. 200, p. 6.1-9.)

1. Existing Air Quality

The RSEP is located in the Colorado Desert within the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). As shown in **Air Quality Table 2** below**,** the Riverside County portion of the MDAB is designated as nonattainment for state ozone and PM10 standards. (Ex. 200, p. 6.1-10.)

**Air Quality Table 2**
**Federal and State Attainment Status**
**Project Site Area within Riverside County**

| Pollutant | Attainment Status [a] | |
|---|---|---|
| | Federal | State |
| Ozone | Unclassified/Attainment [b] | Moderate Nonattainment |
| CO | Unclassified/Attainment | Unclassified [b] |
| $NO_2$ | Attainment [c] | Attainment |
| $SO_2$ | Attainment | Attainment |
| PM10 | Unclassified [b] | Nonattainment |
| PM2.5 | Unclassified/Attainment | Unclassified |

Source: Ex. 200, p. 6.1-10

[a] Unclassified is treated the same as Attainment for regulatory purposes.
[b] Unclassified/Attainment status for the project site, not the entire MDAB.
[c] Attainment status for the new federal 1-hour $NO_2$ standard is scheduled to be determined by January 2012.

The evidence describes in detail the composition and significance of each of the attainment and nonattainment criteria pollutants. (Exs. 1, pp. 5.1-3 – 5.1-7; 200, pp. 6.1-10 – 6.1-15.)

2. MDAQMD's Final Determination of Compliance

MDAQMD released its Final Determination of Compliance about July 30, 2010, stating that project is expected to comply with applicable District rules, which incorporate state and federal requirements. (Exs. 206, 206A.) MDAQMD's permit conditions for the project are specified in the FDOC and included in this Decision. (Cal. Code. Regs., tit. 20, §§ 1744.5, 1752.3.) See Conditions **AQ- 1** through **AQ-29** and **AQ-T1** through **AQ-T43** below.

3. Ambient Air Quality Baseline

As shown below in **Air Quality Table 3**, Staff established established a baseline for evaluating the modeling results and analyses submitted by Staff and the Applicant. (Ex. 200, pp. 6.1-15 – 6.1-17.)

**AIR QUALITY TABLE 3**
**Staff Recommended Background Concentrations (µg/m$^3$)**

| Pollutant | Averaging Period | Background Concentration (µg/m$^3$) | State Standard (µg/m$^3$) | Federal Standard (µg/m$^3$) | Percent of Stare Standard | Percent of Federal Standard |
|---|---|---|---|---|---|---|
| $NO_2$ | 1-hour State [a] | 29.4 | 339 | --- | 7% | --- |
| | 1-hour National [b] | 29.4 | --- | 188 | --- | 13% |
| | Annual | 4.9 | 57 | 100 | 33% | 19% |
| $SO_2$ | 1-hour | 47 | 655 | — | 7% | --- |
| | 3-hour | 31 | — | 1,300 | --- | 2% |
| | 24-hour | 13 | 105 | 365 | 12% | 4% |
| | Annual | 4 | — | 80 | --- | 5% |
| CO | 1-hour | 2,645 | 23,000 | 40,000 | 12% | 7% |
| | 8-hour | 944 | 10,000 | 10,000 | 9% | 9% |
| PM10 | 24-hour | 83 | 50 | 150 | 166% | 55% |
| | Annual | 30.5 | 20 | — | 153% | --- |
| PM2.5 | 24-hour | 20.5 | — | 35 | --- | 59% |
| | Annual | 8.7 | 12 | 15 | 73% | 58% |

Sources: Ex. 200

a) State 1-hour $NO_2$ AAQS based on maximum measured 1-hour value

b) National 1-hour $NO_2$ AAQS based on 3-year average of annual 98th percentile of the daily maximum 1-hour values

Note that an exceedance is not necessarily a violation of the standard, and that only persistent exceedances lead to designation of an area as nonattainment.

According to Staff, it calculated the background values using the maximum criteria pollutant concentrations measured at the most representative monitoring stations closest to the RSEP site. (Ex. 200, p. 6.1-15.) We find that these values provide an appropriate conservative baseline for evaluating the modeling and impacts data.

4. Modeling Methodology

Our analysis is guided by the dispersion modeling analyses and data provided by the Applicant and Staff. (Exs. 1, pp. 5.1-17 - 5.1-27; 200, pp. 6.1-24 -6.1-37.) Dispersion models allow for complex, repeated calculations that consider emissions in the context of various ambient meteorological conditions, local terrain, and nearby structures that affect airflow.

The evidence establishes that the Applicant performed the air dispersion modeling analysis using the U.S. EPA *Guideline on Air Quality Models* and the Industrial Source Complex, Short-Term Model (ISCST3) (version 02035) and the SCREEN3 meteorological set to evaluate potential impacts on ambient air quality. To assess 1-hour $NO_2$ impacts, the Applicant used the AERMOD dispersion model (version 09292) and the ozone limiting method (OLM). (Exs. 1, p. 5.1-18; 200, p. 6.1-24.)

5. Construction Impacts and Mitigation

The construction phase is temporary and will occur over a period of about 27 months. On-site construction activities include site preparation, foundation work, and installation of major equipment and structures. (Ex. 200, p. 6.1-18.) Combustion-related emissions will come from sources such as construction equipment and on-site vehicles. Fugitive dust emissions will be caused by site grading and excavation activities, installation of new on-site transmission lines, construction of power plant facilities, roads, and substations, and vehicle travel on paved and unpaved roads. (Ex. 200, pp. 6.1-18 - 19.)

The Applicant estimated maximum annual mitigated construction emissions as shown in **Air Quality Table 4** below. (Exs. 1, pp. 5.1-11; 200, p. 6.1-19.)

**AIR QUALITY TABLE 4**
**Maximum Annual Construction Emissions with Mitigation (tons per year)**

| Construction Emission | $NO_X$ | CO | VOC | $SO_2$ | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| Onsite construction emissions | 37.0 | 18.9 | 6.6 | 0.055 | 31.3 | 5.0 |
| Offsite vehicle emissions | 72.2 | 44.6 | 4.0 | 0.1 | 43.3 | 6.5 |
| Offsite construction emissions | 2.9 | 1.7 | 0.3 | 0.004 | 2.3 | 0.3 |

Source: Ex. 200, p. 6.1-19

The Applicant modeled RSEP's construction emissions to determine impacts. The Applicant's modeling analysis includes onsite fugitive dust and vehicle tailpipe emissions sources and control measures proposed by the Applicant. The predicted off-site impacts were added to Staff's conservatively estimated background concentration levels as shown above in **Air Quality Table 3**. (Exs. 200, pp. 6.1-26 -6.1-29.)

The maximum modeled impacts for construction phase and ambient air quality standards are shown below in **Air Quality Table 5**.

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## AIR QUALITY TABLE 5

### Maximum Modeled Impacts for Construction Phase and the Ambient Air Quality Standards

| Pollutant | Averaging Period | Maximum Modeled Concentration[a] ($\mu g/m^3$) | Background Concentration[b] ($\mu g/m^3$) | Total Predicted Concentration ($\mu g/m^3$) | State Standard ($\mu g/m^3$) | Federal Standard ($\mu g/m^3$) | Percent of State Standard | Percent of Federal Standard |
|---|---|---|---|---|---|---|---|---|
| $NO_2$ | 1-hour State[c] | 162 | 29.4 | 191 | 339 | --- | 56% | --- |
| | 1-hour National[d] | 141 | 29.4 | 170 | --- | 188 | --- | 90% |
| | Annual | 13 | 4.9 | 18 | 57 | 100 | 32% | 18% |
| $SO_2$ | 1-hour | 0.33 | 47 | 47.3 | 655 | — | 7% | --- |
| | 3-hour | 0.29 | 31 | 31.3 | — | 1,300 | --- | 2% |
| | 24-hour | 0.14 | 13 | 13.1 | 105 | 365 | 13% | 4% |
| | Annual | 0.028 | 4 | 4.0 | — | 80 | --- | 5% |
| CO | 1-hour | 136 | 2645 | 2781 | 23,000 | 40,000 | 12% | 7% |
| | 8-hour | 95 | 944 | 1039 | 10,000 | 10,000 | 10% | 10% |
| PM10 | 24-hour | 29 | 83 | 112 | 50 | 150 | 224% | 75% |
| | Annual | 5 | 30.5 | 35.5 | 20 | — | 178% | --- |
| PM2.5 | 24-hour | 5.8 | 20.5 | 26.3 | — | 35 | --- | 75% |
| | Annual | 0.91 | 8.7 | 9.6 | 12 | 15 | 80% | 64% |

a) Source: 200, p. 6.1-28

b) Source: Ex 200, Air Quality Table 5

c) State 1-hour $NO_2$ AAQS based on maximum 1-hour value

d) National 1-hour $NO_2$ AAQS based on 3-year average of annual 98th percentile maximum daily 1-hour values

As shown, with the exception of PM10 impacts, the project will not create new exceedances or contribute to existing exceedances for any of the modeled air pollutants. The conditions that would create worst-case project modeled PM10 impacts (i.e. low wind speeds), are not the same conditions when worst-case background PM10 is expected. (Ex. 200, p. 6.1-27.) Furthermore, the worst-case PM10 impacts would occur at the fence line and attenuate quickly with distance from the fence line. Therefore, the evidence shows that the mitigated construction impacts as shown above will not contribute significantly to exceedances of PM10. (*Id*.)

However, in light of the existing PM10 and ozone-nonattainment status for the project area, Staff determined that the construction emissions of nonattainment pollutants and their precursors ($NO_X$, VOC, and PM emissions) are potentially CEQA significant and therefore, the off-road equipment and fugitive dust emissions require mitigation. (Ex. 200, p. 6.1-27.)

The modeling analysis also shows that with implementation of mitigation measures proposed by the Applicant and Staff, project construction is not predicted to cause new exceedances of the NAAQS. Therefore, no adverse NEPA impacts would occur after implementation of the mitigation measures and Conditions of Certification adopted herein. (Ex. 200, p. 6.1-27.) More particularly, Conditions **AQ-SC1** through **AQ-SC5** incorporate Applicant's and Staff's proposed mitigation measures.

**AQ-SC1** requires the project owner to designate an on-site Air Quality Construction Mitigation Manager who shall be responsible for directing and ensuring compliance with **AQ-SC3** through **AQ-SC5**. Under **AQ-SC-2**, the project owner must prepare an Air Quality Construction Mitigation Plan that details the steps that will be taken to ensure compliance with **AQ-SC3** through **AQ-SC-5,** which collectively impose mitigation requirements for monitoring and controlling fugitive dust and visible dust plumes.

We find that implementation of these Conditions of Certification will mitigate construction air quality impacts to less than significant levels.

6. Salt Commissioning Impacts

The commissioning process for the salt system involves melting, heating, and conditioning of approximately 70 million pounds (35,000 tons) of sodium nitrate and potassium nitrate salts. The salt commissioning process will take

approximately 140 days during months 18 through 21 of the construction phase. (Ex. 200, pp. 6.1-19, 6.1-29.)

The evidence shows that the salt melting and heating processes will produce emissions criteria pollutants from the combustion of gaseous fuels in two temporary gas-fired convection heaters. (*Id*.) Propane is the likely gaseous fuel to be used for this process.

The salt conditioning process is expected to result in $NO_X$ emissions as $NO_2$ from the oxidation of magnesium nitrate that is present as trace impurity in the salts. (Ex. 200, pp. 6.1-20 – 6.21.) The criteria pollutant emissions estimated for the salt commissioning process are shown below in **Air Quality Table 6.**

**AIR QUALITY TABLE 6**
**RSEP Salt System Commissioning Emissions**

| | $NO_X$ | CO | VOC | $SO_2$ | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| | | | | | | |
| **Maximum hourly, lb/hr** | | | | | | |
| Melting | 0.59 | 5.64 | 0.75 | 1.13 | 0.53 | 0.53 |
| Heating | 0.21 | 2.05 | 0.27 | 0.41 | 0.19 | 0.19 |
| Conditioning* | 10.9 | — | — | — | — | — |
| | | | | | | |
| **Maximum daily, lb/day** | | | | | | |
| Melting | 14.1 | 135.2 | 18.0 | 27 | 12.6 | 12.6 |
| Heating | 5.11 | 49.2 | 6.56 | 9.84 | 4.59 | 4.59 |
| Conditioning* | 261 | — | — | — | — | — |
| | | | | | | |
| **Salt system commissioning period, lb/period** | | | | | | |
| Melting | 1,282 | 12,327 | 1,644 | 2,465 | 1,151 | 1,151 |
| Heating | 186 | 1,790 | 239 | 358 | 167 | 167 |
| Conditioning* | 17,901 | — | — | — | — | — |
| | | | | | | |
| **Total salt system commissioning period, tons (all phases)** | **9.7** | **7.1** | **0.9** | **1.4** | **0.7** | **0.7** |

*Conditioning emissions represent post-control emissions.
lb/hr = pound(s) per hour
lb/period = pound(s) per duration of the commissioning activities
Source: Ex. 200, pp. 6.1-20 – 6.1-21

The $NO_X$ emissions estimate assumes that the amount of magnesium nitrate impurity in the salts would be at the maximum amount allowed in the vendor guarantee and that all of the magnesium nitrate will be oxidized and released as $NO_2$ during the conditioning phase. (Ex. 200, p. 6.1-20.)

The Applicant estimated the potential air quality impacts resulting from simultaneous construction and salt commissioning activities by modeling the maximum predicted emissions from both sets of activities. To determine the salt commissioning impacts relative to the ambient air quality standards, the predicted project impacts were added to Staff's conservatively estimated background concentration levels as shown above in **Air Quality Table 3**.

As shown below in **Air Quality Table 7**, the maximum predicted $NO_2$, CO, $SO_2$, and PM2.5 concentrations combined with the background concentrations are less than the AAQS. Therefore, predicted $NO_2$, CO, $SO_2$, and PM2.5 impacts from salt commissioning will be less than significant. (Ex. 200, p. 6.1-29.)

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**AIR QUALITY TABLE 7**
**Maximum Modeled Impacts for Construction/Salt Commissioning Phase and the Ambient Air Quality Standards**

| Pollutant | Averaging Period | Maximum Modeled Concentration[a] ($\mu g/m^3$) | Background Concentration[b] ($\mu g/m^3$) | Total Predicted Concentration ($\mu g/m^3$) | State Standard ($\mu g/m^3$) | Federal Standard ($\mu g/m^3$) | Percent of State Standard | Percent of Federal Standard |
|---|---|---|---|---|---|---|---|---|
| **$NO_2$** | 1-hour State[c] | 210 | 29.4 | 239 | 339 | --- | 71% | --- |
| | 1-hour National[d] | 155 | 29.4 | 184 | --- | 188 | --- | 98% |
| | Annual | 16.8 | 4.9 | 22 | 57 | 100 | 38% | 22% |
| **$SO_2$** | 1-hour | 32.00 | 47 | 79 | 655 | — | 12% | --- |
| | 3-hour | 29.00 | 31 | 60 | — | 1,300 | --- | 5% |
| | 24-hour | 13.00 | 13 | 26 | 105 | 365 | 25% | 7% |
| | Annual | 2.60 | 4 | 6.6 | — | 80 | --- | 8% |
| **CO** | 1-hour | 217 | 2645 | 2862 | 23,000 | 40,000 | 12% | 7% |
| | 8-hour | 152 | 944 | 1096 | 10,000 | 10,000 | 11% | 11% |
| **PM10** | 24-hour | 23.2 | 83 | 106 | 50 | 150 | 212% | 71% |
| | Annual | 4.6 | 30.5 | 35 | 20 | — | 176% | --- |
| **PM2.5** | 24-hour | 8 | 20.5 | 29 | — | 35 | --- | 81% |
| | Annual | 1.6 | 8.7 | 10 | 12 | 15 | 73% | 69% |

a) Source: Ex. 200, p. 6.1-29

b) Source: Ex. 200, Air Quality Table 5

c) State 1-hour $NO_2$ AAQS based on maximum measured 1-hour value

d) National 1-hour $NO_2$ AAQS based on 3-year average of annual 98th percentile maximum daily 1-hour values

For PM10, the 24-hour and annual background concentrations exceed the state AAQS even without the added modeled background concentrations. Thus, the predicted impacts will be greater than the AAQS. However, the salt commissioning activity will be temporary and the use of propane or natural gas (clean-burning fuels) will meet the best available control technology requirements for particulate emissions from the two heater units. (Ex. 200, p. 6.1-30.)

The salt commissioning phase will result in minimal PM10 impacts that are not expected to contribute significantly to existing violations of the PM10 AAQS. With implementation of the best available fugitive dust emission control techniques and measures contained in Conditions of Certification **AQ-SC1** through **AQ-SC5**, impacts will be minimized to less than significant levels.

7. Operation Impacts and Mitigation

The project proposes a nominal 150 MW solar concentrating thermal power plant. While the direct air pollutant emissions from power solar generation are negligible, operating emissions from the project will nonetheless occur from maintenance activities that require the use of mobile emissions sources such as tanker trucks for mirror washing, delivery trucks, forklifts, and staff and visitor vehicles. The stationary emission sources will include emergency fire water pump engines, emergency generator engines, and the wet surface air cooling system. (Exs. 1, pp. 5.1-14, 5.1-26; 200, pp. 6.1-22 – 6.1-23.)

These estimates are shown below in **Air Quality Table 8**.

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**Air Quality Table 8**
**RSEP Operations - Maximum Annual Emissions (tons/year)**

| | NOx | VOC | CO | PM10 | PM2.5 | SOx |
|---|---|---|---|---|---|---|
| **Onsite Operation Emissions** | | | | | | |
| Emergency Fire Pump Engines | 0.099 | 0.002 | 0.019 | 0.004 | 0.004 | 0.0002 |
| Emergency Generators | 1.174 | 0.023 | 0.145 | 0.007 | 0.007 | 0.001 |
| Auxiliary Cooling Unit | --- | --- | --- | 0.034 | 0.034 | --- |
| Onsite Maintenance Vehicles | 0.288 | 0.078 | 0.129 | 5.878 | 0.600 | 0.001 |
| **Subtotal of Onsite Emissions** | **1.561** | **0.102** | **0.293** | **5.922** | **0.644** | **0.002** |
| | | | | | | |
| **Offsite Emissions** | | | | | | |
| Delivery Vehicles | 0.294 | 0.069 | 2.704 | 0.402 | 0.402 | 0.005 |
| Employee Vehicles | 1.098 | 0.056 | 0.254 | 0.078 | 0.078 | 0.002 |
| **Subtotal of Offsite Emissions** | **1.391** | **0.124** | **2.957** | **0.479** | **0.479** | **0.007** |
| | | | | | | |
| **Total Maximum Annual Emissions** | **2.95** | **0.23** | **3.25** | **6.40** | **1.12** | **0.01** |
| | | | | | | |
| | | | | | | |

Source: Ex. 200, p. 6.1-23

The Applicant's analysis took the molten salt system into consideration. Typical plant operations will involve the daily transfer of molten salt from the "cold" storage tank (nominal temperature 550° F) through the solar receiver to the "hot" storage tank (nominal temperature 1050° F). The hot salt will be routed through a heat exchanger to generate stem and then returned to the "cold" storage tank. As the volume of the molten salt in a storage tank increases, the space above the salt is exhausted through vents to the atmosphere. Thus, the Applicant analyzed the potential for emissions to the atmosphere. The venting operations are not expected to result in salt loss or fumes. (Ex. 200, pp. 6.1-22 – 6.1-23.)

The Applicant's modeling analysis for mitigated maximum operations emissions impacts are shown below in **Air Quality Table 9.**

## AIR QUALITY TABLE 9

### Maximum Modeled Impacts for Operations Phase and the Ambient Air Quality Standards

| Pollutant | Averaging Period | Maximum Modeled Concentration[a] ($\mu g/m^3$) | Background Concentration[b] ($\mu g/m^3$) | Total Predicted Concentration ($\mu g/m^3$) | State Standard ($\mu g/m^3$) | Federal Standard ($\mu g/m^3$) | Percent o State Standard | Percent of Federal Standard |
|---|---|---|---|---|---|---|---|---|
| **$NO_2$** | 1-hour State[c] | 179 | 29.4 | 208.4 | 339 | --- | 61% | --- |
| | 1-hour National[d] | 126 | 29.4 | 155.4 | --- | 188 | --- | 83% |
| | Annual | 0.33 | 4.9 | 5.2 | 57 | 100 | 9% | 5% |
| **$SO_2$** | 1-hour | 0.60 | 47 | 47.6 | 655 | — | 7% | --- |
| | 3-hour | 0.39 | 31 | 31.4 | — | 1,300 | --- | 2% |
| | 24-hour | 0.01 | 13 | 13.0 | 105 | 365 | 12% | 4% |
| | Annual | 0.00038 | 4 | 4.0 | — | 80 | --- | 5% |
| **CO** | 1-hour | 80 | 2645 | 2725 | 23,000 | 40,000 | 12% | 7% |
| | 8-hour | 13 | 944 | 957 | 10,000 | 10,000 | 10% | 10% |
| **PM10** | 24-hour | 8.2 | 83 | 91.2 | 50 | 150 | 182% | 61% |
| | Annual | 1.2 | 30.5 | 31.7 | 20 | — | 159% | --- |
| **PM2.5** | 24-hour | 1.7 | 20.5 | 22.2 | — | 35 | --- | 63% |
| | Annual | 0.1 | 8.7 | 8.8 | 12 | 15 | 73% | 59% |

a) Source: Ex. 200, 6.1-33

b) Source: Ex. 200 Air Quality Table 5

c) State 1-hour $NO_2$ AAQS based on maximum measured 1-hour value

d) National 1-hour $NO_2$ AAQS based on 3-year average of annual 98th percentile maximum daily 1-hour values

As shown, with the exception of the 24-hour and annual PM10 impacts, the RSEP will not create new exceedances or contribute to existing exceedances for any of the modeled air pollutants. The conditions that would create worst-case project modeled PM10 impacts (i.e., low wind speeds), are not the same conditions when the worst-case background is expected for PM10. Additionally, the worst-case PM10 impacts from the project will occur at the fence line and attenuate quickly with distance from the fence line. Thus, we find that the mitigated operation impacts (as modeled and shown above) will not contribute substantially to exceedances of the PM10 CAAQS. (Ex. 200, pp. 6.1-32 – 6.1-33.)

In light of the existing PM10 and ozone non-attainment status for the project area, Staff determined that the operating emissions of nonattainment pollutants and their precursors $NO_X$, VOC, and PM emissions are potentially CEQA significant and mitigation is required for the stationary equipment, the off-road maintenance equipment, and fugitive dust emissions. (Ex. 200, p. 6.1-34.)

The record further shows that based on the modeling analysis and with implementation of recommended mitigation measures, as adopted in the Conditions of Certification below, project operations will not cause new exceedances of NAAQS. Thus, no adverse NEPA impacts would occur after implementation of the recommended mitigation measures. These conclusions are confirmed by the MDAQMD Final Determination of Compliance. (Exs. 200, p. 6.1-34; 206, 206A.)

Although project operations will not cause new violations of any $NO_2$, $SO_2$, PM2.5 or CO~~)~~ ambient air quality standards, the direct and secondary emissions contributions to existing violations of the ozone and PM10 ambient air quality standards are significant and require mitigation. Both the Applicant and Staff proposed mitigation measures. (Ex. 200, pp. 6.1-34 – 6.1-35.) The Applicant proposed specified Best Available Control Technology emission controls on the stationary equipment that are formalized in the District's Conditions. These District Conditions and Conditions **AQ-SC6** and **AQ-SC7** proposed by Staff will adequately mitigate the project's stationary source, mobile equipment, and fugitive dust emissions from operations.

**AQ-SC6** requires that the project owner, when obtaining dedicated vehicles for mirror washing and facility maintenance activities, must obtain vehicles that meet California on-road emission standards or appropriate U.S. EPA/California off-road emission standards for the latest model year available when the vehicles

are obtained. **AQ-SC7** requires the project owner to prepare and implement a site Operations Dust Control Plant, including all dust control measures identified in **AC-SC3** regarding fugitive dust emissions and plumes.

In addition, even though the evidence indicates that the tank venting emissions are negligible, Staff recommends adoption of Condition of Certification **AQ-SC9**, which requires the project owner to perform source testing on the salt tanks to quantify the $NO_X$ and PM emissions and confirm that these emissions are negligible. We concur that such testing is necessary given the unique aspects of of the molten salt technology and have adopted Condition **AQ-SC9**.

We find that implementation of these Conditions of Certification will mitigate operation air quality impacts to less than significant levels.

8. Cumulative Impacts

Cumulative impacts result from the proposed project's incremental effect, together with other closely related past, present and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15130, 15355.)

The air quality analysis discussed herein is concerned with criteria air pollutants, which have impacts that are usually (though not always) cumulative by nature. Although a project by itself would rarely cause a violation of a federal or state criteria pollutant standard, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects.

The record contains extensive analyses of cumulative impacts to air quality during project construction and operation, including a description of the air quality background in the Riverside County portion of the Mojave Desert Air Basin, and discusses historical ambient levels for each of the assessed criteria pollutants. (Exs., 1, p. 5.1-26; 200, pp. 6.1-45 – 6.1- 48.)

Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multi-faceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air offsets and the use of Best Available Control Technology

(BACT) for new sources of emissions, and restrictions of emissions from existing sources of air pollution. The record also contains a summary of projections for criteria pollutants by the programmatic efforts to abate such pollution, an analysis of the project's localized cumulative impacts, and the project's direct operating emissions combined with other local major emission sources.

With respect to particulate matter impacts, the project will comply with established control measures by adhering to the District's rules and the Conditions of Certification adopted herein. (*Id.*) And, because the applicable District air quality plan does not outline any new control measures applicable to the proposed project's operating emission sources, the project's compliance with existing District rules and regulations is expected to ensure compliance with any air quality plans.

However, the evidence shows that there are several pending solar and wind projects in the Rice Valley area, in areas surrounding Rice Valley in Eastern Riverside or San Bernardino Counties, and surrounding the I-10 corridor area in Riverside County between Desert Center and Blythe as shown below in **Air Quality Table 10**.

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## Air Quality Table 10

| Table 10. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County | | | | | | |
|---|---|---|---|---|---|---|
| **ID #** | **Project Name; Agency ID** | **Location** | **Ownership** | **Status** | **Acres** | **Project Description** |
| **Future Foreseeable Projects in the Rice Valley area within 15-20 miles of proposed project** | | | | | | |
| **A** | Three Colorado River Aqueduct Rehabilitation Projects | Iron Mountain Pump Plant, ~18 miles northwest of proposed Rice Project | Metropolitan Water District of Southern California | Under Construction | N/A | Metropolitan Water District of Southern California proposes to repair the delivery line expansion joints at the Iron Mountain Pumping Plant, located approximately 18 miles northwest of the proposed project. The work is scheduled to be complete February of 2011. |
| **B** | Ward Valley, Leopold Companies, Inc | San Bernardino County, ~5 miles northwest of proposed Rice Project in the Ward Valley | Leopold Companies, Inc | Plan of Development in to Needles BLM | 8,000 | 750 MW solar thermal power plant proposed in the Ward Valley approximately 5 miles northwest of the proposed Rice Solar Energy Project. |
| **Additional Future Foreseeable Projects Outside 15-20 mile Boundary in Eastern Riverside County** | | | | | | |
| **C** | Colorado River Substation | 1.5 miles south of Interstate 10 and 4.75 miles east of Wileys Well Road | SCE | | 140 | Expand the 500-kV switchyard, previously approved as part of the DPV2 CPCN on approximately 45 acres of land, into a full 500/220-kV substation on approximately 90 acres of land. |
| **D** | Desert Quartzite | South of I-10, 8 miles southwest of Blythe | First Solar (previously OptiSolar) | POD in to BLM | 7,724 | 600 MW solar photovoltaic project located on 7,724 acres. Adjacent to DPV transmission line and SCE Colorado Substation. Approximately 27 AF would be used during construction and 3.8 AFY during operation. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **E** | Killbeck | 26 miles northwest of proposed Rice Project | Boulevard Associates | Plan of Development in to Needles BLM | 12,046 | 1,000 MW solar thermal power plant located 26 miles northwest of proposed Rice Project. |
| **F** | Cadiz Lake | 26 miles west of proposed Rice Project | Boulevard Associates | Plan of Development in to Needles BLM | 35,639 | 1,000 MW solar thermal power plant located 26 miles west of proposed Rice Project. |
| **G** | Desert Sunlight | 35 miles southwest of proposed Rice Project | First Solar | Undergoing environmental review | 5,128 | 550 MW solar photovoltaic project located 6 miles north of Desert Center in eastern Riverside County. The project footprint is 4,410 acres and the BLM ROW application is for 5,128 acres. Project would tie into the SCE Red Bluff substation. Approximately water usage is; 27 AFY of during construction and 3.8 AFY during operation. |
| **H** | EnXco 1 | 36 miles southwest of proposed Rice Project | EnXco DevelopmentLLC | Plan of Development in to Palm Springs BLM | 1,327 | 300 MW solar thermal power plant located north of Desert Center. |
| **I** | Chuckwalla Solar I | 35 miles southwest of proposed Rice Project, 1 mile north of Desert Center | Chuckwalla Solar I, LLC | Plan of Development submitted to BLM | 4,099 | 200 MW solar photovoltaic project on 4,099 acres of land. Project would be developed in several phases and would tap into an existing SCE 161-kV transmission line crossing the site. |
| **J** | Palen Solar Power Project | 33 miles southwest of proposed Rice Project, 10 miles east of Desert Center | Solar Millennium LLC/Chevron Energy | Undergoing environmental review, construction to begin end of 2010. | 5,213 | 500 MW solar trough project on 5,213 acres. Facility would consist of two 250 MW plants. Approximately 3,870 acres would be disturbed. Project would include interconnection to the SCE Red Bluff Substation. Project would use 300 AFY of water. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **K** | Genesis Solar Energy Project | 30 miles south of proposed Rice Project, north of I-10, near Ford Dry Lake | NextEra (FPL) | Undergoing environmental review. Construction to begin at the end of 2010. | 4,535 | 250 MW solar trough project located on 4,535 acres north of the Ford Dry Lake. Project includes 6-mile natural gas pipeline and a 5.5-mile gen-tie line to the Blythe Energy Center to Julian Hinds Transmission Line, and then travels east on shared transmission poles to the Colorado River Substation. |
| **L** | Blythe Solar Power Project | 26 miles southeast of proposed Rice Project | Solar Millennium LLC/Chevron Energy | Undergoing environmental review | 9,481 | 1,000 MW solar trough facility on 9,481 acres |
| **M** | McCoy Project | 20 miles south of proposed Rice Project | EnXco development, LLC | Plan of Development in to Palm Springs BLM | 20,608 | 250 MW solar trough project. ROW in process for monitoring water well drilling. |
| **N** | Big Maria Vista Solar Project | 14 miles south of proposed Rice Project | Bullfrog Green Energy | Plan of Development submitted to BLM | 22,717 | 500 MW solar photovoltaic project, BLM ROW application is for 22,717 acres of land. Project would be built in three phases and would require 6,000 gallons of water monthly. |
| **O** | Four Commercial Projects | Blythe, CA | Various | Approved | N/A | Four commercial projects have been approved by the Blythe Planning Department including the Agate Road Boat & RV Storage, Riverway Ranch Specific Plan, Subway Restaurant and Motel, and Agate Senior Housing Development. |
| **P** | Intake Shell | Blythe, CA | | Under Construction | N/A | Reconstruction of a Shell facility located at Intake & Hobsonway. Demolition occurred in 2008, reconstruction planned for 2009-2010. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Q** | Eighteen Residential Developments | Blythe, CA | Various | Approved/ Under Construction | N/A | Fifteen residential development projects have been approved by the Blythe Planning Department including: Vista Palo Verde (83 Single Family Residential [SFR]), Van Weelden (184 SFR), Sonora South (43 SFR), Ranchette Estates (20 SFR), Irvine Assets (107 SFR), Chanslor Village (79 SFR), St. Joseph's Investments (69 SFR), Edgewater Lane (SFR), The Chanslor Place Phase IV (57 SFR), Cottonwood Meadows (103 Attached SFR), Palo Verde Oasis Phase IV (29 SFR).<br>Three residential development projects have been approved and are under construction including: The Chanslor Phase II & III (78 SFR), River Estate at Hidden Beaches, Mesa Bluffs Villas (26 Attached SFR). |
| **R** | Blythe PV Project | Blythe, CA | First Solar | CPUC approved project terms of a 20 year power purchase agreement for sale of 7.5 MW, Under construction in fourth quarter, 2009 | 200 | 7.5 MW solar photovoltaic project located on 200 acres. Project was constructed by First Solar and sold to NRG Energy. |
| **S** | Blythe Energy Project Transmission Line | From the Blythe Energy Project (Blythe, CA) to Devers Substation | Blythe Energy, LLC | Under construction | N/A | Transmission Line Modifications including upgrades to Buck Substation, approximately 67.4 miles of new 230-kV transmission line between Buck Substation and Julian Hinds Substation, upgrades to the Julian Hinds Substation, installation of 6.7 miles of new 230-kV transmission line between Buck Substation and SCE's DPV 500-kV transmission line. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | Green Energy Express Transmission Line Project | 70-mile transmission line from the Eagle Mountain Substation to southern California | Green Energy Express LLC | September 9, 2009, Green Energy Express LLC filed a Petition for Declaratory Order requesting that FERC approve certain rate incentives for the project | N/A | 70-mile double-circuit 500-kV transmission line and new 500/230-kV substation from near the Eagle Mountain Substation (eastern Riverside County) to Southern California |
| **U** | Blythe Energy Project II | Blythe, CA. Near the Blythe Airport and I-10 | Blythe Energy, LLC | Approved December 2005 | 30 acres (located on Blythe Energy Project land) | 520 MW combined-cycle power plant located entirely within the Blythe Energy Project site boundary. Blythe Energy Project II will interconnect with the Buck Substation constructed by WAPA as part of the Blythe Energy Project. Project is designed on 30 acres of a 76-acre site. |
| **V** | Eagle Mountain Pumped Storage Project | Eagle Mountain iron ore mine, north of Desert Center | Eagle Crest Energy Company | License application filed with FERC in June 2009 | 1,524 | 1,300 MW pumped storage project designed to store off-peak energy to utilize during on-peak hours. The captured off-peak energy will be used to pump water to an upper reservoir where the energy will be stored. The water will then be released to a lower reservoir through an underground electrical generating facility where the stored energy will be released back into the Southwestern grid during “high demand peak” times, primarily weekdays. Estimated water use is 8,100 AFY for the first four-year start-up period and replacement water is 1,763 AFY thereafter. 1 |

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| **W** | Blythe Airport Solar I Project | Blythe Airport, 31 miles south of proposed Rice Solar Project | U.S. Solar | Application has been submitted to City of Blythe, City of Blythe approved the project in November, 2009 | 640 | 100 MW solar photovoltaic project located on 640 acres of Blythe airport land. |
| **X** | Red Bluff Substation | South of Desert Center | SCE | | N/A | Proposed 230/500-kV Substation near Desert Center. Planned to interconnect renewable projects near Desert Center with the Devers-Palo Verde transmission line. |
| **Y** | Chuckwalla Valley Raceway | Desert Center Airport (no longer a functioning airport) | Developer Matt Johnson | Under construction, track expected to be open in mid 2010 | 400 | Proposed 500-mile race track located on 400 acres of land that used to belong to Riverside County and was used as the Desert Center airport. |
| **Z** | Eagle Mountain Landfill Project | Eagle Mountain, North of Desert Center | Mine Reclamation Corporation and Kaiser Eagle Mountain, Inc. | U.S. Court of Appeals for the Ninth Circuit issued its regarding the EIS for the project in 11/09 and ruled that the land exchange for the project was not properly approved by the administrative agency. Kaiser's Mine and Reclamation is considering all available options. | ~ 3,500 | The project proposed to develop the project on a portion of the Kaiser Eagle Mountain Mine in Riverside County, California. The proposed project comprises a Class III nonhazardous municipal solid waste landfill and the renovation and repopulation of Eagle Mountain Townsite. The proposal by the proponent includes a land exchange and application for rights-of-way with the Bureau of Land Management and a Specific Plan, General Plan Amendment, Change of Zone, Development Agreement, Revised Permit to Reclamation Plan, and Tentative Tract Map with the County. The Eagle Mountain landfill project is proposed to accept up to 20,000 tons of non-hazardous solid waste per day for 50 years. |

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| **AA** | Wiley Well Communication Tower (part of the Public Safety Enterprise Communication System) | East of Wileys Well Road, just south of I-10 | Riverside County | Final EIR for the Public Safety Enterprise Communication System published in August 2008. | N/A | The Public Safety Enterprise Communication project is the expansion of the County of Riverside's fire and law enforcement agencies approximately 20 communication sites to provide voice and data transmission capabilities to assigned personnel in the field. |
| **AB** | Desert Southwest Transmission Line | 118 miles primarily parallel to DPV | Imperial Irrigation District | Final EIR prepared 2005. Approved by the BLM in 2006. | N/A | New, approximately 118-mile 500-kV transmission line from a new substation/switching station near the Blythe Energy Project to the existing Devers Substation located approximately 10 miles north of Palm Springs, California. |
| **AC** | Mule Mountain Solar Project | South of I-10, approximately 4 miles west of Blythe | Bullfrog Green Energy | Plan of Development in to Palm Springs BLM | 2,684 | 500 MW solar concentrating photovoltaic project located on 2,684 acres. Considering interconnection with proposed SCE Colorado Substation. Approximately 6,000 gallons of water would be required monthly. |
| **Additional Projects Outside Cumulative Figure Boundaries** | | | | | | |
| | Proposed National Monument (former Catellus Lands) | Between Joshua Tree National Park and Mojave National Preserve | | In December 2009, Senator Feinstein introduced bill S.2921 that would designate two new national monuments including the Mojave Trails National Monument. | 941,000 acres | The proposed Mojave Trails National Monument would protect approximately 941,000 acres of federal land, including approximately 266,000 acres of the former railroad lands along historic Route 66. The BLM would be given the authority to conserve the monument lands and also to maintain existing recreational uses, including hunting, vehicular travel on open roads and trails, camping, horseback riding and rock hounding. |
| | BLM Renewable Energy Study Areas | Northewest of Rice Solar Project in San Bernardino County and along the I-10 corridor | BLM | Proposed | N/A | The DOE and BLM identified 24 tracts of land as Solar Energy Study Areas in the BLM and DOE Solar PEIS. These areas have been identified for in-depth study of solar development and may be found appropriate for designation as solar energy zones in the future. |

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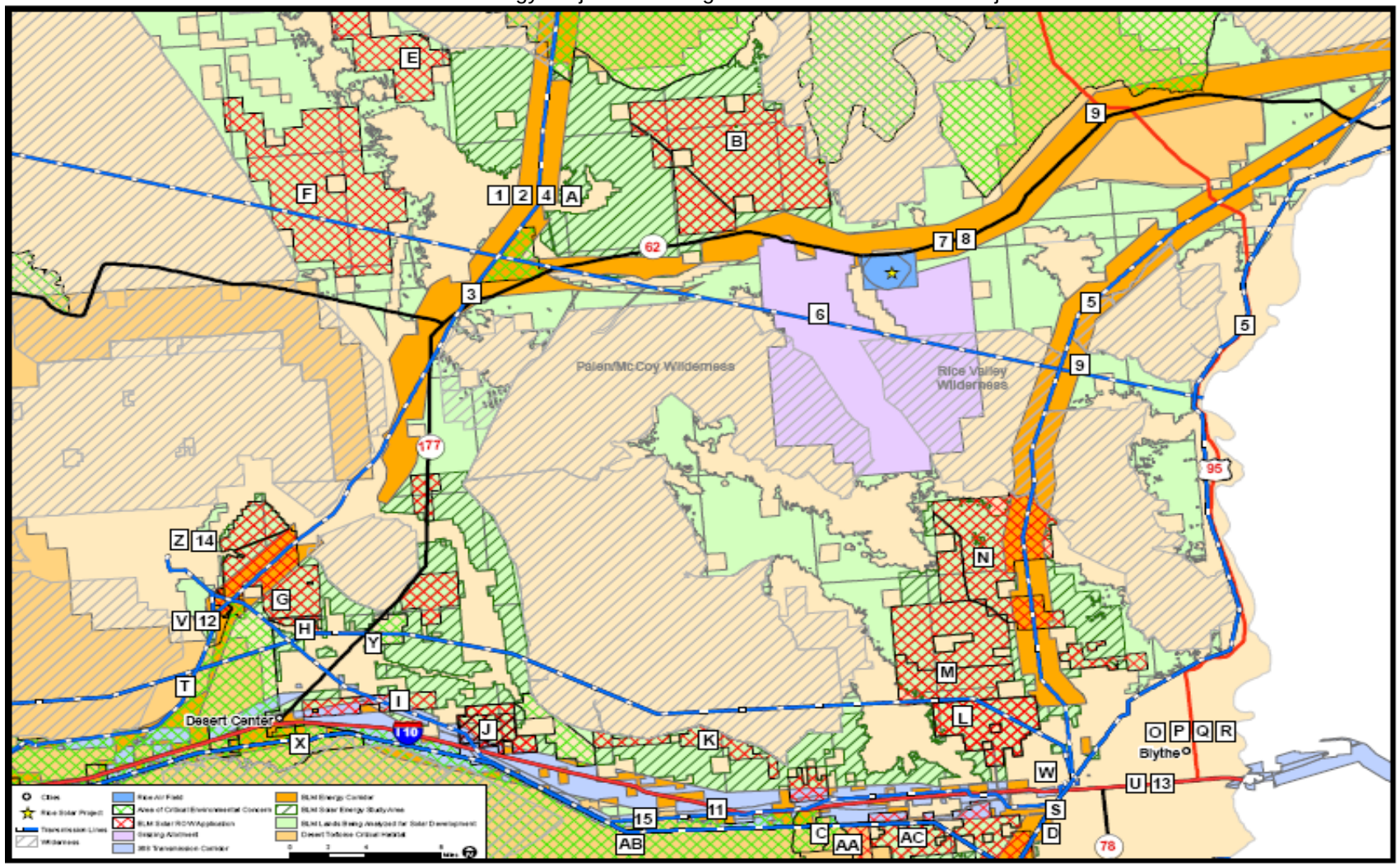
| | Solar Energy projects along Arizona Border | Approximately 15 miles east of the CA/ AZ border along I-10 corridor | Various | Applications filed in to Arizona BLM field offices, application status listed as pending. | N/A | Five solar trough and solar power tower projects have been proposed along the I-10 corridor approximately 15 miles east of the CA/AZ border. The projects have been proposed on BLM administered-land in the Yuma and Kingman Field Offices and have requested use of approximately 75,000 acres. |
| | Paradise Valley "New Town" Development | Approximately 30 miles west of Desert Center (7 miles east of the City of Coachella) | Glorious Land Company | Notice of Preparation of an EIR published in December of 2005. Still under environmental review. | 6,397 | Company proposed to develop a planned community as an international resort destination with residential, recreational, commercial, and institutional uses and facilities. The project is planned as a self-contained community with all public and quasi-public services provided. The project is located outside the Coachella Valley Water District (CVWD) boundaries and the Applicant has entered into an agreement with the CVWD to manage artificial recharge of the Shaver's Valley groundwater. The proponent has purchased a firm water supply from Rosedale-Rio Bravo Water District in Kern County. In-kind water will be transferred to the MWD, which will release water from the Colorado River Aqueduct to a 38 acre percolation pond on the project site. The MWD will deliver approximately 10,000 AFY to the percolation pond and over the long term, no net loss of groundwater in storage is anticipated. |

Source: Ex. 200, Staff Assessment: Cumulative Analysis, p. 5.12 – 5.17

1. Water usage for the Eagle Mountain Pumped Storage Project was based on the information provided to FERC by the Eagle Crest Energy Company in the Responses to Deficiency of License Application and Additional Information Request dated October 26, 2009.

**AIR QUALITY – FIGURE 1**

Rice Solar Energy Project – Existing and Future/Foreseeable Projects




Source: Ex. 200, p. 5-19

The other proposed energy facilities in the region surrounding the RSEP include three thermal solar projects, the Blythe Solar Power Project, the Palen Solar Power Project, and the Genesis Solar Energy Project siting cases, which are either approved or currently being evaluated by the Energy Commission and BLM. Additionally there are a few other proposed projects including transmission projects and private developer projects (residential/landfill/racetrack) located in the general project area. According to the evidence, this potential for significant additional development within the air basin and corresponding increase in air basin emissions is a major part of Staff's rationale for recommending Conditions of Certification **AQ-SC6** and **AQ-SC7**, which are designed to mitigate the proposed project's cumulative impacts by reducing the dedicated on-site vehicle emissions and fugitive dust emissions during site operation

Regarding localized impacts, the evidence also shows that the Applicant, in consultation with MDAQMD, confirmed that there are no projects within a six-mile radius from the Rice Solar Project site that are under construction or have received permits to be built or operate in the foreseeable future. Therefore, it appears that no stationary sources requiring a cumulative modeling analysis exist within a six-mile radius of the proposed project site. However, as noted previously there is the potential for the development of several solar and wind projects within or surrounding the Rice Valley or within the eastern MDAB that could eventually create cumulative air quality impacts if these projects are not adequately mitigated. This potential for significant additional development within the air basin and corresponding increase in air basin emissions will be addressed through implementation of Staff-proposed Conditions of Certification **AQ-SC6** and **AQ-SC7**. As shown below, we have adopted these Conditions.

Thus, we find that with compliance with the Conditions of Certification below, the project's contribution to cumulative air quality impacts will be less than significant.

9. Compliance with LORS

As discussed above, the Mojave Desert Air Quality Management District issued a Final Determination of Compliance FDOC for the RSEP about July 30, 2010. Compliance with all District rules and regulations was demonstrated to the District's satisfaction in the FDOC. The District's FDOC conditions are presented in the Conditions of Certification (**AQ-1** to **AQ-29** for the permanent sources and **AQ-T1** to **AQ-T43** for the temporary sources).

As discussed in the evaluation above and as summarized below, the evidence establishes that the RSEP will comply with applicable LORS. (Exs. 1, pp. 5.1-29 – 5.1-41; 200, pp. 6.1-48 – 6.1-51.)

**Federal**

The District is responsible for issuing the federal New Source Review (NSR) permit and has been delegated enforcement of the applicable New Source Performance Standards. However, the proposed project does not require a federal NSR or Title V permit and would not require a PSD permit from U.S.EPA prior to initiating construction.

The proposed project requires the approval of a federal agency (BLM), but is located in an area that is in attainment or unclassified with all federal ambient air quality standards. Therefore, the proposed project is not subject to the general conformity regulations (40 CFR Part 93).

**State**

The project owner will demonstrate that the proposed project will comply with Section 41700 of the California State Health and Safety Code, which restricts emissions that would cause nuisance or injury, by the issuance of the District's FDOC and the Energy Commission's affirmative finding for the project.

The emergency generator and fire water pump engines are also subject to the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines. This measure limits the types of fuels allowed, establishes maximum emission rates, and establishes recordkeeping requirements. The proposed Tier 2 emergency generator engines and Tier 3 fire water pump engines meet the current emission limit requirements of this measure. This measure would also limit the engines' testing and maintenance operation to no more than 50 hours per year. Significantly, the MDAQMD has proposed permit conditions specific to this project that would limit the annual operating hours for testing and maintenance to no more than 26 hours per year per engine.

**Local**

The District rules and regulations specify the emissions control and offset requirements for new sources such as the RSEP. Best Available Control Technology would be implemented, and emission reduction credits (ERCs) are not required to offset the proposed project's emissions by District rules and regulations based on the permitted stationary source emission levels for the

proposed project. Compliance with the District's new source requirements will ensure that the proposed project would be consistent with the strategies and future emissions anticipated under the District's air quality attainment and maintenance plans.

**Regulation II – Permits**

Rule 201 and 203 – Permit to Construct and Permit to Operate

Rule 201 establishes the emission source requirements that must be met to obtain a Permit to Construct. Rule 203 prohibits use or operation of any equipment which may emit air contaminants without first obtaining a Permit to Operate. The Applicant has complied with this rule by submitting the AFC and District permit applications materials.

**Regulation IV – Prohibitions**

This rule limits visible emissions from emissions sources, including stationary source exhausts and fugitive dust emission sources. Compliance with this rule is expected. In the FDOC, the District has determined that the facility is expected to comply with this rule.

Rule 402 - Nuisance

This rule restricts discharge of emissions that would cause injury, detriment, annoyance, or public nuisance. The facility is expected to comply with this rule (identical to California Health and Safety Code 41700).

Rule 403 - Fugitive Dust

This rule limits fugitive emissions from certain bulk storage, earthmoving, construction and demolition, and manmade conditions resulting in wind erosion. With the implementation of Conditions of Certification **AQ-SC3**, **AQ-SC4**, and **AQ-SC7** the facility is expected to comply with this rule.

Rule 404 - Particulate Matter Concentration

The rule limits particulate matter (PM) emissions based on the volume discharge rate. The RSEP stationary sources subject to this rule (emergency engines) would comply with the PM concentration limits of this regulation.

Rule 405 - Solid Particulate Matter Weight

This rule limits the discharge of solid particulate matter into the atmosphere based on the weight of material being processed. The salt handling and milling

activities during the salt system commissioning would be subject to this rule. Compliance with this rule is expected.

Rule 406 - Specific Contaminants

The rule prohibits sulfur emissions, calculated as $SO_2$, in excess of 500 ppmv. Compliance with this rule is assured with the required use of California low sulfur diesel fuel for the emergency generator and fire pump engines.

The rule prohibits carbon monoxide emissions in excess of 2,000 ppmv. The emergency generators and fire pump engines would have CO emissions well below this concentration limit. Compliance with this rule is expected.

Rule 407 – Liquid and Gaseous Air Contaminants

The rule prohibits carbon monoxide emissions in excess of 2,000 ppmv. The emergency generators and fire pump engines would have CO emissions well below this concentration limit. Compliance with this rule is expected.

Rule 409 - Fuel Burning Equipment - Combustion Contaminants

This rule limits discharge into the atmosphere from fuel burning equipment combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12 percent of carbon dioxide ($CO_2$) at standard conditions. The RSEP stationary sources would have particulate concentrations below limit of this rule.

Rule 431 - Sulfur Content of Fuels

The rule prohibits the burning of gaseous fuel with a sulfur content of more than 800 ppm and liquid fuel with a sulfur content of more than 0.5 percent sulfur by weight. Compliance with this rule is assured with the required use of California low sulfur diesel fuel for the emergency engines.

**Regulation IX – Standards of Performance for New Stationary Sources**

Rule 900 – Standard of Performance for New Stationary Source (NSPS)

This rule incorporates the Federal NSPS (40 CFR 60) rules by reference. The District Conditions would ensure compliance with the requirements of this rule.

The proposed Tier 2 and Tier 3 engines meet the current emission limit requirements of NSPS Subpart IIII that apply to the proposed RSEP equipment. The exact model and size of the engines are only estimated at this time. It is uncertain exactly when the emergency engines would be purchased and whether

Tier 4 engine emission limits may apply at that time. District Conditions of Certification (**AQ-13** and **AQ-23**) require that the Applicant comply with this NSPS standard.

**Regulation XIII – New Source Review**

Rule 1303 – New Source Review

This rule requires implementation of BACT for any emission source unit, which emits or has the potential to emit 25 lbs/day or more and requires offsets if specific annual emission limits are exceeded. The FDOC concluded that the emergency engines trigger BACT and the engines complied. The other stationary sources did not trigger BACT but would meet BACT requirements based on the Applicant's proposed controls. The FDOC concluded that offsets were not required for the proposed project.

Rule 1306 – Electric Energy Generating Facilities

Describes actions to be taken for permitting of power plants; Compliance with this rule is achieved by the completion of the FDOC.

## FINDINGS OF FACT

Based on the persuasive weight of the evidence of record, we find as follows:

1. The proposed Rice Solar Energy Project (RSEP) is in the Mojave Desert Air Basin and is under the jurisdiction of the Mojave Desert Air Quality Management District.

2. The Riverside County portion of the Mojave Desert Air Basin is designated as nonattainment for state ozone and PM10 standards.

3. The project will not cause new violations of any $NO_2$, $SO_2$, PM2.5 or CO ambient air quality standards. Therefore, the $NO_X$, $SO_X$, PM2.5 and CO emission impacts are not significant.

4. The project's $NO_X$ and VOC emissions can contribute to the existing violations of the state ozone standards. However, the required mitigation will reduce the project's impact to a level that is less than significant.

5. The project's PM10 emissions can contribute to the existing violations of the state 24-hour and annual PM10 air quality standards. However, the required mitigation will mitigate the project's impacts to a level that is less than significant.

6. The Mojave Desert Air Quality Management District issued a Final Determination of Compliance imposing conditions of compliance on project construction and operation to ensure compliance with District Rules and Regulations. These Rules and Regulations are incorporated into the Conditions of Certification below.

7. The project's construction-related impacts are temporary and short-term in nature. They are mitigated to below a level of significance by measures identified in the Conditions of Certification.

8. The record contains an adequate analysis of the project's contributions to cumulative air quality impacts.

9. Projects, which have been constructed, undergoing construction, or otherwise reasonably foreseeable have been considered in the cumulative impact analyses of record. Impacts arguably attributable to such projects do not alter conclusions reached concerning the RSEP's contribution to cumulative air quality impacts.

10. Implementation of the Conditions of Certification listed below ensures that the RSEP will not result in any significant direct, indirect, or cumulative adverse impacts to air quality.

## CONCLUSION OF LAW

1. The Commission therefore concludes that with implementation of the Conditions of Certification will ensure that the RSEP will conform with all applicable laws, ordinances, regulations, and standards relating to air quality as set forth in the pertinent portion of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**AQ-SC1** Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those

described in this Condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

**AQ-SC2** Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4,** and **AQ-SC5**.

**Verification:** At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

**AQ-SC3** Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance conditions identified in **AQ-SC4** from leaving the project site. The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the following mitigation measures shall require prior CPM notification and approval.

A. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.

B. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being

applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading (consistent with Biology Conditions of Certification that address the minimization of standing water); and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.

C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

D. Visible speed limit signs shall be posted at the construction site entrances.

E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

F. Gravel or paved ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

I. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.

J. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff

resulting from the construction site activities is visible on the public paved roadways.

L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.

M. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.

N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this Condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

**Verification:** The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

A. a summary of all actions taken to maintain compliance with this Condition;

B. copies of any complaints filed with the District in relation to project construction; and

C. any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

**AQ-SC4** Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above,

fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

**Verification:** The AQCMM shall provide the CPM a Monthly Compliance Report to include:

A. a summary of all actions taken to maintain compliance with this Condition;

B. copies of any complaints filed with the District in relation to project construction; and

C. any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

**AQ-SC5** Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the following mitigation measures shall require prior CPM notification and approval.

a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the Conditions set forth herein.

b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 3 engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides ($NO_X$) and diesel particulate matter (DPM) to no

more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this Condition, the use of such devices is “not practical” for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
2. The construction equipment is intended to be on site for 10 days or less.
3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item “b” occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists :

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.
3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

d. All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer’s specifications.

e. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

f. Construction equipment will employ electric motors when feasible.

**Verification:** The AQCMM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:

A. A summary of all actions taken to control diesel construction-related emissions;

B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

C. Any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

**AQ-SC6** The project owner, when obtaining dedicated on-road or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the latest model year available when obtained.

**Verification:** At least 30 days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report.

**AQ-SC7** The project owner shall provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the Condition **AQ-SC3** that would be applicable to minimizing fugitive dust emission creation from operation and maintenance activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site; that:

A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and

B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

The site Operations Fugitive Dust Control Plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient, or more efficient for fugitive dust control as ARB-approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control.

The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of Condition **AQ-SC4**. The measures and performance requirements of **AQ-SC4** shall also be included in the operations dust control plan.

**Verification:** At least 30 days prior to start of commercial operation, the project owner shall submit to the CPM for review and approval a copy of the site Operations Dust Control Plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs.

Within 60 days after commercial operation, the project owner shall provide to the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.

**AQ-SC8** The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) documents for the facility.

The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project federal air permit. The project owner shall submit to the CPM any modification to any federal air permit proposed by the District or U.S. Environmental Protection Agency (U.S. EPA), and any revised federal air permit issued by the District or U.S. EPA, for the project.

**Verification:** The project owner shall submit any ATC, PTO, and proposed federal air permit modifications to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified ATC/PTO documents and all federal air permits to the CPM within 15 days of receipt.

**AQ-SC9** The project owner shall perform source testing on the two molten salt tanks, at the vents, within the tank headspace or at other locations to be determined, within one year of the start of commercial operation to confirm that the emissions of $NO_X$ from salt decomposition and particulate salt fume emissions from these tanks are negligible (defined for the purposes of this Condition as, for each pollutant, less than 0.1 lbs/day, or the detection limits of the approved source test methodologies if higher). In the event that the source tests establish that the emissions of either or both of these pollutants are not negligible then the Applicant shall establish emission factors for use to determine annual emissions that shall be reported in the annual compliance reports.

**Verification:** The project owner shall submit a molten salt tank $NO_X$ and particulate source test plan for review and approval to the CPM at least 60 days prior to conducting the source tests. The source testing plan shall rely, to the extent practical, on existing USEPA/CARB source test methods and shall include the following information:

1. The proposed source test methods and their technical descriptions and proposed source sampling locations.
2. The proposed facility operating parameters and time of day for the tests. These source tests should be performed during periods of maximum tank venting emissions potential.
3. The proposed operating parameter (heat input, tank temperature, salt pumping rates, etc.) recordkeeping that will accompany the source test data.

The project owner shall provide the source test report as well as any determined salt tank emission factors to the CPM for review and approval within 60 days of the completion of the source tests.

## DISTRICT CONDITIONS

## DISTRICT FINAL DETERMINATION OF COMPLIANCE CONDITIONS

The District Conditions of Certification are based on Final Determination of Compliance (PDOC) for the Rice Solar Energy Project issued by the Mojave Desert Air Quality Management District (MDAQMD) on June 10, 2010. The MDAQMD accepted public comments on the PDOC through July 19, 2010, after which the MSAQMD issued a Final Determination of Compliance (FDOC). (Ex. 206, 206A)

The FDOC contains conditions applicable to the entire facility, permanent emission sources and temporary emission sources. The following District conditions are organized based on that grouping. Condition **AQ-1** is for the facility and covers both permanent and temporary emission sources. Condition **AQ-2** is for the facility and covers temporary emission sources. Conditions **AQ-3** through **AQ-29** address the permanent emission sources. Conditions **AQ-T1** through **AQ-T43** address the temporary emission sources.

**District Condition AQ-1 applies to the entire facility and covers both permanent and temporary emission sources.**

**AQ-1** The owner of this facility must submit an accurate emissions inventory data to the District, in a format approved by the District, on a yearly basis, which is to be received by the District no later than April 30 of each year.

Facility Calendar Year Emissions shall be less than the following:

PM10: 15 tpy
$NO_X$: 25 tpy
$SO_X$: 25 tpy
ROC: 25 tpy

**Verification:** As part of the Annual Compliance Report, the project owner shall include information on operating emission rates to demonstrate compliance with this Condition.

**District Condition AQ-2 applies to the entire facility and covers only temporary emission sources.**

**AQ-2** This entire facility shall not emit more than 9.9 t/y of a single HAP and not more than 24.9 t/y of all HAP's. To ensure compliance, the owner/operator shall calculate and record the annual emissions of Federal Hazardous Air Pollutants (HAP's) in tons per year (t/y) on a calendar year basis (January 1 through December 31). The list of HAP's can be found in Section 112(b)(1) of the Federal Clean Air Act or at web site: http://www.epa.gov/ttn/atw/188polls.html

**Verification:** As part of the Annual Compliance Report the project owner shall include information on operating emission rates to demonstrate compliance with this Condition.

**District Conditions AQ-3 through AQ-29 apply to the permanent emission sources.**

**District Conditions AQ-3 to AQ-13 apply to the following equipment permits:**

**Permit No. E010812 and E010813 (Two (2) Emergency Fire Water Pumps; rated at 600 BHP each)**

**EQUIPMENT DESCRIPTION:**

Caterpillar, Model C18 Dita (or equivalent), a CARB Certified Tier 3 engine, serial number unknown, Year of manufacture unknown, 600 bhp, Turbo Charged, After Cooled, operating at 1750 rpm, fueled on CARB diesel, with a maximum rated fuel consumption of 31.4 gallons per hour, each powering a Fire Pump.

**AQ-3** This system shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles, which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-4** Each engine may operate in response to notification of impending rotating outage if the area utility has ordered rotating outages in the area where the engines are located or expects to order such outages at a particular time, the engines are located in the area subject to the rotating outage, the engines are operated no more than 30 minutes prior to the forecasted outage, and the engines are shut down immediately after the utility advises that the outage is no longer imminent or in effect.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-5** Each engine may operate in response to fire suppression requirements and needs.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-6** Each unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015 percent (15) on a weight per weight basis per CARB Diesel or equivalent requirements.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-7** This facility shall not perform testing of more than one Emergency internal combustion engine at a time.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-8** A non-resettable four-digit (9,999) hour timer shall be installed and maintained on each unit to indicate elapsed engine operating time. (17 Cal. Code Regs., §93115(e)(4)(G)1.)

**Verification:** At least 30 days prior to the installation of the engine, the project owner shall provide the District and the CPM the specification of the hour timer.

**AQ-9** Each unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted or may be interrupted per **AQ-4**. In addition, this unit shall be operated no more than 26 hours per year, no more than 30 minutes per day for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 26 hour per year limit.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-10** The 30-minute limit of **AQ-9** can be exceeded when the emergency fire pump assemblies are driven directly by the stationary diesel fueled CI engine when operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 2006 edition or the most current edition approved by the CARB Executive Officer. (17 Cal. Code Regs.,§ 93115(c)16.)

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-11** The project owner shall maintain a operations log for each unit current and on-site (or at a central location) for a minimum of five years, with records kept on-site for two years, and be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);

b. Reason for use (testing & maintenance, emergency, required emission testing);

c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,

d. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

e. Documentation of maintenance as per manufacturer's recommendations and good maintenance practices.

**Verification:** The project owner shall submit records required by this Condition that demonstrating compliance with the sulfur content and engine use limitations of Conditions **AQ-6** and **AQ-9** in the Annual Compliance Report, including a photograph showing the annual reading of engine hours. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-12** Each fire protection unit is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (17 Cal. Code Regs., § 93115). In the event of conflict between these Conditions and the ATCM, the more stringent requirements shall govern.

**Verification:** The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet ATCM emission limit requirements at the time of engine purchase.

**AQ-13** Each unit is subject to the requirements of the Federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

**Verification:** The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet NSPS emission limit requirements at the time of engine purchase.

**District Conditions AQ-14 to AQ-23 apply to the following equipment permits:**

**Permit No. E010814 and E010815 (Two (2) Emergency Generators; rated at 4020 BHP each)**

**EQUIPMENT DESCRIPTION:**

Caterpillar, Model C175-16 (or equivalent), a CARB Certified Tier 2 engine, serial number unknown, year of manufacture unknown, 4020 bhp, Turbo Charged, After Cooled, operating at **TBD** rpm, fueled on CARB diesel with a maximum rated fuel consumption of 213.3 gallons per hour, powering an electrical generator.

**AQ-14** This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-15** Each engine may operate in response to notification of impending rotating outage if the area utility has ordered rotating outages in the area where the engine is located or expects to order such outages at a particular time, the engine is located in the area subject to the rotating outage, the engine is operated no more than 30 minutes prior to the

forecasted outage, and the engine is shut down immediately after the utility advises that the outage is no longer imminent or in effect.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-16** Each unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 0.0015 percent (15ppm) on a weight per weight basis per CARB Diesel or equivalent requirements.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-17** A non-resettable four-digit (9,999) hour timer shall be installed and maintained on each unit to indicate elapsed engine operating time.

**Verification:** At least 30 days prior to the installation of the engine, the project owner shall provide the District and the CPM the specification of the hour timer.

**AQ-18** This facility shall not perform testing of more than one Emergency internal combustion engine at a time.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-19** Each unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted or may be interrupted per **AQ-15**. In addition, this unit shall be operated no more than 26 hours per year, and no more than one hour per day for testing and maintenance, excluding compliance source testing. Time required for source testing will not be counted toward the 26 hour per year limit.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-20** The project owner shall maintain a operations log for each unit current and on-site (or at a central location) for a minimum of five years, with records kept on-site for two years, and be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Date of each use and duration of each use (in hours);

b. Reason for use (testing & maintenance, emergency, required emission testing);

c. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and

d. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

e. Documentation of maintenance as per manufacturer's recommendations and good maintenance practices.

**Verification:** The project owner shall submit records required by this Condition that demonstrating compliance with the sulfur content and engine use limitations of Conditions **AQ-16** and **AQ-19** in the Annual Compliance Report, including a photograph showing the annual reading of engine hours. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-21** Each genset is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (17 Cal. Code Regs., § 93115). In the event of conflict between these Conditions and the ATCM, the more stringent requirements shall govern.

**Verification:** The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet ATCM emission limit requirements at the time of engine purchase.

**AQ-22** Each unit shall not be used to provide power during a voluntary agreed to power outage and/or power reduction initiated under an Interruptible Service Contract (ISC); Demand Response Program (DRP); Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-23** Each unit is subject to the requirements of the Federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

**Verification:** The project owner shall submit the engine specifications at least 30 days prior to purchasing the engines for review and approval demonstrating that the engines meet NSPS emission limit requirements at the time of engine purchase.

**District Conditions AQ-24 to AQ-29 apply to the following equipment permit:**

**Permit No. B010889 (Wet Surface Air Cooler (WSAC)**

**EQUIPMENT DESCRIPTION:**

Manufacturer, and model **TBD**; system shall be equipped with drift elimination system rated at 0.0005 percent.

**AQ-24** Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-25** This equipment shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-26** The drift rate shall not exceed 0.0005 percent of the maximum circulation rate. The vendor performance specifications will be provided prior to the installation of this unit.

**Verification:** The manufacturer guarantee data for the drift eliminator, showing compliance with this Condition, shall be provided to the CPM and the District 30 days prior to WSAC operation. As part of the Annual Compliance Report the project owner shall include information on operating emission rates to demonstrate compliance with this Condition.

**AQ-27** The project owner shall conduct water quality testing for total dissolved solids content for the WSAC recirculation water at least once per calendar quarter when the unit is operated.

**Verification:** The cooling tower recirculation water TDS content test results shall be provided to representatives of the District, ARB, and the Energy Commission upon request.

**AQ-28** The project owner shall estimate annual PM10 emissions from this unit using the quarterly water quality testing data and the WSAC design specifications for drift and recirculation rate. Facility calendar year PM10 emissions shall be less than the PM10 offset threshold of 15 ton per year.

**Verification:** The project owner shall provide an emissions calculation and water sample testing protocol to the District for approval and CPM for review at least 30 days prior to the first WSAC water test.

**AQ-29** A log shall be kept of all inspections, repairs, and maintenance on equipment. This log shall be maintained current and on-site for a

minimum of five years, and be provided to district, state and federal personnel upon request.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**District Conditions AQ-T1 through AQ-T43 apply to the temporary (i.e., construction) emission sources.**

**Temporary Conditions AQ-T1 to AQ-T10 apply to the following equipment permits:**

**Permit Nos. B010803, B010804, B0010806, and B0010807**

**Four (4) Diesel Powered Electrical Generators; each rated at 98 BHP**

**EQUIPMENT DESCRIPTION:**

Isuzu (or Equivalent) Model BI-4HK1X (or Equivalent), serial number unknown, Year of manufacture unknown, Certified Tier 3 Engine, CARB Executive Order U-R-006-0285, Family 8SZXL03.0JXB 98 bhp, Direct Injected, Turbo Charged, After Cooled, Inter Cooled, operating at unknown rpm, fueled on CARB diesel, with a maximum rated fuel consumption of 4.3 gallons per hour, powering an Electrical Generator.

**Permit Nos. B010808, B010809, B010810, and B010811**

**Four (4) Diesel IC Engines; each rated at 173 BHP**

**EQUIPMENT DESCRIPTION:**

Isuzu (or Equivalent) Model BI-4HK1X (or Equivalent), serial number unknown, Year of manufacture unknown, Certified Tier 3 Engine, CARB Executive Order U-R-006-0273, Family 8SZXL05.21 X B. 173 bhp, Direct Injected, Turbo Charged, After Cooled, Inter Cooled, operating at unknown rpm, fueled on CARB diesel, with a maximum rated fuel consumption of 7.3 gallons per hour.

**AQ-T1** All equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, all equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T2** All equipment shall only be fired on ultra-low sulfur diesel fuel, with sulfur concentration less than or equal to 0.0015 percent (15 ppm) on a weight per weight basis per CARB Diesel or equivalent requirements. (17 Cal. Code Regs., § 93115(e)(1)(A).)

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T3** A non-resettable four-digit (9,999) hour timer shall be installed and maintained on each unit to indicate elapsed engine operating time. (17 Cal. Code Regs., § 93115(e)(4)(G)1.)

**Verification:** At least 30 days prior to the installation of each engine, the project owner shall provide the District and the CPM the specification of the hour timer.

**AQ-T4** The project owner shall maintain an operations log for each unit current and on-site for two years, and be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the information specified below:

a. Monthly hours of use (in hours) for each engine; total calendar year hours of operation for all four engines combined covered by **AQ-T11,** and total calendar year hours of operation for all four engines combined covered by **AQ-T12**;

b. Calendar year operation in terms of fuel consumption (in gallons) and total hours; and,

c. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

**Verification:** The project owner shall submit records required by this Condition demonstrating compliance with the fuel sulfur content limitations of Condition **AQ-T2** and the engine use limitations of Conditions **AQ-T11** and **AQ-T12** in the Annual Compliance Report, including a photograph showing the annual reading of engine hours for each engine. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T5** Pursuant to the Diesel ATCM section (17 Cal. Code Regs., § 93115(e)(1)(D)1.a.), Diesel Particulate Matter (DPM) emission from each ICE diesel equipment unit shall emit no more than 0.01 g/Bhp-hr or 85 percent reduction from Tier 3 emission levels for DPM at the time of installation.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T6** Each diesel fired ICE is subject to the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (17 Cal. Code Regs., § 93115). In the event of conflict

between these Conditions and the ATCM, the more stringent requirements shall govern.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T7** Each engine shall not operate unless the exhaust is vented through a properly functioning Diesel Particulate trap.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T8** Each engine shall not operate unless equipped with a Verified Level 3 Control Device for 85 percent+ Diesel Particulate Reduction consistent with **AQ-T5** above. At present this add on control device has not been identified. Once information is available it shall be communicated to the District for incorporation into this Permit.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T9** All engines shall not be operated once line power is available to replace the electrical demand supported by such engine, and shall be removed from the site within 60 days of connection completion. The owner/operator shall request permit cancelation concurrent with engine removal.

**Verification:** The project owner shall submit to the CPM as part of the last Monthly Compliance Report or within 30 days of equipment removal confirmation of the date of equipment removal in compliance with the requirements of this Condition. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T10** These engines are subject to the requirements of the Federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).

**Verification:** The project owner shall submit the engine specifications at least 30 days prior to purchasing or leasing the engines for review and approval demonstrating that the engines meet NSPS applicable emission limit requirements.

**Temporary Condition AQ-T11 applies to the following equipment permits:**

**Permit Nos. B010803, B010804, B0010806, and B0010807 (Four (4) Diesel Powered Electrical Generators; each rated at 98 BHP)**

**AQ-T11** The aggregated total hours accumulated from engines permitted as; B010803, B010804, B0010806 and B0010807 shall not exceed a combined total of 11,440 hours in any single calendar year period.

**Verification:** As part of the Annual Compliance Report, the project owner shall include information on operating hours to demonstrate compliance with this Condition.

**Temporary Condition AQ-T12 applies to the following equipment permits:**

**Permit Nos. B010808 and B010809, B010810, and B010811 (Four (4) Diesel IC Engines; each rated at 173 BHP each)**

**AQ-T12** The aggregated total hours accumulated from engines permitted as; B010808, B010809, B010810, and B010811 shall not exceed a combined total of 22,200 hours in any single calendar year period.

**Verification:** As part of the Annual Compliance Report, the project owner shall include information on operating hours to demonstrate compliance with this Condition.

**Temporary Conditions AQ-T13 to AQ-T22 applies to the following equipment permit:**

**Permit Nos. B010848 (Salt Handling System, Temporary)**

**EQUIPMENT DESCRIPTION:**

Material handling and mixing equipment, enclosed mechanical screw conveyor located in an enclosed building and vented through a fabric filter baghouse.

**AQ-T13** This equipment shall be properly maintained and kept in good operating condition in strict accord with the recommendations of the manufacturer/supplier and/or sound engineering principles.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T14** Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T15** This equipment and associated operations shall not discharge an exhaust stream that exhibits opacity greater than 20 percent (Ringelmann 1).

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T16** This equipment shall not be operated unless vented through properly functioning air pollution control equipment under valid District permit C010850.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T17** This equipment shall not process more than 480 tons of material in any one day and a total of 35,000 tons of product during the salt commissioning period.

**Verification:** The project owner shall submit to the CPM records on the amount of material processed on a daily basis to demonstrate compliance with this Condition as part of the Annual Operation Report.

**AQ-T18** The project owner shall maintain a log of all material throughput amounts so as to verify compliance with **AQ-T17**. Additionally, a log shall be kept of all inspections, repairs, and maintenance on equipment. Such logs or records shall be maintained at the facility for two years, and be provided to District, State and Federal personnel upon request.

**Verification:** The project owner shall submit records required by this Condition to demonstrate compliance with processing limitations Condition **AQ-T17** in the Monthly Compliance Report. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T19** The project owner shall maintain this equipment in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of air contaminants.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T20** All open material transfer points, such as conveyor drops, hopper and bin loading, shall be operated to minimize emissions of particulate matter.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T21** The Owner/Operator shall maintain the equipment to preclude violations of District rules 401, 402 and 403.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T22** Salt blending and commissioning operations are temporary and expected to be in service 24 hours per day and up to 140 days during the salt system commissioning phase. Subsequently, the salt milling and handling equipment shall be removed from the site within 60 days subsequent to power plant start up.

**Verification:** As part of the Monthly Compliance Report the project owner shall include information as required by **AQ-T18** to demonstrate compliance with this Condition and shall submit as part of the last Monthly Compliance Report or within 30 days of equipment removal confirmation of the date of equipment removal in compliance with the requirements of this Condition.

**Temporary Conditions AQ-T23 to AQ-T30 apply to the following equipment permits:**

**Permit No. B010792 (Heater, Salt Commissioning, Temporary)**

**EQUIPMENT DESCRIPTION:**

Manufacturer **TBD** Model **TBD**, Serial Number **TBD** with a maximum heat input of 20 MMBtu/hr, equipped with Burner Model **TBD.**

**Permit No. B010801 (Heater, Salt Commissioning, Temporary)**

**EQUIPMENT DESCRIPTION:**

Manufacturer **TBD** Model **TBD**, Serial Number **TBD** with a maximum heat input of 55 MMBtu/hr, equipped with Burner Model **TBD**.

**AQ-T23** Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T24** This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T25** The operator shall maintain a log for this equipment, which, at a minimum, contains the information specified below. This log shall be maintained current and on-site for a minimum of two years, and be provided to District, State and Federal personnel upon request:

a. Monthly fuel use; and

b. Cumulative total fuel usage.

**Verification:** As part of the Monthly Compliance Report the project owner shall include information on operating hours of operation and fuel use to demonstrate compliance with this Condition.

**AQ-T26** This heater may be fired using liquefied petroleum gas (LPG), natural gas (NG) or liquefied natural gas (LNG).

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T27** This heater shall only be used to liquefy and condition the heat transfer mixture during start up procedures associated with salt commissioning (excluding start-up of the heater).

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T28** This heater shall be limited to the melting and conditioning of up to 35,000 tons of salt (excluding start-up of the heater).

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T29** This equipment shall be removed from this facility within 60 days subsequent to power plant start up; the owner/operator shall within 60 days of power plant start up request that this permit be cancelled.

**Verification:** The project owner shall submit to the CPM as part of the last Monthly Compliance Report or within 30 days of equipment removal confirmation of the date of equipment removal in compliance with the requirements of this Condition. The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T30** Pursuant to District Rule 401, visible emissions associated with operation of this heater shall not exceed 20 percent opacity or Ringelmann 1.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**Temporary Conditions AQ-T31 to AQ-T38 apply to the following equipment permit:**

**Permit No. C010830 (Wet Chemical Scrubber, Temporary; flow rate of approximately 3,000 acfm)**

**EQUIPMENT DESCRIPTION:**

Temporary salt conditioning multi-stage chemical wet scrubbers with a 50-foot tall stack and a 1.13-foot diameter, operating with an exhaust temperature of 120 degrees F and a flow rate of 3,000 acfm.

**AQ-T31** This equipment shall only be operated and maintained in strict accord with manufacturers and/or supplier's recommendations and/or sound engineering principles.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T32** An operating air lock device shall be fitted in each material and/or liquid discharge port.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T33** The overall water flow to this scrubbing system shall be kept at levels designed and recommended by system supplier.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T34** The scrubbing system shall be equipped with a pressure gauge and water flow meter to allow for the measurements of the water flow and pressure to the venturi and impingement tray scrubbers.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T35** The pressure drop across this scrubbing system shall be within the manufacturer's or design recommended range of **TBD** inches water column (WC) or greater.

**Verification:** The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T36** The project owner shall maintain a log of all material throughput amounts so as to record the values referenced in the above Condition. Additionally, a log shall be kept of all inspections, repairs, and maintenance on equipment. Such logs or records shall be maintained at the facility for two years, and be provided to District, State and Federal personnel upon request.

**Verification:** As part of the Monthly Compliance Report the project owner shall include information on operating hours of operation demonstrate compliance with this Condition.

**AQ-T37** This equipment shall be operated concurrently with the salt blending and heating process associated with District Permits B010848, B010792, and B010801.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T38** Salt blending and salt conditioning operations are temporary and expected to be in service 24 hours per day, and up to 140 days during the salt commissioning phase. Subsequently, the salt milling and handling equipment, salt heaters and wet chemical scrubber shall be removed from the site within 60 days subsequent to the power plant start up; the owner/operator shall within 60 days of power plant start up request that this permit be cancelled.

**Verification:** The project owner shall submit to the CPM as part of the last Monthly Compliance Report or within 30 days of equipment removal confirmation of the date of equipment removal in compliance with the requirements of this Condition. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**Temporary Conditions AQ-T39 to AQ-T43 apply to the following equipment permit:**

**Permit No. C010850 (Baghouse, Temporary)**

**EQUIPMENT DESCRIPTION:**

Temporary Model **TBD**; airflow of **TBD** acfm at powered with a **TBD** hp motor, **TBD** Bags, **TBD** ft2 of cloth area and Air-to-Cloth ratio of **TBD**.

**AQ-T39** This equipment shall only be operated and maintained in strict accord with manufacturers and/or supplier's recommendations and/or sound engineering principles.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T40** The project owner shall maintain, on-site, an inventory of replacement bags sufficient to ensure compliance with applicable rules of District Regulation IV.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T41** This baghouse shall operate as part of the process known as the RSEP salt handling process, permitted by MDAQMD permit B010848.

**Verification:** The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

**AQ-T42** Salt blending and commissioning operations are temporary and expected to be 24 hours per day, and up to 140 days during the salt system commissioning phase. Subsequently, the salt milling and handling equipment, including this baghouse, shall be removed from the site within 60 days subsequent to power plant start up; the owner/operator shall within 60 days of power plant start up request that this permit be cancelled.

**Verification:** The project owner shall submit to the CPM as part of the last Monthly Compliance Report or within 30 days of equipment removal confirmation of the date of equipment removal in compliance with the requirements of this Condition. The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

**AQ-T43** The project owner shall maintain a log of all material throughput amounts so as to record the values referenced in the above Condition. Additionally, a log shall be kept of all inspections, repairs, and maintenance on equipment. Such logs or records shall be maintained at the facility for two years, and be provided to District, State and Federal personnel upon request.

**Verification:** As part of the Monthly Compliance Report the project owner shall include information on operating hours of operation demonstrate compliance with this Condition.

## C. PUBLIC HEALTH

This analysis supplements the previous discussion on air quality and considers the potential public health effects from project emissions of toxic air contaminants (TACs). We review here the evidence concerning whether such emissions will result in significant public health impacts or violate standards for public health protection.[1] The evidence presented by Applicant and Staff was uncontested. (10/29/10 RT 21; Exs. 1, 5.9 § 3, 27, 48 [Public Health]; 200, §6.7.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants for which no ambient air quality standards have been established. These substances are categorized as noncriteria pollutants. In the absence of standards, state and federal regulatory agencies have developed health risk assessment procedures to evaluate potential health effects from exposure to these toxic air contaminants (TACs). (Ex. 200, p. 6.7-2.)

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the Rice Solar Energy Project (RSEP) could emit into the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and
- Characterize potential health risks by comparing worst-case exposure to the project with the scientific safety standards based on known health effects. (Ex. 200, p. 6.7-3.)

[1] This Decision discusses other potential public health concerns under various topics. For instance, impacts from emissions of criteria pollutants are treated in the **Air Quality** section. The accidental release of hazardous materials is addressed in **Hazardous Materials Management**. Electromagnetic fields are covered in **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are considered in the **Soil and Water Resources** section. Potential exposure to contaminated soils and hazardous wastes is described in **Waste Management**. The **Socioeconomics, Traffic and Transportation,** and **Worker Safety and Fire Prevention** sections include analyses of the project's effects upon local infrastructure such as police, medical, and fire services. (Ex. 200, pp. 6.7-1 - 6.7-2.)

Typically, the initial health risk analysis is performed at a "screening level," which is designed to conservatively estimate potential health risks.[2] The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then modeling those conditions to analyze results. Such conditions include:

- Using the highest levels of pollutants that could be emitted from the power plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using the type of air quality computer model which predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses). (Ex. 200, p. 6.7-3.)

The risk assessment for the RSEP addresses three categories of potential health impacts: acute (short-term) effects; chronic (long-term) noncancer effects; and cancer risk (also long-term).[3] Acute health effects result from short-term (one hour) exposure to relatively high concentrations of pollutants; these effects are temporary. Chronic non-cancer health effects occur as a result of long-term exposure (8 to 70 years) to lower concentrations of pollutants. For carcinogenic substances, the health assessment considers the total risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over a 70-year lifetime. (Ex. 200, pp. 6.7-4 - 6.7-5.)

The analysis for noncancer chronic health effects compares the maximum project contaminant levels to safe levels called Reference Exposure Levels or RELs. These exposure levels are designed to protect the most sensitive individuals in the population such as infants, the elderly, and people suffering from illnesses or diseases which make them more susceptible to the effects of toxic substance

[2] The evidence shows that this risk analysis overstates actual health risks. (Ex. 200, pp. 6.7-3, 6.7-5.)

[3] The only TAC emitted from this project is diesel particulate from emergency diesel-fueled engines. Only long-term health effects have been established for this TAC. (Ex. 200, p. 5-4.)

exposure. The RELs are based on the most sensitive adverse health effects reported in medical and toxicological literature, and include margins of safety. (Ex. 200, p. 6.7-4.) A "hazard index" of less than 1.0 signifies that the worst-case exposure is less than the safe exposure level, and thus there are not likely to be adverse noncancer health effects. (Ex. 200, p. 6.7-5.)

The assessment also considers risk from all cancer-causing chemicals from the project's emissions. The calculated risk is not meant to predict the actual expected incidence of cancer, but is rather a theoretical estimate based on worst-case assumptions. (Ex. 200, p. 6.7-5.) Cancer risk is expressed in chances per million and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. The State of California has determined that "the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure." [Cal. Code Regs., tit. 22, § 12703(b).] This risk level is equivalent to a cancer risk of 10 in one million, or $10 \times 10^{-6}$. The conservative nature of the screening assumptions means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated. (Ex. 200, pp. 6.7-5 - 6.7-6.)

If the screening analysis predicts no significant risks, then no further analysis is required. However, if the predicted risk is significant, then further analysis using more realistic, site-specific assumptions is performed to obtain a more accurate assessment of potential health risks. If the site-specific analysis confirms that the risk exceeds the significance level, then appropriate mitigation measures are necessary to reduce the risk to less than significant. The evidence explains that if a refined analysis identifies a cancer risk that exceeds the significance level after all risk reduction measures have been considered, Commission staff would not recommend approval of the project. (Ex. 200, p. 6.7-6.)

The evidence further shows that the Applicant performed screening level risk assessments and concluded that no adverse health effects are expected from project construction or operation. Staff has validated Applicant's conclusions. (Ex. 200, p. 6.7-13.)

1. Construction Impacts and Mitigation

There are no sensitive receptors within 15 miles of the RSEP. (Ex. 200, pp. 6.7-7 - 6.7-8.) Construction is expected to take place over a period of 30 months.

(Ex. 200, p. 6.7-10.) The evidence contains the daily and annual maximum emissions of criteria pollutants including fugitive dust and diesel exhaust. (Ex. 200, pp. 6.7-10 - 6.7-11.) Because these emissions are short-term, and because of the absence of sensitive receptors in the project area, the evidence shows that no quantitative assessment of construction impacts on public health is necessary. (Ex. 200, p. 6.7-11.)

The evidence also contains an analysis of potential construction phase health impacts which could occur from exposure to toxic substances in contaminated soil disturbed during site preparation. (Ex. 200, p. 6.7-9.) A Phase I Environmental Site Assessment conducted in 2008 identified "Recognized Environmental Conditions" (i.e., found evidence or records of potentially significant toxic contamination from past military activities at the site.) The Phase II analysis established that these toxic contaminants had been mitigated, and that there is currently minimal likelihood of uncovering significant levels of contamination. If, however, any unexpected contamination is encountered during construction, then compliance with Conditions of Certification **Waste Management Waste-1** and **Waste-2** will ensure that contaminated soil does not affect the public. These Conditions require that a registered professional engineer or geologist be available during soil excavation and grading to ensure proper handling and disposal of contaminated soil. (Ex. 200, pp. 6.7-9 - 6.7-10.)

Even though the Applicant and Staff independently determined that the construction impacts would be less than significant, they both proposed mitigation measures to reduce the maximum calculated PM10 and PM2.5 emissions and further reduce any potential impacts. Included in these measures are requirements for use of fugitive dust and diesel exhaust control measures such as the use of ultra-low sulfur diesel fuel and the installation of an oxidation catalyst and soot filters on diesel equipment. (*Id*.) We have adopted the recommended mitigation measures in the **Air Quality** section of this Decision.

2. Operation Impacts and Mitigation

The RSEP's operational emissions sources include two diesel-powered emergency generators and two diesel-powered emergency fire water pumps, each of which will be operated for 30 minutes or less per week for testing and maintenance. (Ex. 200, p. 6.7-11.) The evidence specifies and quantifies emissions from these sources, and it also identifies the types of health effects which could occur. (Ex. 200, pp. 6.7-11 - 6.7-12.)

The record discloses the methodology used in identifying and quantifying the emission rates of the toxic noncriteria pollutants that could adversely affect public health. Applicant modeled facility emissions. (Ex. 200, pp. 6.7-12 - 6.7-13.) **Table 1**, below, shows the results:

**PUBLIC HEALTH Table 1**
**Operation Hazard/Risk at Point of Maximum Impact: Applicant Assessment**

| Type of Hazard/Risk | Hazard Index/Risk | Staff's Significance Level | Significant? |
|---|---|---|---|
| **ACUTE NONCANCER** | 0.125 | 1.0 | No |
| **CHRONIC NONCANCER** | 0.013 | 1.0 | No |
| **INDIVIDUAL CANCER** | 0.089 in one million | 10.0 in one million | No |

Source: Ex. 200, p. 6.7-13.

Staff has validated the calculated risks and the evidence uniformly indicates that acute and chronic noncancer hazard risks from project operations are below the significance level of 1.0, and that the cancer risk from project operations is below the significance level of 10 in 1,000,000. (Ex. 200, p. 6.7-13.)

3. Cumulative Impacts and Alternatives

A project may result in a significant adverse impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., tit.14, § 15130.)

Cumulative impacts could occur if impacts from the Rice Solar Energy Project combined with those of other local or regional facilities. The evidence shows, however, that there are no identified projects that would produce significant amounts of toxic pollutants close enough to the RSEP to result in a cumulative effect. Even at the theoretical points of maximum impact, the evidence shows that health risks will remain below the levels of significance. (Ex. 200, p. 6.7-17.)

The evidence also addresses the impacts of the Reduced Acreage Alternative the North of Desert Center Alternative, the SR 62/Rice Valley Road Tie Line Alternative, and the various No Project Alternatives in regard to this topic area. None of the Alternatives would substantially alter the level of impacts posed by the project; moreover, the Rice Solar Energy Project does not create significant

adverse impacts in this topic area. Therefore, it is not necessary to consider any of the Alternatives as a means of reducing public health impacts to below a level of significance. (Ex. 200, pp. 6.7-13 - 6.7-16.)

4. Public Benefits

Finally, the evidence shows that a solar electric generating facility will emit significantly fewer TACs to the environment than other energy sources available in California such as natural gas or biomass. This reduces the health risks that would otherwise occur. At the same time, the RSEP will provide much needed electrical power to California residences and businesses, and will contribute to electric reliability. (Ex. 200, pp. 6.7-17 - 6.7-18.)

## FINDINGS OF FACT

Based on the evidence, we make the following findings and conclusions:

1. Construction and operation of the project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

2. Exposure to diesel particulate emissions from construction equipment is short-term and will not result in long-term carcinogenic or non-carcinogenic health effects.

3. Exposure to construction-related diesel particulates will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.

4. Exposure to fugitive dust due to excavation and construction activities will be mitigated to insignificant levels by implementing measures to reduce dust production and dispersal.

5. Emissions of criteria pollutants, as discussed in the **Air Quality** section of this Decision, will be mitigated to levels consistent with applicable state and federal standards.

6. Emissions of noncriteria pollutants or toxic air contaminants are assessed according to procedures developed by state and federal regulatory agencies to evaluate potential health effects.

7. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects of noncriteria pollutants is known as the hazard index method. A

8. The evidence contains a screening level health risk assessment of the project's potential health effects due to emissions of toxic air contaminants.

9. The health risk assessment is based on worst case assumptions using the highest emission factors, assuming the worst weather conditions, and calculating effects at the point of maximum impact so that actual risks are expected to be much lower at any other location.

10. Cumulative impacts from noncriteria pollutants were analyzed in accordance with the provisions of CEQA and are not expected to be significant.

11. Since the project's contributions to health risks are well below the significance level, the project is not expected to contribute significantly to a cumulative health impact.

12. The record addresses the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR62/Rice Valley Road Tie Line Alternative, and the various No Project Alternatives in regard to this topic area.

13. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

## CONCLUSIONS OF LAW

1. We therefore conclude that emissions of noncriteria pollutants from the construction and operation of the Rice Solar Energy Project do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. The project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision. No Conditions of Certification are necessary to ensure this occurs.

## D. WORKER SAFETY AND FIRE PROTECTION

Worker safety and fire protection measures are mandated by federal, state, and local laws, ordinances, regulations, and standards (LORS). Workers at industrial facilities, such as this project site, routinely operate equipment and handle hazardous materials. Such workers face hazards, including serious physical injury, resulting from on-site accidents. Protection measures are employed to eliminate these hazards or minimize their risk of harm through special training, protective equipment, and procedural controls. The purpose of this section is to determine whether the Applicant's proposed health and safety plans are in accordance with all applicable LORS and thus legally adequate for the protection of industrial workers. This section addresses the availability and adequacy of fire protection and emergency response services. As required by CEQA, this section also addresses the project's impacts on local fire protection services. Under the CEQA Guidelines, a project may have a significant impact if it would adversely impact acceptable levels of service for fire protection [Guidelines Appendix G].

The applicable LORS are identified in **Appendix A** to this Decision.

The evidence on which we base our evaluation is as follows: 10/29/10 RT 21, 157-213, 223-226; Exs. 1; §§ 5.5, 5.7, 2 [7-8], 3, 30, 34, 43, 49, 50, 52, 55, 200, § 6.14, 202, 207, 211.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Worker Safety

Industrial environments are potentially dangerous during construction and operation of facilities. Workers at the Rice Solar Energy Project (RSEP) will be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. They may experience falls, trips, burns, lacerations, and numerous other injuries. They may be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, electrical sparks, and electrocution. (Ex. 200, p. 6.14-6.) Thus, it is important that the project have well-defined policies and procedures, training, hazard recognition, and controls to minimize injuries and protect workers.

The evidence extensively details the type and content of various plans which must be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. (Ex. 200, pp. 6.14-6 - 6.14-10.) For

example, the project owner will develop and implement a “Construction Safety and Health Program” and an “Operations and Maintenance Safety and Health Program,” both of which must be reviewed by the Compliance Project Manager prior to project construction and operation. These plans will be comprised of specific components that include an “Injury and Illness Prevention Program,” “Fire Protection Plan,” “Personal Protective Equipment Program,” and an “Emergency Action Plan.” The elements and objectives of each plan and program are explained by the evidence. (Exs. 1, § 5.16.2.3; 200, pp. 6.14-6 - 6.14-10.)

In addition, the project owner will implement a worker heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 Cal. Code Regs., § 3395) requiring heat illness prevention; and the development and implementation of Best Management Practices (BMP) for the storage and application of herbicides used to control weeds beneath and around the solar heliostats. (Ex. 200, p. 6.14-10.)

Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that the identified plans and programs will be developed and implemented.

OSHA and Cal-OSHA standards encourage employers to monitor worker safety by employing a “competent person” who has knowledge and experience enforcing workplace safety standards, can identify hazards relating to specific project operations, and has authority to take appropriate action. To implement the intent to provide a safe workplace during power plant construction, Condition **WORKER SAFETY-3** requires the project owner to designate a power plant Construction Safety Supervisor. This individual will coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses. (Ex. 200, p. 6.14-11.)

To reduce and/or eliminate safety hazards during project construction and operation, it is also necessary to employ a professional Safety Monitor as set forth in Condition of Certification **WORKER SAFETY-4**. The Safety Monitor, who is hired by the project owner but reports to the Chief Building Official and the Compliance Project Manager (CPM), will track compliance with OSHA/Cal-OSHA regulations and serve as an on-site OSHA expert. This professional will periodically audit safety compliance during construction, commissioning, and the transition to operational status as well as ensure that safety procedures and practices are fully implemented. (Ex. 200, p. 6.14-11.)

The project owner will maintain an automatic portable defibrillator on-site to provide immediate response in the event of medical emergency.[1] Condition **WORKER SAFETY-5** requires the project owner to ensure this device is available during construction and operation, and that appropriate personnel are trained to use it. (Ex. 200, p. 6.14-27.)

2. Valley Fever

To minimize potential exposure of workers and also the public to coccidioidomycosis or "Valley Fever" during soil excavation and grading, extensive wetting of the soil prior to and during construction activities should be employed and dust masks should be worn at certain times during these activities. The dust (PM10) control measures found in the **Air Quality** section of this Decision should be strictly adhered to in order to adequately reduce the risk of workers contracting Valley Fever. To provide additional protection to workers that could experience elevated exposure during construction activities, Condition of Certification **WORKER SAFETY-8** would require that the dust control measures found in proposed Conditions **AQ-SC3** and **AQ-SC4** be supplemented with additional requirements including implementing methods equivalent to the requirements of Rule 402 of the Kern County Air Pollution Control District (as amended November 3, 2004). (Ex. 200, pp. 6.14-12 - 6.14-17.)

3. Unexploded Ordinance

Because the RSEP site was used in the past for military training exercises, to ensure site workers are properly trained to recognize, avoid, and report any unexploded ordnance (UXO), we require implementation of Condition of Certification **WASTE-4**. Condition **WASTE-4** requires the project owner to develop a UXO identification training and reporting procedures program. The UXO training program must include the identification of trained UXO ordinance experts that are available to complete removal of UXO and supplemental geophysical surveys to search for additional or buried ordinance. (Ex. 200, p. 6.14-17.)

[1] Staff's testimony indicates that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. Staff therefore endorses this as an appropriate safety and health precaution. (Ex. 200, p. 6.14-27.)

4. Fire Protection and Emergency Response

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment may cause small fires. Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Compliance with all LORS and the proposed Conditions of Certification will be adequate to generally minimize all fire hazards. (Ex. 200, p. 6.14-17.)

We nonetheless evaluate whether available fire protection services and equipment would adequately protect workers. The on-site fire protection system provides the first line of defense for such occurrences. The Construction Fire Prevention Plan (Condition **WORKER SAFETY-1**) must address and detail measures to minimize the likelihood of fires during construction. These measures include the placement of portable fire extinguishers, safety procedures, and training. Because the Applicant proposes to construct and operate an above-ground fuel depot (to contain a maximum of 10,000 gallons of diesel fuel) for motor vehicles on the site, Condition of Certification **WORKER SAFETY-1** requires the project owner to obtain RCFD and Compliance Program Monitor review and approval of a the fire protection systems for the fuel depot. (Ex. 200, pp. 6.14-17 – 6.14-18.)

In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the Riverside County Fire Department. (Ex. 200, p. 6.14-17.) Local fire support services are under the RCFD jurisdiction. Station 49 (Lake Tamarisk) would the first responder with a response time of approximately one hour and 15 minutes. The next closest station would be Station #43 (the Blythe Station), with a response time of about one hour and thirty minutes. RCFD fire stations are staffed full-time with a minimum of three personnel per shift which include paramedics. (Exs. 200, p. 6.14-17; 202, p. 6.14-20.)

During operation the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable recommended National Fire Protection Association (NFPA) standards (including Standard 850 addressing fire protection at electric generating plants), and all Cal/OSHA requirements. Fire suppression elements will include both fixed and portable fire

extinguishing systems. The fire protection system will be designed to protect personnel and limit property loss and plant downtime in the event of a fire. In addition to the fixed fire protection system, smoke detectors, flame detectors, high temperature detectors, appropriate class of service portable extinguishers, and fire hydrants must be located throughout the facility at code-approved intervals. These systems are standard requirements of the NFPA and the Uniform Fire Code (UFC). (Ex. 200, pp. 6.14-19 – 6.14-20.)

The RCFD determined that a second point of access and a second access road for emergency responders is necessary to ensure fire department access for emergency response. (Ex. 200, p. 6.14-19.) The site layout for RSEP shows both a primary and secondary access roads from State Route SR-62. However, the Applicant has not yet identified a secondary access gate through the perimeter fence. Therefore, in order to comply with the requirements of LORS and with the RCFD, we adopt Staff-proposed Condition of Certification **WORKER SAFETY-6**, which requires the project owner to identify and provide a second access gate at the site, accessible via the secondary access road, for emergency vehicles. This second access gate must be equipped with a remote system, keypad, or other method acceptable to the RCFD, for fire department personnel to open the gate. (Ex. 200, pp. 6.14-19 - 6.14-20.)

Finally, Condition of Certification **WORKER SAFETY-1** requires the project owner, prior to construction and operation of the project, to provide the final Fire Prevention Program to the Compliance Project Manager and the local fire authorities for approval. The final Fire Prevention Program must contain a Construction Personal Protective Equipment Program; a Construction Exposure Monitoring Program; a Construction Injury and Illness Prevention Program; a Construction Heat Stress Protection Plan that implements and expands on existing Cal OSHA regulations as found in Title 8, California Code of Regulations, section 3395; a Construction Emergency Action Plan; and a Construction Fire Prevention Plan.

Even with implementation of the above-described Conditions of Certification, a fire and other incidents could occur and require response from RCFD. Staff and Applicant agree that RCFD is capable of providing necessary non-fire-related emergency services and fire related services to RSEP with existing infrastructure, personnel, and equipment. (10/29/10 RT 138-139, 173.) Staff nonetheless explained that under RCFD standard procedures, when RCFD responds to a confirmed fire, rescue or hazardous materials incident, it sends out at least three engines and nine firefighters. (Ex. 200, p. 6.14-23.) To ensure the

dispatch of the required number of engines and firefighters, RCFD has to dispatch engines and personnel from other stations. RCFD then "backfills" the stations that are responding to an emergency to maintain response capability from those stations.[2] Backfilling involves moving equipment and personnel to the vacated stations. (See, e.g., 10/29/10 RT 168-169, 178.)

According to Staff, the long travel times to the RSEP site (just over two hours each way) and time spent addressing the emergency situation, will prolong the durations during which back filling of responding stations would be required. While this could potentially adversely impact response capability at other fire stations, Staff asserts that the "potential for a large conflagration does not exist at RSEP. Hence, the potential for an event requiring a large enough response from RCFD to cause a significant drawdown of RCFD resources to to significant impacts service levels to the rest of the county would be extremely unlikely." (Ex. 200, pp. 6.14-21, 6.14-24.) This determination is supported by the record.

More particularly the evidence establishes that emergency events at the RSEP are not likely and if, for instance, a fire incident one was to occur, it would likely be during the 4-month salt commissioning portion of the construction phase when significant quantities of propane or natural gas would be used for salt melting. (10/29/10 RT 160, 190-193.)

The evidence also shows that with respect to the three solar plants in California, approximately 31 incidents have occurred since 1998 requiring response from the fire department. These incidents included three fires, fire alarm activations, injuries, medical emergencies, two hazardous material spills, complaints/calls from the public, and false alarms. Only one incident involved a major fire. That fire, which occurred at SEGS 8 (a facility that used significant quantities of heat transfer fluid for plant operations), required response from four different fire districts. (Ex. 200, pp. 6.14-21 - 6.14-22.) Thus, according to the evidence, the incident rate for the three existing California solar thermal plants would be 30 in 12 years of 2.5 emergency calls per year, or 0.83 emergencies per plant per year. (Ex. 200, p. 6.14-22.)

Based on the evidence summarized above, we find that the mere addition of the RSEP in Riverside County will not result in significant direct impacts on RCFD's ability to provide fire and other emergency services.

[2] Staff also stated that RCFD sends out six engines and 18 firefighters for a confirmed fire. (Ex. 200, p. 6.14-21.)

Specifically regarding emergency medical services, the Applicant has proposed a number of measures to further reduce the potential need for RCFD response by providing on-site emergency services throughout the construction and operations phases that could further reduce the need for non-fire and non-hazmat responses from RCFD. (10/29/10 RT 134-150, 153-157; Exs. 50; 200, pp. 6.14-26 – 6.14-27.) The Applicant proposes to implement measures such as:

- Contracting with a Riverside County Emergency Medical Service certified company to provide Advance Life Support with equipment and supplies during the construction and operation phases.

- Maintaining on-site presence of a Basic Life Support Ambulance with a California-certified driver for use during construction-related medical emergency events.

- Contracting with an air medical service to respond to a service request from one of above-described on-site responders – during construction and operation. (Ex. 50, pp. 6.-2 – 6.3.)

While we compliment Applicant's proactive and innovative efforts to minimize use of RCFD resources, we cannot, ignore the conflicting evidence regarding the viability and expected efficacy of the Applicant's proposal. The Applicant essentially contends that RCFD would not be required to respond if on-site services were provided to the project under contract with a County-approved provider. RCFD contends that more analysis is required to determine the instances in which RCFD is relieved of its obligation to respond to the RSEP site. And, Staff expressed concern that a provider other than RCFD would not provide the requisite level of service and that third-party service could not be guaranteed for the life of the project. (See, e.g., 10/29/10 RT 162-165, 172, 184-189, Ex. 207.)

We resolve this conflict by deferring to and agreeing with RCFD, who is both the Authority Having Jurisdiction and more expert in interpreting and implementing County LORS. We therefore conclude that RCFD will likely have some continuing or residual (albeit reduced) emergency response obligations to the site even with implementation of the Applicant's plan to obtain on-site services. (Exs. 202; 211.) But, as discussed above there is little likelihood that such obligations will arise and, while the project could have a direct impact on RCFD, these impacts would be less than significant

To the extent that the FCFD and REMS determine that the RSEP may lawfully provide on-site emergency medical and rescue services, we would require the project owner to comply with Conditions of Certification **WORKER-SAFETY-9, -10 and -11.** These Conditions are based on the Applicant's submitted Revised Fire Needs Assessment (Ex. 50). Implementation of these conditions will shorten the crucial time-to-treatment and reduce the time-to-hospital for injured workers, while at the same time reducing potential demands on and impacts to RCFD resources, benefitting both workers and the community.

5. Cumulative Impacts

A significant cumulative Worker Safety/Fire Protection impact occurs when the simultaneous need for a fire department to respond to multiple locations such that its resources and those of the mutual aid fire departments (which routinely respond in every-day situations to emergencies at residences, commercial buildings, and heavy industry) are over-whelmed and cannot effectively respond.

Existing locations that might require a fire department response along with those facilities which might likely be built were considered by Staff but its focus is on the three other solar energy generation projects planned for Riverside County (Blythe, Palen, and Genesis). (Ex. 200, p. 6.14-20.) As discussed above, the need for fire department response to solar power plants may not be frequent but it has been necessary.

Based in significant part on information obtained from RCFD[3], Staff determined that the project will result in cumulative impacts when the project is considered together with the Blythe, Palen, and Genesis solar generating projects. According to RCFD, these four projects will have a cumulative adverse "drawdown" impacts affecting RCFD's ability to provide an acceptable level of service, including acceptable response times. RCFD reportedly based its analysis on categories of industrial facilities, the type and level of service needed for each category, the appropriate response times needed to each category, and the level of response time required for the RSEP. Thus, RCFD and Staff contend that mitigation for RSEP's incremental impact would be accomplished by RSEP's payment of a proportionate share of the costs of a new fire station, a fire

[3] We note Staff's use of a Staff-created emergency response matrix. (Ex. 200, Appendix A to **Worker Safety & Fire Protection**.) Using matrix criteria such as the project's need for inspections, fire risk, the risk of hazardous materials incidents, the need for rescue and emergency medical services, Staff predicts that the project will be of medium priority and require additional resources and mitigation. This prediction is refuted by substantial evidence in the record as discussed above.

engine, and annual operating and maintenance costs (including salaries and benefits) for the life of the project. (Ex. 200, p. 6.14-20.) More particularly, Staff submits that mitigation for RSEP's contributory impact would be accomplished by RSEP's payment of a proportionate share of the costs of a new fire station, a fire engine, and annual operating and maintenance costs (including salaries and benefits) for the life of the project as follows: a onetime payment of $590,000 for capital costs and an annual payment of $260,000 starting in year one and continuing thereafter for the life of the project. This totals just over $8 million. (Exs. 200, pp. 6.14-24 - 6.14-25 [initially specifying $570,000 for RSEP's pro rata share of capital costs]; 202, 211.)

We defer to RCFD's determination that drawdown impacts can be mitigated if one or more of these measures is implemented. We also find that the addition of the RSEP within the County *could* contribute to a significant cumulative "drawdown" impact. However, we find that RSEP's cost allocation would require it to implement mitigation far in excess of its incremental contribution to the cumulative impacts. The evidence establishes that 1) drawdown caused by solar thermal plants is unlikely and even less likely to be caused by RSEP given its proposed technology and use of molten salt instead of heat transfer fluid, 3) development in the County is not limited to the RSEP and Blythe, Palen, and Genesis solar plants (but these projects are being tasked to bear the full costs of mitigation measures in nearly equal amounts), and 4) RSEP's anticipated incremental impact has not been quantified.

Moreover, the evidence indicates that the RSEP's incremental contribution to that combined significant cumulative impact would only result if there was a major event at the site. While a major event could occur at any time during the project life, it is more likely to occur during the discrete 4-month salt commissioning phase. Even then, there is little likelihood of such an event.

Notwithstanding these evidentiary deficiencies, we find that the project's potential incremental impact on the identified cumulative impacts could be significant. RSEP must therefore make a monetary contribution to be applied to RCFD's mitigation efforts. Based on the limited cost figures submitted by Staff by way of Staff-proposed Condition of Certification **WORKER SAFETY-7**, the County's development fee impact program[4], and project's expected payment of property taxes, we find that RSEP's onetime payment of the development impact fee, property taxes, and a onetime payment of $570,000 will reduce the incremental

[4] We imposed this requirement by way of Condition of Certification **LAND-6** in the **Land Use** section of this Decision.

impact to less than significant levels. These requirements are set forth in Condition of Certification **WORKER SAFETY-7**.

Riverside County Ordinance No. 659.9 (as amended) governs the payment of impact fees. It requires all new development to bear its fair share cost of providing facilities and open space and wildlife habitat reasonably needed to serve the development. We have taken official notice of the ordinance. (10/29/10 RT 216, Cal Code Regs., tit. 20, §1213.) Under the ordinance, the RSEP would be required to pay a onetime fee of $12,965 per developed acre. RCFD would receive a portion of these fees at a rate of $3,653 per acre.[5] Notably, although the project footprint comprises 1,410 acres, a small portion of the site is deemed developed land for the purposes of the ordinance. (10/29/10 RT 109-111, 115-118.)

## FINDINGS OF FACT

Based on the evidence, the Commission makes the following findings:

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The project will employ an on-site professional Safety Monitor during construction and operation.

4. The RSEP will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.

5. The Riverside County Fire Department (RCFD) will provide fire protection and emergency response services to the project.

[5] The ordinance makes it plain that the payment of fees thereunder will not necessarily mitigate to a level of insignificance all impacts from development; the county makes this determination on a case-by-case basis after review of a project-specific environmental impact report. (*Id.*) In this proceeding, we stand in the place of the County in this AFC process and evaluate whether the payment of this fee is adequate to mitigate the project's' cumulative impacts. We find that this payment to RCFD is inadequate to address the unlikely but real threat of impacts to RCFD's provision of fire, emergency, and hazardous materials services if a major event occurs at RSEP.

6. Condition of Certification **WORKER SAFETY-6** requires that the project owner provide a second access point to ensure adequate fire department access for emergency vehicles.

7. The operation of the RSEP, without mitigation, could potentially result in cumulative impacts on the Riverside County Fire Department.

8. Adherence to Condition of Certification **WORKER SAFETY-8** and Conditions **AQ-SC3** and **AQ-SC4** will reduce the risk of workers or the public contracting Valley Fever to a less than significant level.

9. With implementation of **WORKER SAFETY-7**, fire and emergency service resources are adequate to meet project needs.

10. With the implementation of the Conditions of Certification fire risks associated with the RSEP will be mitigated to less than significant levels.

11. With implementation of the mitigation measures contained in the Conditions below, but particularly **WORKER SAFETY-7**, the RSEP's contribution to a Worker Safety/Fire Protection cumulative impact will be less than significant.

## CONCLUSION OF LAW

1. We therefore conclude that the Rice Solar Energy Project will not create significant health and safety impacts to workers, and will comply with all applicable laws, ordinances, regulations, and standards listed in the appropriate portion of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**WORKER SAFETY-1** The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- a Construction Heat Stress Protection Plan that implements and expands on existing Cal OSHA regulations as found in 8 CCR 3395;
- a Construction Emergency Action Plan; and

- a Construction Fire Prevention Plan that includes the above-ground fuel depot.
- The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, and the Heat Stress Protection Plan shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Riverside County Fire Department for review and comment prior to submittal to the CPM for approval.

**Verification:** At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program.

**WORKER SAFETY-2** The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following: an Operation Injury and Illness Prevention Plan;

- an Operation Heat Stress Protection Plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395);
- a Best Management Practices (BMP) for the storage and application of herbicides;
- an Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Plan that includes the fuel depot should the project owner elect to maintain and operate the fuel depot during operations (8 Cal Code Regs. § 3221); and
- Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401—3411).

The Operation Injury and Illness Prevention Plan, Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Riverside County Fire Department for review and comment.

**Verification:** At least 30 days prior to commercial operation, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program.

**WORKER SAFETY-3** The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws,

ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- assure that all construction and commissioning workers and supervisors receive adequate safety training;
- complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- assure that all the plans identified in Conditions of Certification Worker Safety-1 and -2 are implemented.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- summary report of safety management actions and safety-related incidents that occurred during the month;
- report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- report of accidents and injuries that occurred during the month.

**Verification:** At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day.

**WORKER SAFETY-4** The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification Worker Safety-3, implements all appropriate Cal/OSHA

and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

**Verification:** At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

**WORKER SAFETY-5** The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

**Verification:** At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) exists on site and a copy of the training and maintenance program for review and approval.

**WORKER SAFETY-6** The project owner shall provide a second access gate for emergency personnel to enter the site. This secondary access gate shall be at least one-quarter mile from the main gate, and provide a second access road that comes to the site. This road shall be at a minimum an all-weather gravel road, at least 20 feet wide, and with culverts to direct flow under the road at any wash the road may cross.

a. maintain the main access road and the second road and provide a plan for implementation.

Plans for the secondary access gate, the method of gate operation, gravel road, and to maintain the roads shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.

**Verification:** At least sixty (60) days prior to the start of site mobilization, the project owner shall submit to the Riverside County Fire Department and the CPM preliminary plans showing the location of a second access gate to the site, a description of how the gate will be opened by the fire department, and a description and map showing the location, dimensions, and composition of the main road, and the gravel road to the second gate. At least thirty (30) days prior to the start of site mobilization, the project owner shall submit final plans plus the road maintenance plan to the CPM for review and approval. The final plan

submittal shall also include a letter containing comments from the Riverside County Fire Department or a statement that no comments were received.

**WORKER SAFETY-7** The project owner shall fund its project-related share of cumulative impacts by paying the County of Riverside development as required by Condition of Certification **LAND-6**, property taxes, and a one-time payment of $570,000.

**Verification:** At least thirty (30) days prior to the start of site mobilization, the project owner shall provide to the CPM documentation that a letter of credit in the amount of $570,000 has been provided to the RCFD.

**WORKER SAFETY-8** The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in **AQ-SC3** and **AQ-SC4** and additionally requires:

a) site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present;

b) implementation of methods equivalent to Rule 402 of the Kern County Air Pollution Control District (as amended Nov. 3, 2004); and

c) implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with AQ-SC4) immediately whenever visible dust comes from or onto the site or when PM10 measurements obtained when implementing ii (above) exceed 50 micrograms per cubic meter (µg/m3).

**Verification:** At least 60 days prior to the commencement of site mobilization, the enhanced Dust Control Plan shall be provided to the CPM for review and approval.

Conditions of Certification **WORKER SAFETY-9** and **-10** would apply if RCFD and REMS determine that the RSEP may lawfully provide on-site emergency medical and rescue services.

**WORKER SAFETY-9** During any construction activities, the project owner shall provide on-site:

a) an Advanced Life Support Provider who is certified by Riverside Emergency Services (REMS) along with the appropriate equipment and supplies, either directly provided or provided through contract with a REMS-certified company; and

b) a Basic Life Support Ambulance with a California certified driver for use during medical emergency events; and

c) a Memorandum of Understanding (MOU) with REMS for utilization of air medical services

**Verification:** At least 30 days prior to the commencement of site mobilization, the project owner shall either provide a letter to the CPM from Riverside County stating this condition cannot lawfully be implemented in accordance with its ordinances or shall provide to the for review and approval:

a) the name and contact information for the Advanced Life Support Provider. The contact information of any replacements shall be submitted to the CPM within one business day, and provide evidence in each Monthly Compliance Report during commercial operation; and

b) a letter to the CPM confirming that the Basic Life Support Ambulance is available and will be onsite during any construction activities and provide evidence in each January Monthly Compliance Report during construction; and

***c)*** proof of its MOU with REMS for air medical service and provide evidence in each January Monthly Compliance Report during

**WORKER SAFETY-10** Beginning with commercial operation, the project owner shall provide onsite:

a) an EMT who is certified by Riverside Emergency Medical Services (REMS) Agency along with the appropriate equipment and supplies; and

b) an MOU with REMS for air medical services to respond based on clinical justification and a request from an onsite EMT.

**Verification:** At least 30 days prior to the commencement of commercial operation, the project owner shall either provide a letter to the CPM from Riverside County stating this condition cannot be lawfully implemented in accordance with its ordinances or shall provide to the CPM for review and approval:

a. the name and contact information for the EMT(s) to be working on each shift. The contact information of any replacement EMT shall be submitted to the CPM within one business day, and provide evidence in each Monthly Compliance Report during commercial operation; and

b. annually thereafter in the Annual Compliance Report, proof of its MOU with REMS for air medical service***s*** to the CPM for review and approval.

**WORKER SAFETY-11:** The project owner shall provide the CPM with a schedule indicating when construction activities that create the potential for rescue incidents will be ongoing, the type of construction to be done, the names of the rescue team members to be onsite, and

documentation showing that the rescue team members have the appropriate training.

**Verification:** At least 60 days prior to the commencement of any construction activities that create the potential for rescue incidents, the project owner shall provide to the Safety Monitor (provided for in **WORKER SAFETY-4**) for review and to the CPM for review and approval:

A. a schedule indicating when the construction activities will occur;
B. a description of the type of construction to be done;
C. the names of the rescue team members to be onsite; and
D. documentation showing that the rescue team members have the appropriate training.

## E. HAZARDOUS MATERIALS MANAGEMENT

This section considers whether the construction and operation of Rice Solar will create significant impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials.[1] Federal and state LORS regulate the management of hazardous materials and are designed to reduce the likelihood of spills or releases of hazardous materials that could result in adverse public health impacts. Project compliance with applicable LORS will ensure that the potential public health risks are minimized to insignificant levels. (10/29/10 RT 21; Exs. 1, § 5.5,3, 4 [89-93], 26, 48 [Hazardous Materials]; 200, § 6.4-1.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Risks

The evidence describes the methodology used to assess risks posed by the project's use of hazardous materials, including the following elements:

- A review of chemicals, the amounts proposed for on-site use, and a determination of the need for and the appropriateness of their use.
- Chemicals used in small amounts or whose physical state is such that there is no likelihood that effects of a spill would migrate off site, were identified and removed from further consideration.
- Measures proposed to prevent spills were reviewed and evaluated, including engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs.
- Measures proposed to respond to accidents were reviewed and evaluated, including engineering controls such as catchment basins and methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews.
- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place. (Ex. 200, pp. 6.4-5 – 6.4-6.)

[1] The **Worker Safety and Fire Protection** section of this Decision addresses the protection of workers from such risks.

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, welding gases, lubricants, solvents, paint, and welding gasses. An on-site concrete batch plant will require the use of additional hazardous materials such as fly ash and calcium chloride. All of these will be used in small, non-reportable quantities. Any spills or other releases will be confined to the site and captured in secondary containment berms installed by the contractors. There is no evidence that acutely toxic materials will be used during construction. (Ex. 200, p. 6.4-7.)

During operations, hazardous materials such as cleaning agents, water treatment chemicals, welding gases, oils, activated carbon, and other chemicals will be used or stored only in small quantities and present limited off-site dangers because of their low volatility and/or toxicity. Condition **HAZ-1** prohibits the project owner from using any hazardous materials that are not listed in **Appendix A**, which identifies and quantifies the hazardous materials that will be used and stored on-site.[2] None of the materials listed, except for aqueous ammonia, hydrogen, sodium hydroxide, sodium hypochlorite, and liquefied petroleum gas (LPG), pose significant potential for off-site impacts due to the small quantities used on-site, their relative toxicity, their physical state, and/or their environmental mobility. The potential for adverse public health effects from hazmat spills is further reduced in this case because there are no sensitive receptors within a six-mile radius of the site and the nearest public use at least one mile from the site, (Ex. 200, pp. 6.4-7 - 6.4-8.)

a. Aqueous Ammonia

The project may utilize aqueous ammonia (19 percent $NH_3$) during plant commissioning activities as an option for emissions control of the salt melting and conditioning equipment. The ammonia will be delivered by a licensed contractor in tanker trucks, which will carry up to 7,500 gallons per truck with a maximum of two tanker trucks on-site at any time. The trucks will remain on-site until empty and no permanent ammonia storage tanks will be built. Ammonia is colorless and flammable and can be toxic to humans at sufficient concentrations. The project must comply with the requirements of the California Fire Code and the California Accidental Release Prevention (CalARP) program for the use and storage of ammonia. Safety requirements include the installation of a secondary containment structure surrounding the loading area to hold the full contents of the

[2] Appendix A is a compilation of anticipated hazardous materials to be used during project operations based on evidence submitted by the Applicant. Condition **HAZ-1** incorporates Appendix A, which is attached at the end of this section. (Exs. 1, § 5.5.2, Tables 5.5-1, 5.5-2, 5.5-3, 5.5-4, 5.5-5; 26; 200, § 6.4, Appendix A.)

tanker and accumulated precipitation. In addition, ammonia and sodium hypochlorite are incompatible chemicals and must be stored in separate locations to eliminate potential interactions in the event of an accidental release. The evidence indicates that if the project owner implements all required safety measures, the temporary use and storage of 19 percent aqueous ammonia at the site poses an insignificant risk to the off-site public. Condition **HAZ-3** ensures that the project owner will implement a Safety Management Plan for delivery and storage of liquid hazardous materials. (Ex. 200, pp. 6.4-8 – 6.4-9; 1, § 5.5.4.2.2.)

b. Hydrogen

Hydrogen gas, a highly flammable substance, will be used on-site as a generator coolant in amounts less than the Reportable Quantity as defined in the CalARP regulations. It will be stored in areas separated from other flammable sources in U.S. Department of Transportation (DOT) approved "tube trailers" that incorporate safety systems and pressure relief valves. Project compliance with state-of-the art safety requirements for handling hydrogen ensures that an accidental release of hydrogen will not pose a significant risk to the off-site public. (Exs. 200, p. 6.4-9, 1, § 5.5.4.2.3; 4 [89-93].)

c. Sodium Hydroxide

Sodium hydroxide will be stored on-site but does not pose a risk of off-site impacts because it has relatively low vapor pressure and spills would be confined to the site. (Ex. 200, p. 6.4-9.)

d. Sodium Hypochlorite

The record indicates that 17,000 gallons of sodium hypochlorite will be stored at the site. Sodium hypochlorite has a low potential to affect the off-site public because its vapor pressure is low and it is in an aqueous solution. It is used at a substitute for chlorine gas, which is more toxic and more likely to migrate off-site because the gas is stored in concentrated form under pressure. The amount of sodium hypochlorite that will be stored on-site is below the Reportable Quantity as defined in the Cal-ARP regulations. Measures to prevent transfer spills of sodium hypochlorite must be included in the Safety Management Plan required by Condition **HAZ-3** to reduce the potential for accidental spills during transfer from delivery vehicles. Project compliance with the safety requirements for handling liquid hazardous materials ensures that the use and storage of sodium

hypochlorite will not pose a significant risk to the off-site public. (Exs. 200, p. 6.4-9 – 6.4-10; 26 ].)

e. Sulfuric Acid

Sulfuric acid will be stored on site but does not pose a risk of off-site impacts because it has relatively low vapor pressure so that spills will be confined to the site. (Ex. 200, p. 6.4-10.)

f. Liquefied Petroleum Gas

Liquefied petroleum gas (LPG) will be used in significant quantities only during the pre-startup salt melting and conditioning phase, which will last approximately 140 days. LPG, also known as propane, poses a fire and/or explosion risk because of its flammability and can cause asphyxiation when the propane concentration level exceeds 90 percent. (Ex. 200, p. 6.4-10.)

The LPG will be stored on-site in two 7,500 gallon mobile tank truck trailers. The risk of a fire and/or explosion on-site can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. The National Fire Protection Association codes (NFPA 54, 58 and 85A) require the use of double block and bleed valves for gas shut-off and automated combustion controls, and adherence to DOT pressure vessel design and construction requirements. These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. The Safety Management Plan required by Condition **HAZ-3** must address both the handling and use of LPG to reduce the potential for equipment failure due to either improper maintenance or human error. (Ex. 200, p. 6.4-10.)

The evidence includes an analysis of the worst-case offsite consequences of LPG release,[3] which could occur if a nearby fire overheats one of the storage tanks, causing a “boiling liquid expanding vapor explosion” (BLEVE) of the tank. This scenario could result in a fire ball and explosion with a resulting maximum distance of significant impact (thermal impact of five kilowatts per square meter) less than 1,935 feet, a distance within the site fence line which does not extend to the public. However, the worst case scenario presents a significant safety hazard for on-site employees. State and federal LORS require several protective measures to reduce the probability of explosion. If the project owner implements

[3] This worst-case modeling analysis conforms with the CalARP Off-Site Consequence Analysis Guidance on flammable materials. (Ex. 200, p. 6.4-10.)

these safety measures, the potential impact from the temporary use and storage of LPG will be reduced to insignificant levels. Condition **HAZ-3** requires a Safety Management Plan for delivery of LPG. Condition **HAZ-2** requires the project owner to develop a Hazardous Materials Business Plan (HMBP) to comply with applicable LORS, including an emergency response plan, protective equipment, and employee training. (Exs. 200, pp. 6.4-10, 6.4-12; 1, § 5.5.4.2.4.) See the **Worker Safety and Fire Protection** section of this Decision,

2. Risk Mitigation

a. Engineering and Administrative Controls

Best Management Practices (BMPs) include engineering controls, which are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) that can prevent a hazardous material spill from occurring, limit the spill to a small amount, or confine it to a small area. Administrative controls are those rules and procedures that workers must follow to help prevent accidents or keep them small if they do occur. (Ex. 200, p. 6.4-11.)

The engineered safety features used at Rice Solar include:

- Use of secondary containment areas, surrounding each of the hazardous materials storage areas, designed to contain accidental releases during storage; and
- Physical separation of stored chemicals in isolated containment areas with a non-combustible partition to prevent accidental mixing of incompatible materials that could result in the formation and release of toxic gases or fumes;
- Storage of small quantity hazardous materials in original, properly labeled containers;
- Installation of a fire protection system for hazardous materials storage areas;
- Design the LPG storage tanks with continuous tank level monitors, temperature and pressure monitors and alarms, and excess flow and emergency isolation valves. (Exs. 200, p. 6.4-11; 1, §§ 5.5.4.1, 5.5.4.2 et seq.)

Administrative controls, such as those required in Condition **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume) and Condition **HAZ-2** (development of the HMBP) reduces the effects of accidents and spills from moving off-site. Additionally, the Worker Safety and Fire

Protection Plan, described in the **Worker Safety and Fire Protection** section must include:

- Worker training regarding chemical hazards, health and safety issues, and hazard communication;
- Procedures to ensure the proper use of personal protective equipment;
- Safety operating procedures for the operation and maintenance of systems utilizing hazardous materials;
- Fire safety and prevention; and
- Emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention including the preparation of a SPCC Plan. (Exs. 200, pp. 6.4-11 – 6.4-12; 1, §§ 5.5.4.1, 5.5.4.2 et seq.)

b. Spill Response

Condition of Certification **HAZ-2** ensures that the HMBP, which specifies the Owner/Operator, the Identification Inventory and Site Map, the Emergency Response Plan (spill containment procedures, including a Spill Prevention Control and Countermeasure Plan for petroleum-containing materials as required by federal LORS), and the Employee Training Plan, is coordinated with the Riverside County Fire Department (RCFD). The Safety Management Plan required by Condition **HAZ-3** is applicable during construction, commissioning, and operation. (Exs. 200, pp. 6.4-11 - 6.4-12; 1, §§ 5.5.2.4, 5.5.4.2.4.)

Plant personnel will be trained as a hazardous materials response team as the first responder to hazardous materials incidents. In the event of a large hazardous materials incident, the RCFD's Hazardous Materials Response Team will respond to the project area. Evidence indicates that the RCFD's County Hazmat Team is adequately trained and equipped to respond to an emergency at the project site. However, the estimated response time is approximately two hours since the nearest Hazmat Response Team #81 is located in Palm Desert, CA, about 100 miles from the site. Although the remote location of the site lengthens the response time, the remoteness also reduces the risk of off-site consequences to the public. (Exs. 200, p. 6.4-13; 1, § 5.5.2.5.)

c. Transportation

Containerized hazardous materials will be transported to the project site via tanker trucks. The evidence shows that transport of aqueous ammonia, sulfuric acid, and LPG in large quantities represents the predominant risks associated

with hazardous materials transport. (Ex. 200, p. 6.4-13.) These materials can be released during a transportation accident, but the extent of their impact depends on the location of the accident and the rate of vapor dispersion from the surface of the spilled pool. The likelihood of an accidental release during transport is dependent upon three factors:

- The skill of the tanker truck driver;
- The type of vehicle used for transport; and
- Accident rates.

An extensive state and federal regulatory program applies to shipment of hazardous materials on California highways to ensure safe handling in general transportation. These LORS also address issues of driver competence, and compliance with the regulatory scheme reduces significant concerns about transportation risks. According to Staff, the risk of an accidental transportation release after the delivery vehicle leaves the interstate highway in the project area represents a more likely scenario. Staff proposed a route from the south exiting the Interstate Highway 10 (I-10) at Desert Center, proceeding northbound on State Route 177, then eastbound on State Route 62 to the project site. An alternate route from the north involves leaving the I-40 at Needles, proceeding southbound on State Route 95, then westbound on State Route 62 to the site. These proposed routes to the site will not pass by any schools. We agree that the preferred delivery routes should be included in the Safety Management Plan required by Condition **HAZ-3**. (Exs. 200, p. 6.4-14; 1, § 5.5.4.2.5.)

d. Seismic Issues

Staff presented evidence regarding the risk of hazardous material spills resulting from an earthquake. The record shows that compliance with LORS regulating design and construction of hazardous materials storage tanks and containment areas are likely to be successful in preventing damage from a large earthquake. Staff reviewed the impacts of the February 2001 Nisqually earthquake near Olympia, Washington, a state with similar seismic design codes as California. Compared with older tanks that suffered damage during the 1994 Northridge quake in California, no hazardous materials storage tanks built in accordance with modern seismic standards were impacted by the Nisqually quake. Therefore, we believe that the modern seismic design for storage tanks will likely prevent tank failures during seismic events and that earthquakes do not represent a significant risk of hazmat exposure to the public. The **Geologic Resources and Hazards** and **Facility Design** sections of this Decision require

the project to adhere to applicable seismic standards in the most recent California Building Code. (Ex. 200, pp. 6.4-14 – 6.4-15.)

3. Site Security

The evidence establishes that site security measures are appropriate to protect California's electrical infrastructure from malicious mischief, vandalism, or terrorist attack. The U.S. Department of Homeland Security (DHS) Interim Final Rule (Chemical Facility Anti-Terrorism Standards or CFATS) requires facilities that use or store certain hazardous materials to conduct vulnerability assessments and implement certain specified security measures.[4] (Ex. 200, p. 6.4-15.)

Rice Solar will use hazardous materials in sufficient quantities to require special site security measures to prevent unauthorized access. The Security Guidelines for the Electricity Sector in 2002 (North American Electric Reliability Corporation (NERC) 2002), the Critical Infrastructure Protection standard for cyber security (NERC 2009), and the draft Vulnerability Assessment Methodology for Electric Power Infrastructure in 2002 (U.S. Department of Energy (DOE) 2002) provide guidance for designing power plant security measures. The Energy Commission requires all new power plants to implement a minimum level of security consistent with these guidelines. (Ex. 200, p. 6.4-15.)

To ensure that Rice Solar (or a related shipment of hazardous material) is not the target of unauthorized access, Conditions **HAZ-5** and **HAZ-6** address both construction security and operations security plans. These plans require the implementation of site security measures that incorporate industry site security measures and Energy Commission guidelines. Such measures include perimeter fencing and breach detectors.[5] Site personnel must undergo background checks and site access will be strictly controlled. Compliance with state and federal LORS requires hazmat vendors to maintain their transport vehicle fleet and employ only properly licensed and trained drivers. The project owner must ensure that vendors adhere to these requirements. (Ex. 200, pp. 6.4-15 – 6.4.16.)

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[4] See Interim Final Rule 6 CFR Part 27.

[5] Protection of widely dispersed electrical generation equipment, substations, and thousands of miles of transmission lines from destructive acts is not practical. Damaged equipment and transmission lines must be quickly repaired or replaced in the same manner that storm damaged equipment is returned to service. The damage could be expensive to repair, but no substantial impacts on continued electrical service or significant environmental effects would be anticipated. (Ex. 200, p. 6.4-16.)

4. Alternatives

The evidentiary record includes an analysis of several alternatives to the project as proposed. These are: Reduced Acreage Alternatives, SR62/Rice Valley Road Transmission Line Alternative, and the No Project Alternative, each of which would not change the level of impacts from those of the proposed project. However, in the absence of this project, other renewable energy projects may be constructed to meet state and federal mandates, and those projects would have similar impacts in other locations. (Ex. 200, pp. 6.4-17 - 6.4-21.)

5. Cumulative Impacts

There is no evidence that use of hazardous materials by Rice Solar will contribute to off-site cumulative impacts in the region because there are no nearby facilities using large amounts of hazardous chemicals and there is minimal potential for vapor plumes to combine to produce an airborne concentration that would present a significant risk. (Ex. 200, p. 6.4-21.)

## FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The Rice Solar Energy Project will use hazardous materials during construction and operation.

2. No acutely toxic hazardous materials will be used on-site during construction.

3. The project owner will implement Best Management Practices to respond to spills or releases of hazardous materials, including engineering controls such as catchment basins and methods to keep vapors from spreading, and administrative controls such as training emergency response crews.

4. None of the hazardous materials used and stored on-site during operations, except for aqueous ammonia, and liquefied petroleum gas (LPG), pose significant potential for off-site impacts due to their small quantities, their relative toxicity, their physical state, their environmental mobility, and the absence of sensitive receptors within a six-mile radius of the site.

5. The major public health and safety dangers associated with the project's hazardous materials are exposure to ammonia vapors from a spill of aqueous ammonia and/or fire and explosion from heated liquefied petroleum gas (LPG or propane).

6. The risks of exposure to aqueous ammonia plumes and LPG fire/explosion will be reduced to insignificant levels through adherence to applicable LORS and the implementation of effective safety management practices.

7. Based on experience with recent seismic events, storage tanks designed in accordance with modern seismic requirements are not likely to fail during seismic events and do not represent a significant risk to the public.

8. The hazardous materials transportation associated with the Rice Solar project would not significantly increase the cumulative risks associated with regional hazardous materials transportation.

9. The risk of significant cumulative impacts originating from simultaneous releases of hazardous materials from the Rice Solar project and nearby facilities is remote and presents no significant risk to the public.

10. The record contains an examination of several alternatives to the project but none are preferable to the Rice Solar Energy Project in terms of hazardous materials management.

11. On-site personnel will be trained as first responders to hazardous materials accidents at the project site.

12. The evidence indicates that emergency responders from the Riverside County Fire Department are adequately equipped and trained to deal with large hazardous materials accidents at the Rice Solar site.

13. Extensive state and federal regulatory programs regulate the shipment of hazardous materials on California highways to ensure safe handling in general transportation and the project owner will ensure that delivery trucks follow approved routes from major highways to the site to avoid sensitive receptor locations.

14. The project owner will implement appropriate site security measures as required by applicable LORS and federal and state guidance for power plant sites.

15. Implementation of the mitigation measures described in the evidence and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

16. With implementation of the Conditions of Certification, below, the Rice Solar Energy Project will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in

the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

## CONCLUSIONS OF LAW

1. The Energy Commission concludes that the storage, use, handling, and transportation of hazardous materials associated with the Rice Solar Energy Project will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

2. We therefore conclude that with implementation of the Conditions of Certification below, construction and operation of the Rice Solar Energy Project will comply with all applicable laws, ordinances, regulations, and standards (LORS) regarding long-term and short-term project impacts related to hazardous materials management.

## CONDITIONS OF CERTIFICATION

**HAZ-1** The project owner shall not use any hazardous materials not listed in **Hazardous Materials Appendix A**, below, or in greater quantities than those identified by chemical name in **Hazardous Materials Appendix A,** unless approved in advance by the Compliance Project Manager (CPM).

**Verification:** In the Annual Compliance Report to the CPM, the project owner shall provide a list of hazardous materials contained at the facility.

**HAZ-2** The project owner shall concurrently provide a Hazardous Materials Business Plan to the Hazardous Materials Division of the Riverside County Fire Department and the CPM for review. After receiving comments from the Hazardous Materials Division of the Riverside County Fire Department and the CPM, the project owner shall reflect all received recommendations in the final documents. If no comments are received from the county within 30 days of submittal, the project owner may proceed with preparation of final documents upon receiving comments from the CPM. Copies of the final Hazardous Materials Business Plan shall then be provided to the Hazardous Materials Division of the Fire Department for information and to the CPM for approval.

**Verification:** At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan to the CPM for approval.

**HAZ-3** The project owner shall develop and implement a Safety Management Plan for delivery of liquid hazardous materials. The plan shall include an approved route from the major interstate highways to the site, safety procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall apply during construction, commissioning, and operation of the power plant.

**Verification:** At least 60 days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

**HAZ-4** At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

1. Perimeter security consisting of fencing enclosing the construction area;
2. Security guards;
3. Site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
5. Protocol for contacting law enforcement, the CPM in the event of suspicious activity or emergency; and
6. Evacuation procedures.

**Verification:** At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

**HAZ-5** The project owner shall prepare a site-specific Operation Security Plan for the operational phase and shall be made available to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per Security Guidelines for the Electricity Sector NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least eight feet high around the Power Block and Solar Field;

2. Main entrance security gate, either hand operable or motorized;

3. Evacuation procedures;

4. Protocol for contacting law enforcement, the CPM in the event of suspicious activity or emergency;

5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;

6. a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;

   b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site.

7. Site access controls for employees, contractors, vendors, and visitors;

8. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate; and

9. Additional measures to ensure adequate perimeter security consisting of either:

   a. Security guard present 24 hours per day, seven days per week, **OR**

b. Power plant personnel on-site 24 hours per day, seven days per week and **one** of the following:

1) The CCTV monitoring system required in number 8 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100% of the perimeter fence to the power block, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **OR**

2) Perimeter breach detectors **or** on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power plant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the applicant.

**Verification:** At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify the CPM that a site-specific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

## SAMPLE CERTIFICATION (Attachment "A")

### Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company Name)

for employment at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above- named project.

_____

(Signature of Officer or Agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

**SAMPLE CERTIFICATION (Attachment "B")**

**Affidavit of Compliance for Contractors**

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company Name)

for contract work at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above- named project.

_____

(Signature of Officer or Agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

**SAMPLE CERTIFICATION (Attachment C)**

## Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

# Hazardous Materials
# Appendix A

## Hazardous Materials Proposed for Use
## at the
## Rice Solar Energy Project

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Hazardous Material | Relative Toxicity[1] and Hazard Class[2] | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Hydrogen | Low toxicity; Hazard class – Flammable gas | None Established | In generator cooling loop and "tube trailer"; total inventory of up to 63,000 SCF (335 pounds) if hydrogen cooled STG is used | Pressure safety tank, crash posts, pressure relief valves | Generator cooling |
| Sodium Hydroxide, 50% solution | High toxicity; Hazard class – Corrosive | PEL: 2 mg/m3 | Carbon steel tank; 8,500 gallons | Isolated from incompatible chemicals and secondary containment | Water treatment; Condensate polishing |
| Sodium Hypochlorite, 12.5% solution | High toxicity; Hazard class – Poison-B, Corrosive | Workplace Environmental Exposure Limit (WEEL) - STEL: 2 mg/m3 PEL: 0.5 ppm (TWA), STEL: 1 ppm as Chlorine TLV: 1 ppm (TWA), STEL: 3 ppm as Chlorine | Plastic tanks; 17,000 gallons total inventory (2 x 8,500 gallons) | Secondary containment | Raw water biocide; Potable water biocide; cooling water biocide |
| Sulfuric Acid, 29.5% solution | High toxicity; Hazard class – Corrosive, water reactive | PEL: 1 mg/m3 | Contained in batteries; 2,000 gallons total inventory | Isolated from incompatible chemicals and secondary containment | Battery electrolyte |
| Sulfuric Acid, 93% solution | High toxicity; Hazard class – Corrosive, water reactive | PEL: 1 mg/m3 | Lined, carbon steel tanks; 16,000 gallons total inventory (2 x 8,000 gallons) | Isolated from incompatible chemicals, and secondary containment | Cooling tower anti-scaling (pH control); wastewater neutralization |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Carbon Dioxide | Low toxicity; Hazard class – Non flammable gas | TLV: 5,000 ppm (9,000 mg/m3) TWA | Carbon steel tank, 15 tons maximum onsite inventory | Carbon steel tank with crash posts | Fire suppression |
| Hazardous Material | Relative Toxicity[1] and Hazard Class[2] | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Lube Oil | Low toxicity Hazard class – NA | None established | Carbon steel tanks, 10,000 gallons in equipment and piping, additional maintenance inventory of up to 550 gallons in 55gallon steel drums. | Secondary containment for tank and for maintenance inventory | Equipment lubrication |
| Mineral Insulating Oil | Low toxicity Hazard class – NA | None established | Carbon steel transformers; total onsite inventory of 32,000 gallons | Used only in transformers, secondary containment for each transformer | Large capacity transformers |
| Diesel Fuel | Low toxicity; Hazard class – Combustible liquid | PEL: none established TLV: 100 mg/m3 | Carbon steel tanks (21,000 gallons) | Stored in two 10,000 gallon tanks, secondary containment, plus two day tanks, one for each diesel fire pump. | Emergency generators and fire pumps |
| Nitrogen | Low toxicity; Hazard class – Non-flammable gas | None established | Carbon steel tank; 7,500 pounds total inventory | Carbon steel tank with crash posts | Blanketing and layup of steam plant |
| Hydraulic fluid | Low to moderate toxicity; Hazard class – Class IIIB combustible liquid | TWA (oil mist): 5 mg/m3 STEL: 10 mg/m3 | Carbon steel tanks and sumps; 500 gallons in equipment, maintenance inventory of 110 gallons in 55-gallon steel drums | Found only in equipment, with a small maintenance inventory. Maintenance inventory stored within secondary containment. | Steam turbine controls system |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Hazardous Material | Relative Toxicity[1] and Hazard Class[2] | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Water treatment chemical<br>NALCO Tri-Act 1800, or equal<br>Cyclohexlyamine (5 – 10%)<br>Monoehtanolamine (10 – 30%)<br>Methoxyproplyamine (10 – 30%) | High toxicity;<br>Hazard class – Corrosive, Class II Combustible liquid | Cyclohexlyamine =<br>TLV: 10 ppm (41 mg/m3)<br>Monoethanolamine =<br>TLV: 3 ppm (7.5 mg/m3)<br>TWA: 3 ppm (7.5 mg/m3)<br>STEL: 6 ppm (15 mg/m3)<br>Methoxyproplyamine =<br>TLV: 5 ppm TWA<br>STEL: 15 ppm | Plastic totes, 2 x 400 gallons each | Inventory management, isolated from incompatible chemicals and secondary containment | Condensate pH management |
| Water treatment chemical NALCO Elimin-Ox Carbohydazide (5 - 10%), or equal | Moderate toxicity;<br>Hazard class – Sensitizer | Carbohydazide = PEL: none established | Plastic totes, 2 x 400 gallons | Inventory management, isolated from incompatible chemicals and secondary containment | Condensate and feedwater $O_2$ management |
| Water treatment chemical<br>NALCO 3D Trasar 3DT185, or equal<br>Phosphoric Acid (60 -100%) | High toxicity;<br>Hazard class – Corrosive | Phosphoric acid =<br>PEL: 1 mg/m3 (TWA)<br>TLV: 1 mg/m3 (TWA),<br>STEL: 3 mg/m3 | Plastic totes, 2 x 400 gallons | Inventory management, isolated from incompatible chemicals and secondary containment | Cooling water corrosion control |
| Water treatment chemical<br>NALCO 3D Trasar 3DT177, or equal<br>Phosphoric acid | Moderate toxicity;<br>Hazard class – Irritant | Phosphoric acid =<br>PEL: 1 mg/m3 (TWA)<br>TLV: 1 mg/m3 (TWA),<br>STEL: 3 mg/m3 | Plastic totes, 2 x 400 gallons | Inventory management, isolated from incompatible chemicals and secondary containment | Cooling water corrosion control |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| (30%) | | | | | |
| Hazardous Material | Relative Toxicity1 and Hazard Class2 | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Water treatment | Low toxicity; | None established for | Plastic totes, 2 x 400 | Inventory management, isolated | Cooling water scale |
| chemical | Hazard class – Irritant | mixture | gallons | from incompatible chemicals and | control |
| NALCO 3D Trasar | | | | secondary containment | |
| 3DT190, or equal | | | | | |
| Water treatment | Low toxicity; | Sodium bromide = | Plastic totes, 2 x 400 | Inventory management, isolated | Cooling water |
| chemical | Hazard class – Irritant | PEL: none established | gallons | from incompatible chemicals and | oxidizing biocide |
| NALCO Acti-Brom | | | | secondary containment | |
| (R) 7342, or equal | | | | | |
| Sodium bromide | | | | | |
| Water treatment | Low to moderate | Sodium salt of | Plastic totes, 2 x 400 | Inventory management, isolated | Brine concentrator |
| chemical | toxicity; | phosphonomethylated | gallons | from incompatible chemicals and | preheater scale |
| NALCO pHreedom® 5200M, or equal | Hazard class – Irritant | diamine = PEL: none established | | secondary containment | control |
| Sodium salt of | | | | | |
| phosphonomethylat | | | | | |
| ed diamine | | | | | |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Water treatment | Low toxicity; | None established for | Plastic totes, 2 x 400 | Inventory management, isolated | Cooling water silica |
| chemical | Hazard class – Irritant | mixture | gallons | from incompatible chemicals and | scale control |
| NALCO PCL-1346, | | | | secondary containment | |
| or equal | | | | | |
| Water treatment | Low toxicity; | Sodium bisulfite = | Plastic totes, 2 x 400 | Inventory management, isolated | RO system – |
| chemical NALCO Permacare | Hazard class – Irritant | PEL: none established: TLV: 5 mg/m3 TWA | gallons | from incompatible chemicals and secondary containment | chlorine scavenger |
| (R) PC-7408, or | | | | | |
| equal | | | | | |
| Sodium bisulfite | | | | | |
| Hazardous Material | Relative Toxicity1 and Hazard Class2 | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Water treatment chemical | High toxicity; Hazard class – | Sodium hydroxide = PEL: 2 mg/m3 | Plastic totes, 2 x 400 gallons each | Inventory management, isolated from incompatible chemicals and | Boiler drum pH control |
| NALCO BT-3000, or | Corrosive | Sodium tripolyphosphate | | secondary containment | |
| equal | | = PEL: none established | | | |
| Sodium hydroxide | | | | | |
| Sodium | | | | | |
| tripolyphosphate | | | | | |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Water treatment | Moderate toxicity; | Sodium nitrite = | Plastic totes, 2 x 400 | Inventory management, isolated | Closed loop cooling |
| chemical | Hazard class – Toxic | PEL: none established | gallons each | from incompatible chemicals and | system corrosion |
| NALCO 8338, or | | Sodium tolytriazole = | | secondary containment | inhibitor |
| equal | | PEL: none established | | | |
| Sodium nitrite Sodium tolytriazole Sodium hydroxide | | Sodium hydroxide = PEL: 2 mg/m3 | | | |
| Welding gas | Moderate toxicity; | PEL: none established | Steel cylinders; 200 cubic | Inventory management, isolated | Welding gas |
| Acetylene | Hazard class – Toxic | | foot each, 800 cubic foot | from incompatible chemicals, | |
| | | | total on site | | |
| Welding gas | Low toxicity; | PEL: none established | Steel cylinders; 200 cubic | Inventory management, isolated | Welding gas |
| Oxygen | Hazard class – | | foot each, 800 cubic foot | from incompatible chemicals | |
| | Oxidizer | | total on site | | |
| Welding gas | Low toxicity; | PEL: none established | Steel cylinders; 200 cubic | Inventory management | Welding gas |
| Argon | Hazard class – | | foot each, 800 cubic foot | | |
| | Nonflammable gas | | total on site | | |
| Hazardous Material | Relative Toxicity1 and Hazard Class2 | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Activated Carbon | Non-toxic (when unsaturated), low to moderate toxicity when saturated, depending on the adsorbed material; Hazard class – combustible solid | TWA (total particulate): 15 mg/m3 TWA (respirable fraction): 5 mg/m3 TLV (graphite, all forms except graphite fibers): 2 mg/m3 TWA | Used in two x 2,000-lb canisters, 4,000 pounds total inventory, no additional storage | No excess inventory stored onsite, prompt disposal when spent | Production of potable water |
| Herbicide | Low toxicity; | Isoproplyamine salt of | Brought on site by licensed | Inventory management, isolated | Weed management |
| Roundup or | Hazard class - Irritant | glyphosphate = no | contractor, used | from incompatible chemicals | |
| equivalent | | specific occupational | immediately. Maximum of | | |
| | | exposure has been | 1 gallon stored onsite. | | |
| | | established | | | |
| Soil stabilizer | Non-toxic; | None established | Supplied in 55-gallon | Inventory management, isolated | Dust control |
| Active ingredient: | Hazard class - NA | | drums or 400-gallon totes, | from incompatible chemicals | |
| acrylic or vinyl | | | used immediately. | | |
| acetate polymer or | | | Maximum onsite storage of | | |
| equivalent | | | 55 gal | | |
| Aluminum Sulfate (50 | Moderate Toxicity | PEL: 2 mg(Al)/m3 | Plastic tank, 6,000 gallons | Inventory management, isolated | Water treatment |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| wt%), or Ferric | Hazard class - | | On-site storage. | from incompatible chemicals | system flocculating |
| Chloride (50 wt%), | Corrosive | | | | agent |
| or Ferric Sulfate | | | | | |
| (50 wt%) | | | | | |
| Sodium Sulfide / Sodium Hydrosulfide | Moderate Toxicity Hazard class - Corrosive | TWA: 10ppm (14mg/m3) STEL: 15ppm (21mg/m3) | Brought on site by licensed contractor. No storage onsite | No excess inventory stored onsite, prompt disposal when spent | Water treatment; precipitate heavy metals |
| Hazardous Material | Relative Toxicity1 and Hazard Class2 | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| Aqueous Ammonia | High Toxicity | TWA: 25ppm | Brought on site by licensed | No excess inventory stored | Boiler drum, steam, |
| (19% NH3 by weight) | Hazard class - | STEL: 35ppm | contractor. No storage | onsite, prompt disposal when | and feedwater |
| | Corrosive Liquid | PEL: 50ppm | onsite | spent | conditioner (pH |
| | | | | | control) |
| NALCO Permacare PC-33 or equal | Low Toxicity Hazard class – Corrosive Liquid | None established for product. Ingredient limits appear below. ACGIH/TLV: Sodium Hydroxide CEILING: 2 mg/m3 | 110 gallons (55 gallon drums) | Use plastic drums, inventory management and isolate from incompatible chemicals. | RO membrane high pH cleaners |
| | | OSHA/PEL: Sodium Hydroxide CEILING: 2 mg/m3 | | | |
| NALCO Permacare | Low Toxicity | None established | 110 gallons (55 gallon | Use plastic drums, inventory | RO membrane low |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| PC-77, or equal | Hazard class – Irritant | (contains no hazardous | drums) | management and isolate from | pH cleaners |
| | | ingredients) | | incompatible chemicals. | |
| NALCO Permacare | Low Toxicity | None established | Plastic Totes, 400 gallon | Inventory management, isolated | RO Antiscalant |
| PC-191, or equal | Hazard class - Irritant | (contains no hazardous | | from incompatible chemicals and | |
| | | ingredients) | | secondary containment | |
| Hazardous Material | Relative Toxicity1 and Hazard Class2 | Permissible Exposure Limit | Storage Description; Capacity | Storage Practices and Special Handling Precautions | Possible Uses |
| NALCO Permacare PC-11, or equal | High Toxicity Hazard class – Corrosive Liquid | None established for product. Ingredient limits appear below. Manufacturer's Recommendation: Dibromoacetonitrile CEILING: 0.1 ppm (Skin) 2,2-Dibromo-3-nitrilopropionamide CEILING: 2 mg/m3 AIHA/WEEL: Polyethylene Glycol TWA: 10 mg/m3 | Plastic Totes, 400 gallon | Inventory management, isolated from incompatible chemicals and secondary containment | Membrane cleaner and preservative |

| ANTICIPATED HAZARDOUS MATERIALS USED DURING PLANT OPERATION | | | | | |
|---|---|---|---|---|---|
| Propylene Glycol (Antifreeze) | Low Toxicity Hazard class – NA | None established | Plastic totes, 25 gallons onsite storage | Inventory management, isolated from incompatible chemicals | Antifreeze; closed cooling system anti-corrosive – compatible with different types of metals |

[1] Low toxicity is used to describe materials with an NFPA Health rating of 0 or 1. Moderate toxicity is used describe materials with an NFPA rating of 2. High toxicity is used to describe materials with an NFPA rating of 3. Extreme toxicity is used to describe materials with an NFPA rating of 4. [2] NA denotes materials that do not meet the criteria for any hazard class defined in the 1997 Uniform Fire Code. [3] Proprietary names are listed to provide indicative chemical product but is not intended to limit supplier, brand or product.

## F. WASTE MANAGEMENT

The Rice Solar Energy Project (RSEP) will generate nonhazardous and hazardous wastes during construction and operation. This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous and hazardous wastes. We also evaluate the project's compliance with applicable laws, ordinances, regulations, and standards (LORS). The LORS are identified in **Appendix A** to this Decision.

Nonhazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.)

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC). (See California Health and Saf. Code, § 25100 et seq.; Hazardous Waste Control Act of 1972, as amended; and Cal. Code Regs., tit. 22, § 66261.1 et seq.) State law requires hazardous waste generators to obtain U.S. EPA identification numbers and contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

The evidence on this topic was undisputed. Our findings and conclusions are based on the following evidence: 10/29/10 RT 21, Exs. 1, §5.14, 2 [Item 6], 3, 4 [159 – 168], 48, 200, § 6.13.

### SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Setting

The RSEP site is situated on 1,410 acres of privately owned land located in unincorporated eastern Riverside County, California. The northern portion of the project footprint is bounded by State Route 62, the Arizona and California (ARZC) railroad tracks, and the Colorado River Aqueduct. The former Camp Rice is situated along a portion of the eastern site boundary. South of the site is vacant land. To the west of the project site there is is vacant land, ARZC railroad tracks, and a paved road. (Ex. 200, p. 6.13-7.)

The RSEP site was historically used as a military airfield and training camp (Rice Army Airfield) in the 1940's, and as a public, civilian airport facility (Rice Airfield) until the 1950s. The site is vacant although remnant features from the former airfield remain. The remaining site features include two runways and associated apron hardstands and taxiways, building foundations, paved roads and pathways and associated litter. (Ex. 200, p. 6.13-9.)

2. Existing Site Conditions

The certification process requires a Phase I Environmental Site Assessment (ESA) to to identify potential or existing releases of hazardous substances or contamination at or adjacent to the project site, or within or adjacent to the project's linear corridors. If any hazardous conditions are identified, a Phase II ESA must be conducted to identify the extent of possible contamination and to discuss appropriate mitigation measures.

A Phase I ESA was prepared by the Applicant's consultants in accordance with the American Society for Testing and Materials Standard Practice E 1527-05 for ESAs. The ESA is dated September 24, 2009. The ESA did not identify any Recognized Environmental Conditions (RECs)[1] in connection with historic site operations or current activity but it did identify a number of potential areas of concern related to possible soil contamination.

In follow-up to the Phase I ESA, the Applicant's consultant completed a Limited Site Investigation that identified areas of potential environmental concern. The chemical analysis of various collected samples did not indicate that the corresponding site soils were impacted with high concentrations of hazardous substances associated with historic activities at the site. (Ex. 200, pp. 6.13-9, 6.13-10.)

No RECs were identified within the one-mile radius search of off-site areas. However, there is a soil mound in the project area that may have been used at General Patton's World War II (WWII) Desert Training Center, California-Arizona Maneuver Area region (DTC/CAMA) as part of a structure containing targets for aircraft gun testing. (Ex. 200, p. 6.13-10.) Also, 4.7 miles of the proposed RSEP generator tie line route and proposed interconnection substation site lie within the

[1] A REC is the presence or likely presence of any hazardous substances or petroleum products on a property under the conditions that indicated an existing release, past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or in the ground, groundwater, or surface water of the property.

DTC/CAMA Rice Valley Sand Dunes Formerly Used Defense Site (FUDS) - Training Area. The Training Area was used for a variety of training purposes some of which utilized munitions and explosives and/or munitions constituents. (Ex. 200, p. 6.13-10.)

Implementation of Staff-proposed Conditions of Certification **WASTE-1** and **WASTE-2** will adequately address any soil contamination contingency that may be encountered during project construction. Condition **WASTE-1** requires the project owner to make an experienced and qualified professional engineer or geologist available for consultation in the event contaminated soil is encountered. If contaminated soil is identified, **WASTE-2** requires the engineer or geologist must inspect the site, determine what is required to characterize the nature and extent of contamination, and provide a report to the Compliance Project Manager (CPM), BLM Authorized Officer (AO), and DTSC with findings and recommended actions including remediation if necessary. (Ex. 200, p. 6.13-10.)

3. Construction Impacts and Mitigation

Site preparation and construction of the RSEP and its associated facilities is expected to last approximately 30 months and generate both non-hazardous and hazardous wastes in solid and liquid forms.

Construction activities would generate an estimated 350 cubic yards of non-hazardous solid wastes, consisting of scrap wood, steel, glass, plastic, scrap metal, and paper. (Ex. 200, pp. 6.13-11 – 6.13-14 [Table 2].) Of these items, recyclable materials would be separated and removed to the extent reasonably possible, and transported to recycling facilities. Non-recyclable solid materials (insulation, other plastics, food waste, roofing materials, vinyl flooring and base, carpeting, paint containers, packing materials, etc.) would be disposed of at a Class III landfill. (Ex. 200, p. 6.13-11.)

Non-hazardous liquid wastes would be generated during construction, and would include equipment washdown water, emission control scrubbing solution purge, storm water runoff and sanitary waste. Storm water runoff would be managed in accordance with appropriate LORS. Sanitary wastes would be pumped to tanker trucks by licensed contractors for transport to a sanitary wastewater treatment plant. See the **Soil and Water Resources** section of this Decision for further discussion of wastewater management. (Ex. 200, p. 6.13-14.)

During construction, anticipated hazardous wastes include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Estimated amounts are 60 empty containers, 7,500 gallons of oils, solvents, and adhesives (every 90 days), and 36 batteries (per year). Empty hazardous material containers would be returned to the vendor or disposed of at a hazardous waste facility; solvents, used oils, paint, oily rags, and adhesives would be recycled or disposed of at a hazardous waste facility; and spent batteries would be transported to a recycling facility. (Ex. 200, p. 6.13-14.)

To address any construction-related impacts, the project owner must develop and implement a Construction Waste Management Plan – before construction can begin - as required by Condition of Certification **WASTE-3.** Condition **WASTE-3** ensures that the waste will be properly handled and temporarily stored when on-site and when transported off-site either recycled when possible or properly disposed. Furthermore, to ensure site workers are properly trained to recognize, avoid, and report unexploded ordnance (UXO), Condition of Certification **WASTE-4** requires the project owner to develop a UXO identification training and reporting procedures program. The UXO training program must include the identification of trained UXO ordnance experts that are available to complete removal of UXO and supplemental geophysical surveys to search for additional or buried ordnance. (Ex. 200, pp. 6.13-10 - 6.3-11.)

**WASTE-5** requires the project owner to obtain a hazardous waste generator identification number from the U.S. Environmental Protection Agency before generating construction and operations hazardous waste. This would ensure compliance with California Code of Regulation, Title 22, Division 4.5. (Ex. 200, pp. 6.13-14 - 6.13-15.)

Hazardous waste will be collected in hazardous waste accumulation containers and stored in a laydown area, warehouse/shop area, or storage tank on equipment skids for less than 90 days. The accumulated wastes will then be properly manifested, transported, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies. If any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner is required by Condition of Certification **WASTE-6** to notify the CPM of such action. (Ex. 200, p. 6.13-15.)

As discussed above, if construction activities result in workers encountering potentially contaminated soils, compliance with Conditions of Certification

**WASTE-1** and **WASTE-2** will ensure that appropriate measures are taken to address any soil contamination contingency in accordance with applicable LORS. (Ex. 200, p. 6.13-15.)

4. Operation Impacts and Mitigation

During operation, the project will generate hazardous and non-hazardous wastes subject to regulatory review. (Exs. 1, pp. 5.14-6 – 5.14-8; 200, pp. 6.13-16.) **Waste Management Table 1** below summarizes the anticipated operation waste streams, estimated waste quantities, and proposed disposal methods.

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**Waste Management Table 1**
**Wastes Generated during Operations**

| Waste | Origin | Composition | Estimated Quantity | Classification | Disposal |
|---|---|---|---|---|---|
| Lubricating oil | Small leaks and spills from the steam turbine lubricating oil system and routine maintenance of the steam turbine | Hydrocarbons | 200 gallons | Hazardous | Recycled by certified oil recycler |
| Lubricating oil filters | Steam turbine lubricating oil system | Paper, metal and hydrocarbons | 950 lb per year | Hazardous | Recycled by certified oil recycler |
| Solvents, paint, adhesives | Operation of facility | Varies | 110 lb per month | Hazardous | Recycled by certified oil recycler |
| Clarifier solids slurry | Water treatment process | Moist filter cake sludge | 25 lb per day | Expected to be nonhazardous, but will be tested | Appropriate landfill |
| Oily rags | Maintenance, wipe down of equipment, etc. | Hydrocarbons and cloth | 600 lb per year (500 rags per year) | Hazardous | Recycled by certified oil recycler |
| Oil sorbents | Cleanup of small spills | Hydrocarbons | 375 lbs per year | Hazardous | Recycled or disposed of by certified oil recycler |
| Sewage solids and liquids | Sanitary waste from buildings | Sewage sludge and grey water | Approx. 400 gallons per day | Nonhazardous | Solids trucked off site, as needed to treatment facility by cleaning of septic tank, grey water to leach field. |

Source: RSEP AFC Table 5.14-2 page 5.14-7

Before operations can begin, the project owner must develop and implement an Operations Waste Management Plan as required by Condition of Certification **WASTE-7**. Compliance with this condition will ensure that an accurate record is maintained of the project's waste storage, generation, and disposal; and that compliance with waste management regulations is maintained during operation. (Ex. 200, p. 6.13-17.)

Non-hazardous solid wastes generated during project operations would consist of glass, paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes. All non-hazardous solid wastes will be recycled to the extent feasible, and non-recyclable wastes will be regularly transported to a local solid waste disposal facility in accordance with applicable LORS. The project would generate approximately 10 cubic yards per year of non-hazardous waste (excluding sewage). (Exs. 1, pp. 5.14-6 – 5.14-8; 200, pp. 6.13-17.)

Management of non-hazardous liquid wastes is described in the **Soil and Water Resources** section of this Decision.

The project owner/operator would be considered the generator of hazardous wastes at the site during facility operations. Therefore, the project owner's unique hazardous waste generator identification number, to be obtained prior to construction in accordance with Condition of Certification **WASTE-5**, must be retained and used for managing and disposing of hazardous waste generated during facility operation. (Ex. 200, p. 6.13-17.)

RSEP routine operation will generate waste that includes oily absorbent and spent filters and used hydraulic fluid. In addition, spills and unauthorized releases of hazardous materials or hazardous wastes may generate contaminated soils or cleanup materials that may also require management and disposal as hazardous waste. Proper hazardous material handling and good housekeeping practices will help keep spill wastes to a minimum.

However, to ensure proper cleanup and management of any contaminated soils or waste materials generated from hazardous materials spills, Condition of Certification **WASTE-8** requires the project owner to ensure that all accidental spills or unauthorized releases of hazardous substances, materials, and waste are documented and remediated in accordance with all applicable LORS. Further discussion of project hazardous materials spill reporting, containment,

and control; and countermeasures plan provisions for the project, is included in the **Hazardous Materials Management** section of this Decision.

The evidence indicates that the amount of hazardous wastes generated during operation of the RSEP will be minor, with source reduction and recycling of wastes implemented whenever possible. The hazardous wastes will be temporarily stored on-site, transported off-site by licensed hazardous waste haulers, and recycled or disposed of at authorized disposal facilities in accordance with established standards applicable to generators of hazardous waste. (See, e.g., Cal. Code Regs., tit. 22, § 66262.10 et seq.). If any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner is required by Condition of Certification **WASTE-6** to notify the CPM of such action. (Ex. 200, pp. 6.13-17 - 6.13-18.)

5. Closure and Decommissioning Impacts

The closure or decommissioning of the RSEP would produce both hazardous and non-hazardous solid and liquid waste. The project's **General Compliance** Conditions of Certification, including the Compliance Monitoring and Closure Plan (Compliance Plan), are required by Public Resources Code section 25532. The plan provides a means for assuring that the facility is constructed, operated and closed in compliance with public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the Energy Commission. Required elements of a facility's closure will be outlined in a Facility Closure Plan as specified in Conditions of Certification **Compliance-12**, **-13** and **-14**.

To ensure adequate review of a planned project closure, the project owner must submit a proposed Facility Closure Plan to the Energy Commission for review and approval at least 12 months prior to commencement of closure activities (or at some other time agreed to by the CPM). The Facility Closure Plan will document non-hazardous and hazardous waste management practices, including the inventory, management, and disposal of hazardous materials and wastes, and permanent disposal of permitted hazardous materials and waste storage units. (Ex. 200, p. 6.13-18.)

The handling and management of waste generated by the RSEP would follow the hierarchical approach of source reduction, recycling, treatment, and disposal, as specified in Public Resources Code Sections 40051 and 40196. The first priority of the project owner will be to use materials that reduce the waste that is

generated. The next level of waste management will involve reusing or recycling wastes. For wastes that cannot be recycled, treatment will be used, if possible, to make the waste nonhazardous. Finally, waste that cannot be reused, recycled or treated would be transported off-site to a permitted treatment, storage, or disposal facility.

As discussed below, the evidence shows that there will be adequate landfill capacity available to dispose of both non-hazardous and hazardous waste from the closure or decommissioning of the proposed project. Conditions of Certification **WASTE-4** through **-6** and -**8** will continue to apply to the RSEP during closure or decommissioning of the project. In addition, the Applicant would be required to address waste disposal associated with project demolition as part of its Facility Closure Plan in conformance with all applicable LORS. (Ex. 200, p. 6.13-18.)

6. Potential Impacts on Waste Disposal Facilities

The Integrated Waste Management Act of 1989 [Assembly Bill (AB) 939, Sher, Chapter 1095, Statutes of 1989] set landfill waste diversion goals of 50 percent (by 2000) for local jurisdictions. To meet this goal, many jurisdictions require applicants for construction and demolition projects to submit a reuse/recycling plan for at least 50 percent of C&D materials prior to the issuance of a building or demolition permit. While the proposed project is not responsible to a local jurisdiction (Riverside County does not have a construction and demolition waste diversion ordinance), we have included a requirement in Condition **WASTE-3** for the project owner to provide a reuse/recycling plan for construction and demolition materials that meets or exceeds the 50 percent waste diversion goal. (Ex. 200, p. 6.13-15.) Compliance with Condition **WASTE-3** will ensure that project wastes are managed properly and that the project's potential impacts on local landfills are maintained at insignificant levels.

Construction and operation of the proposed project would respectively generate approximately 350 cubic yards and 10 cubic yards per year of nonhazardous solid waste (wood, paper/cardboard, glass, plastic, insulation, and concrete), respectively. The waste will be stored on-site for less than 30 days, and then recycled or disposed of in a Class III landfill. (Ex. 200, pp. 6.13-18 - 6.13-19.)

Under CEQA Guidelines, the project could result in a significant environmental impact if it is: (1) located on a site included on a list of hazardous materials sites ("Cortese List"), and/or (2) have solid waste disposal needs beyond the capacity

of appropriate landfills to accommodate the project's waste disposal needs. (CEQA Guidelines section 15002(G), Appendix G.)

Approximately 5 miles of the RSEP's 10-mile generator tie line and its access road are within the boundaries of the Rice Valley Sand Dunes. The evidence indicates that the Rice Valley Sand Dunes is the nearest Cortese-listed property. The Rice Valley Sand Dunes site was used for military training and maneuvers during World War II and in the 1960s was used as part of an interservice training mission known as Joint Exercise Desert Strike. The primary concern with this site is its past use as an artillery range and firing range for small arms, and the resulting potential for munitions and explosives of concern. Indeed, the northwestern third of the site is believed to be contaminated with subsurface unexploded ordnance. (Ex. 1, p. 5.14-9.) The site is listed as having active cleanup status with the Department of Toxic Substance Control as the lead agency for site cleanup. (Ex. 1, pp. 5.14-8 – 5.14-9.) The project is not expected to be affected by the Rice Valley Sand Dunes site.

Desert Center and Blythe Sanitary Landfill are two solid waste disposal facilities located in Riverside County that could potentially take the non-hazardous construction and operation wastes generated by the RSEP. The remaining combined capacity of the Desert Center and Blythe Sanitary Landfills are currently over 2.3 million cubic yards. The total amount of non-hazardous solid waste generated from project construction is estimated to be 349 cubic yards, and the total amount from lifetime operations is estimated to be 274 cubic yards (for 30 years). The total non-recyclable solid waste would consume much less than 1 percent of the available landfill capacity. The evidence shows that there will be adequate landfill capacity available to dispose of both non-hazardous and hazardous waste from the closure or decommissioning of the proposed project. Conditions of Certification **WASTE-5** through **-8** will continue to apply to RSEP during closure or decommissioning of the project. Thus, it appears that disposal of the solid wastes generated by the RSEP can occur without substantially impacting the capacity or remaining life of any of these facilities. (Ex. 200, p. 6.13-19.)

Hazardous wastes generated during construction and operation would be recycled to the extent possible and practical. Those wastes that cannot be recycled would be transported off site to a permitted treatment, storage, or disposal facility. The evidence shows that approximately 47 cubic yards of recyclable and non-recyclable hazardous waste would be generated over the 30-month construction period. Approximately 127 cubic yards of hazardous non-

recyclable waste would be generated over the 30-year operating lifetime. (Ex. 200, p. 6.13-19.)

Two hazardous waste (Class I) disposal facilities are currently accepting waste and could be used to manage RSEP hazardous wastes: the Clean Harbors Buttonwillow Landfill in Kern County, and the Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and Class III wastes. In total, there is a combined excess of 10 million cubic yards of remaining hazardous waste disposal capacity at these landfills, with at least 30 years remaining in their operating lifetimes. In addition, the Kettleman Hills facility is in the process of permitting an additional 4.6 to 4.9 million cubic yards of disposal capacity, and the Buttonwillow facility has 30 years to reach its capacity at its current disposal rate. Thus, hazardous wastes from the RSEP requiring off-site disposal would not substantially impact the remaining capacity of either Class I waste facility. (Ex. 200, p. 6.13-19.)

7. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., tit. 14, § 15130.) NEPA states that cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7.)

There is the potential for substantial future development in eastern Riverside County and throughout the southern California desert region. (Ex. 200, § 5. pp. 5-1 - 5-16.) The geographic area of concern is Riverside County, which is the location of the closest large Class III landfills. The waste facilities in the County are most likely to be used for disposal of waste generated by the RSEP.

According to the evidence, cumulative impacts could occur within Riverside County if the RSEP is implemented in combination with other local or regional projects. Cumulative impacts could also occur as a result of development of some of the many proposed solar and wind development projects that have been or are expected to be under consideration by the BLM and the Energy Commission in the near future. Many of these projects are located within the

California Desert Conservation Area, as well as on BLM land in Nevada and Arizona. (Ex. 200, p. 6.13-25.)

The record identifies existing projects in the Rice valley area and eastern Riverside County (Ex. 200, pp. 5-8 – 5-10 [Table 2]) and future foreseeable projects in the same area (Ex. 200, pp. 5-11 – 5-16 [Table 3].)

The evidence shows that generally with respect to future foreseeable projects, the RSEP will generate non-hazardous solid waste that would add to the total waste generated in Riverside County because non-hazardous solid waste generated by all of the past, present, and reasonably foreseeable projects will also be disposed of within Riverside County. However, most of the reasonably foreseeable projects are expected to generate smaller volumes of non-hazardous waste than the RSEP because wind and photovoltaic projects will not generate wastes associated with construction and operation of a power block. (Ex. 200, pp. 6.13-25 - 6.13-26.)

Specifically regarding foreseeable projects in the RSEP area, Staff used a value of 100 cubic yards/MW as a rough guide for determining total volume of non-hazardous solid wastes that could result from all of the identified projects.

**Waste Management Table 2** below identifies foreseeable projects in the project area.

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| Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County - | | | | | | |
|---|---|---|---|---|---|---|
| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
| **Future Foreseeable Projects in the Rice Valley area within 15-20 miles of proposed project** | | | | | | |
| A | Three Colorado River Aqueduct Rehabilitation Projects | Iron Mountain Pump Plant, ~18 miles northwest of proposed Rice project | Metropolitan Water District of Southern California | Under Construction | N/A | Metropolitan Water District of Southern California proposes to repair the delivery line expansion joints at the Iron Mountain Pumping Plant, located approximately 18 miles northwest of the proposed project. The work is scheduled to be complete February of 2011. |
| B | Ward Valley, Leopold Companies, Inc | San Bernardino County, ~5 miles northwest of proposed Rice project in the Ward Valley | Leopold Companies, Inc. | Plan of Development in to Needles BLM | 8,000 | 750 MW solar thermal power plant proposed in the Ward Valley approximately 5 miles northwest of the proposed Rice Solar Energy project. |
| **Additional Future Foreseeable Projects Outside 15-20 mile Boundary in Eastern Riverside County** | | | | | | |
| C | Colorado River Substation | 1.5 miles south of Interstate 10 and 4.75 miles east of Wileys Well Road | SCE | | 140 | Expand the 500-kV switchyard, previously approved as part of the DPV2 CPCN on approximately 45 acres of land, into a full 500/220-kV substation on approximately 90 acres of land. |
| D | Desert Quartzite | South of I-10, 8 miles southwest of Blythe | First Solar (previously OptiSolar) | Plan of Development in to BLM | 7,724 | 600 MW solar photovoltaic project located on 7,724 acres. Adjacent to DPV transmission line and SCE Colorado Substation. Approximately 27 AF would be used during construction and 3.8 AFY during operation. |
| E | Killbeck | 26 miles northwest of proposed Rice project | Boulevard Associates | Plan of Development in to Needles BLM | 12,046 | 1,000 MW solar thermal power plant located 26 miles northwest of proposed Rice project. |

Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County -

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| F | Cadiz Lake | 26 miles west of proposed Rice project | Boulevard Associates | Plan of Development in to Needles BLM | 35,639 | 1,000 MW solar thermal power plant located 26 miles west of proposed Rice project. |
| G | Desert Sunlight | 35 miles southwest of proposed Rice project | First Solar | Undergoing environmental review | 5,128 | 550 MW solar photovoltaic project located 6 miles north of Desert Center in eastern Riverside County. The project footprint is 4,410 acres and the BLM ROW application is for 5,128 acres. Project would tie into the SCE Red Bluff substation. Approximately water usage is; 27 AFY of during construction and 3.8 AFY during operation. |
| H | EnXco 1 | 36 miles southwest of proposed Rice project | EnXco Development, LLC | Plan of Development in to Palm Springs BLM | 1,327 | 300 MW solar thermal power plant located north of Desert Center. |
| I | Chuckwalla Solar I | 35 miles southwest of proposed Rice project, 1 mile north of Desert Center | Chuckwalla Solar I, LLC | Plan of Development submitted to BLM | 4,099 | 200 MW solar photovoltaic project on 4,099 acres of land. Project would be developed in several phases and would tap into an existing SCE 161-kV transmission line crossing the site. |
| J | Palen Solar Power Project | 33 miles southwest of proposed Rice project, 10 miles east of Desert Center | Solar Millennium, LLC/Chevron Energy | Undergoing environmental review; construction to begin end of 2010. | 5,213 | 500 MW solar trough project on 5,213 acres. Facility would consist of two 250 MW plants. Approximately 3,870 acres would be disturbed. Project would include interconnection to the SCE Red Bluff Substation. Project would use 300 AFY of water. |
| K | Genesis Solar Energy Project | 30 miles south of proposed Rice project, north of I-10, near Ford Dry Lake | NextEra (FPL) | Undergoing environmental review. Construction to begin at the end of 2010. | 4,535 | 250 MW solar trough project located on 4,535 acres north of the Ford Dry Lake. Project includes six-mile natural gas pipeline and a 5.5 mile gen-tie line to the Blythe Energy Center to Julian Hinds Transmission Line, and then travels east on shared transmission poles to the Colorado River Substation. |

Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County -

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| L | Blythe Solar Power Project | 26 miles southeast of proposed Rice project | Solar Millennium. LLC/Chevron Energy | Undergoing environmental review | 9,481 | 1,000 MW solar trough facility on 9,481 acres |
| M | McCoy Project | 20 miles south of proposed Rice project | EnXco development, LLC | Plan of Development in to Palm Springs BLM | 20,608 | 250 MW solar trough project. ROW in process for monitoring water well drilling. |
| N | Big Maria Vista Solar Project | 14 miles south of proposed Rice project | Bullfrog Green Energy | Plan of Development submitted to BLM | 22,717 | 500 MW solar photovoltaic project, BLM ROW application is for 22,717 acres of land. Project would be built in three phases and would require 6,000 gallons of water monthly. |
| O | Four Commercial Projects | Blythe, CA | Various | Approved | N/A | Four commercial projects have been approved by the Blythe Planning Department including the Agate Road Boat & RV Storage, Riverway Ranch Specific Plan, Subway Restaurant and Motel, and Agate Senior Housing Development. |
| P | Intake Shell | Blythe, CA | | Under Construction | N/A | Reconstruction of a Shell facility located at Intake & Hobsonway. Demolition occurred in 2008, reconstruction planned for 2009-2010. |
| Q | Eighteen Residential Developments | Blythe, CA | Various | Approved/Under Construction | N/A | Fifteen residential development projects have been approved by the Blythe Planning Department including: Vista Palo Verde (83 Single Family Residential [SFR]), Van Weelden (184 SFR), Sonora South (43 SFR), Ranchette Estates (20 SFR), Irvine Assets (107 SFR), Chanslor Village (79 SFR), St. Joseph's Investments (69 SFR), Edgewater Lane (SFR), The Chanslor Place Phase IV (57 SFR), Cottonwood Meadows (103 Attached SFR), Palo Verde Oasis Phase IV (29 SFR).<br>Three residential development projects have been approved and are under construction including: The Chanslor Phase II & III (78 SFR), River Estate at Hidden Beaches, Mesa Bluffs Villas (26 Attached SFR). |

| Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County - | | | | | | |
|---|---|---|---|---|---|---|
| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
| R | Blythe PV Project | Blythe, CA | First Solar | CPUC approved project terms of a 20 year power purchase agreement for sale of 7.5 MW under construction in forth quarter, 2009 | 200 | 7.5 MW solar photovoltaic project located on 200 acres. Project was constructed by First Solar and sold to NRG Energy. |
| S | Blythe Energy Project Transmission Line | From the Blythe Energy Project (Blythe, CA) to Devers Substation | Blythe Energy, LLC | Under construction | N/A | Transmission Line Modifications including upgrades to Buck Substation, approximately 67.4 miles of new 230-kV transmission line between Buck Substation and Julian Hinds Substation, upgrades to the Julian Hinds Substation, installation of 6.7 miles of new 230-kV transmission line between Buck Substation and SCE's DPV 500-kV transmission line. |
| T | Green Energy Express Transmission Line Project | 70-mile transmission line from the Eagle Mountain Substation to southern California | Green Energy Express, LLC | September 9, 2009, Green Energy Express, LLC filed a Petition for Declaratory Order requesting that FERC approve certain rate incentives for the project | N/A | 70-mile double-circuit 500-kV transmission line and new 500/230-kV substation from near the Eagle Mountain Substation (eastern Riverside County) to Southern California |
| U | Blythe Energy Project II | Blythe, CA. Near the Blythe Airport and I-10 | Blythe Energy, LLC | Approved December 2005 | 30 acres (located on Blythe Energy Project land) | 520 MW combined-cycle power plant located entirely within the Blythe Energy Project site boundary. Blythe Energy Project II will interconnect with the Buck Substation constructed by WAPA as part of the Blythe Energy Project. Project is designed on 30 acres of a 76-acre site. |

| Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County - | | | | | | |
|---|---|---|---|---|---|---|
| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
| V | Eagle Mountain Pumped Storage Project | Eagle Mountain iron ore mine, north of Desert Center | Eagle Crest Energy Company | License application filed with FERC in June 2009 | 1,524 | 1,300 MW pumped storage project designed to store off-peak energy to utilize during on-peak hours. The captured off-peak energy will be used to pump water to an upper reservoir where the energy will be stored. The water will then be released to a lower reservoir through an underground electrical generating facility where the stored energy will be released back into the Southwestern grid during "high demand peak" times, primarily weekdays. Estimated water use is 8,100 AFY for the first four-year start-up period and replacement water is 1,763 AFY thereafter. |
| W | Blythe Airport Solar I Project | Blythe Airport, 31 miles south of proposed Rice Solar project | U.S. Solar | Application has been submitted to City of Blythe; City of Blythe approved the project in November, 2009 | 640 | 100 MW solar photovoltaic project located on 640 acres of Blythe airport land. |
| X | Red Bluff Substation | South of Desert Center | SCE | | N/A | Proposed 230/500-kV Substation near Desert Center. Planned to interconnect renewable projects near Desert Center with the Devers-Palo Verde transmission line. |
| Y | Chuckwalla Valley Raceway | Desert Center Airport (no longer a functioning airport) | Developer, Matt Johnson | Under construction, track expected to be open in mid 2010 | 400 | Proposed 500-mile race track located on 400 acres of land that used to belong to Riverside County and was used as the Desert Center airport. |

Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County -

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| Z | Eagle Mountain Landfill Project | Eagle Mountain, North of Desert Center | Mine Reclamation Corporation and Kaiser Eagle Mountain, Inc. | U.S. Court of Appeals for the Ninth Circuit issued its ruling regarding the EIS for the project in 11/09 and ruled that the land exchange for the project was not properly approved by the administrative agency. Kaiser's Mine and Reclamation is considering all available options. | ~ 3,500 | The project proposed to develop the project on a portion of the Kaiser Eagle Mountain Mine in Riverside County, California. The proposed project comprises a Class III nonhazardous municipal solid waste landfill and the renovation and repopulation of Eagle Mountain Townsite. The proposal by the proponent includes a land exchange and application for rights-of-way with the Bureau of Land Management and a Specific Plan, General Plan Amendment, Change of Zone, Development Agreement, Revised Permit to Reclamation Plan, and Tentative Tract Map with the County. The Eagle Mountain landfill project is proposed to accept up to 20,000 tons of non-hazardous solid waste per day for 50 years. |
| AA | Wiley Well Communicatio n Tower (part of the Public Safety Enterprise Communicatio n System) | East of Wileys Well Road, just south of I-10 | Riverside County | Final EIR for the Public Safety Enterprise Communication System published in August 2008. | N/A | The Public Safety Enterprise Communication project is the expansion of the County of Riverside's fire and law enforcement agencies approximately 20 communication sites to provide voice and data transmission capabilities to assigned personnel in the field. |
| AB | Desert Southwest Transmission Line | 118 miles primarily parallel to DPV | Imperial Irrigation District | Final EIR prepared 2005. Approved by the BLM in 2006. | N/A | New, approximately 118-mile 500-kV transmission line from a new substation/switching station near the Blythe Energy Project to the existing Devers Substation located approximately 10 miles north of Palm Springs, California. |

| Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County - | | | | | | |
|---|---|---|---|---|---|---|
| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
| AC | Mule Mountain Solar Project | South of I-10, approximately 4 miles west of Blythe | Bullfrog Green Energy | Plan of Development in to Palm Springs BLM | 2,684 | 500 MW solar concentrating photovoltaic project located on 2,684 acres. Considering interconnection with proposed SCE Colorado Substation. Approximately 6,000 gallons of water would be required monthly. |
| Additional Projects Outside Cumulative Figure Boundaries | | | | | | |
| | Proposed National Monument (former Catellus Lands) | Between Joshua Tree National Park and Mojave National Preserve | | In December 2009, Senator Feinstein introduced bill S.2921 that would designate two new national monuments including the Mojave Trails National Monument. | 941,000 acres | The proposed Mojave Trails National Monument would protect approximately 941,000 acres of federal land, including approximately 266,000 acres of the former railroad lands along historic Route 66. The BLM would be given the authority to conserve the monument lands and also to maintain existing recreational uses, including hunting, vehicular travel on open roads and trails, camping, horseback riding and rock hounding. |
| | BLM Renewable Energy Study Areas | Northwest of Rice Solar project in San Bernardino County and along the I-10 corridor | BLM | Proposed | N/A | The DOE and BLM identified 24 tracts of land as Solar Energy Study Areas in the BLM and DOE Solar PEIS. These areas have been identified for in-depth study of solar development and may be found appropriate for designation as solar energy zones in the future. |
| | Solar Energy projects along Arizona Border | Approximately 15 miles east of the CA/AZ border along I-10 corridor | Various | Applications filed in to Arizona BLM field offices, application status listed as pending. | N/A | Five solar trough and solar power tower projects have been proposed along the I-10 corridor approximately 15 miles east of the CA/AZ border. The projects have been proposed on BLM administered-land in the Yuma and Kingman Field Offices and have requested use of approximately 75,000 acres. |

Table 2. Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County -

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| | Paradise Valley "New Town" Development | Approximately 30 miles west of Desert Center (7 miles east of the city of Coachella) | Glorious Land Company | Notice of Preparation of an EIR published in December of 2005. Still under environmental review. | 6,397 | Company proposed to develop a planned community as an international resort destination with residential, recreational, commercial, and institutional uses and facilities. The project is planned as a self-contained community with all public and quasi-public services provided. The project is located outside the Coachella Valley Water District (CVWD) boundaries and the applicant has entered into an agreement with the CVWD to manage artificial recharge of the Shaver's Valley groundwater. The proponent has purchased a firm water supply from Rosedale-Rio Bravo Water District in Kern County. In-kind water will be transferred to the MWD which will release water from the Colorado River Aqueduct to a 38 acre percolation pond on the project site. The MWD will deliver approximately 10,000 AFY to the percolation pond and over the long term, no net loss of groundwater in storage is anticipated. |

Approximately 450,000 cubic yards are expected to be generated from these projects. This is less than one percent of the almost 200,000,000 cubic yards of Class III landfill capacity available to these generators. Based on this information, we conclude that the non-hazardous waste generated by the RSEP will not contribute substantially to diminishing Class III landfill capacity in Riverside County

And, as stated above, the non-recyclable component of the 60 cubic yards of total lifetime hazardous waste from the RSEP will not impact the capacity or remaining life of the Class I waste facilities. Approximately 16,000 cubic yards of lifetime hazardous waste are expected to be generated by the projects listed in **Waste Management Table 2** above. This is less than one percent of the almost 10,000,000 cubic yards of Class I landfill capacity available to the identified. Based on this information, we conclude that hazardous waste generated by the RSEP will not contribute substantially to diminishing available Class I landfill capacity. (Ex. 200, p. 6.130-26.)

As to foreseeable renewable projects proposed for the California desert, implementation of the multiple solar and wind projects and other planned non-energy projects, the evidence indicates that these projects will (1) result in an increase in generation of hazardous and non-hazardous solid and liquid wastes and and (2) add to the total quantity of wastes generated throughout the desert. However, project wastes are expected to be recycled wherever practical and sufficient capacity is available throughout the area, especially with the addition of the Mesquite Regional Landfill with a capacity of 600 million tons that is scheduled to be fully operational by 2012. Therefore, we find that the impacts of the RSEP, when combined with impacts of projects currently proposed within the California desert will not contribute substantially to diminishing regional landfill capacity. (Ex. 200, pp. 5-5 – 5-8 [Tables 1A and 1B], p. 6.13-26.)

8. Compliance with LORS

As discussed above we conclude that our adoption of the Conditions of Certification below will ensure that the proposed RSEP complies with CEQA and all other applicable LORS (as identified in **Appendix A** to this Decision) regulating the management of hazardous and non-hazardous wastes during both facility construction and operation. (Exs.1, pp. 5.14-16 – 5.14-20; 200, p. 6.13-27.)

## FINDINGS OF FACT

Based on the evidence, the Commission makes the following findings:

1. The project will generate nonhazardous and hazardous wastes during excavation, construction, and operation.

2. A Phase I Environmental Site Assessment (ESA) was completed for the project.

3. A Limited Site Investigation was conducted for the project which included the chemical analysis of 44 soil samples. The results indicated that there were no contaminants that would pose a health, and/or safety risk to RSEP personnel working at the project site.

4. No recognized environmental conditions (REC) were identified within the one-mile radius search of off-site areas.

5. The project area is located within General Patton's World War II (WWII) Desert Training Center, California-Arizona Maneuver Area region (1942 to 1944) and there is potential for unexploded ordinance (UXO) at the project site.

6. Conditions of Certification **WASTE-1** and **WASTE-2** adequately address any soil contamination contingency that may be encountered during construction of the project and ensure compliance with LORS.

7. The project owner would be required to develop and implement a Construction Waste Management Plan per proposed Condition of Certification **WASTE-3** to ensure that the waste will be properly handled and temporarily stored when on-site and when transported off-site either recycled when possible or properly disposed.

8. The project owner will be required to develop a UXO identification training and reporting procedures program per proposed Condition of Certification **WASTE-4** to ensure site workers are properly trained to recognize, avoid, and report UXO.

9. The project owner would be required to obtain a unique hazardous waste generator identification number for the site prior to starting construction, pursuant Condition of Certification **WASTE-5**.

10. Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by proposed Condition of Certification **WASTE-6** to notify the Compliance Project Manager (CPM) whenever the owner becomes aware of this action.

11. Condition **WASTE-7** requires the Project Owner to develop and implement an Operation Waste Management Plan to identify all waste streams and the methods of managing each waste.

12. Condition of Certification **WASTE-8** requires the project owner/operator to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements.

13. The disposal of the solid wastes generated by RSEP can occur without significantly impacting the capacity or remaining life of any of the facilities located in Riverside County.

14. Solid nonhazardous wastes that cannot be recycled will be deposited at Class II and III landfills in the local area.

15. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the **Soil and Water Resources** section of this Decision.

16. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

## CONCLUSIONS OF LAW

1. Implementation of the Conditions of Certification, below, and the waste management practices described in the evidentiary record will reduce potential impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.

2. The management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portions of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**WASTE-1** The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The professional engineer or professional geologist shall be given authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil and impact public health, safety and the environment.

**Verification:** At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

**WASTE-2** If potentially contaminated soil is identified during site characterization, demolition, excavation or grading at either the proposed site or linear facilities, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the professional engineer or professional geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, representatives of Department of Toxic Substances Control or Regional Water Quality Control Board, the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the CPM, and representatives of the Department of Toxic Substances Control or Regional Water Quality Control Board, for guidance and possible oversight.

**Verification:** The project owner shall submit any reports filed by the professional engineer or professional geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

**WASTE-3** The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility and shall submit the plan to the CPM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications; and

- Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies

providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans. The applicant shall strive to achieve at least a 50 percent reduction of waste construction and demolition materials by reuse and recycling to meet landfill waste diversion goals consistent with the Integrated Waste Management Act of 1989.

**Verification:** The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

**WASTE-4** The project owner shall prepare Unexploded Ordnance (UXO) Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The project owner shall submit the plan to the CPM and AO for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of the training program outline and materials, and the qualifications of the trainers;
- Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not);
- A work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas; and
- The project owner shall provide documentation of the plan and provide survey results to the CPM.

**Verification:** The project owner shall submit the UXO Identification, Training and Reporting Plan to the CPM for approval no less than 60 days prior to the initiation of construction activities at the site. The results of geophysical surveys shall be submitted to the CPM within 30 days of completion of the surveys.

**WASTE-5** The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency (USEPA) prior to generating any hazardous waste during project construction and operations.

**Verification:** The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste

generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM and AO in the next scheduled compliance report.

**WASTE-6** Upon notification of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts, and describe how the violation will be corrected.

**Verification:** The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed.

**WASTE-7** The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the proposed project and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- Information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- A detailed description of how facility wastes will be managed, and any contingency plans to be employed, in the

event of an unplanned closure or planned temporary facility closure; and

- A detailed description of how facility wastes will be managed and disposed of upon closure of the facility.

**Verification:** The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary.

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

**WASTE-8** The project owner shall ensure that all accidental spills or unauthorized releases of hazardous substances, hazardous materials, and hazardous waste are documented and remediated, and that wastes generated from accidental spills and unauthorized releases are properly managed and disposed of in accordance with all applicable federal, state, and local requirements.

The project owner shall document management of all accidental spills and unauthorized releases of hazardous substances, hazardous materials, and hazardous wastes that occur on the project property or related linear facilities. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.

**Verification:** A copy of the accidental spill or unauthorized release documentation shall be provided to the CPM within 30 days of the date the release was discovered.

# VI. ENVIRONMENTAL ASSESSMENT

## A. BIOLOGICAL RESOURCES

This section evaluates the Rice Solar Energy Project's (RSEP) potential impacts to biological resources, including vegetation communities, wildlife and wildlife habitat, and special-status species. This analysis describes the biological resources at the project site and at the locations of ancillary facilities, and evaluates the project's expected impacts to them. This section explains the need for mitigation, evaluates the adequacy of mitigation proposed by the Applicant, and specifies additional mitigation measures designed to reduce impacts. The impact mitigation analysis also meets the Energy Commission's responsibility to comply with CEQA and serves as a recommendation group for the Energy Commission to consider in its decision to avoid or reduce the severity of impacts to less than significant. It assures conformance with applicable laws, ordinances, regulations and standards (LORS). The applicable LORS are identified in **Appendix A** to this Decision.

### SUMMARY AND DISCUSSION

This evaluation considers whether project would result in:

1. A substantial adverse effects to plant species considered by the California Native Plant Society (CNPS), CDFG, or USFWS to be rare, threatened, or endangered in California or with strict habitat requirements and narrow distributions; a substantial impact to a sensitive natural community (i.e., a community that is especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies);
2. A substantial adverse effect to wildlife species that are federally-listed or state-listed or proposed to be listed; a substantial adverse effect to wildlife species of special concern to CDFG, candidates for state listing, or animals fully protected in California;
3. Substantial adverse effects on habitats that serve as breeding, foraging, nesting, or migrating grounds and are limited in availability or that serve as core habitats for regional plant and wildlife populations;
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Substantial adverse effect on important riparian habitats or wetlands and any other "Waters of the U.S." or state jurisdictional waters; or

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The evidence was undisputed. (10/2910 RT 21, 27-29, Exs. 1, §5.2, Appendix 5.2A-F, 3, 4 [44-77], 7, [45,47,48], 9 [4], 12 [49-51, 54, 56, 58, 75], 15,[61], 16[Biological Resources], 18 [Biological Resources], 19 [Biological Resources], 29, 35, 37, 41, 46, 47, 49, 200, § 6.2, 209.)

1. Agency Memoranda of Understanding

In addition to the federal, state, and local LORS identified in **Appendix A**, federal and state agencies are currently collaborating to establish joint policies and plans to expedite development of California's utility scale renewable energy projects. On October 12, 2009, the State of California and the U.S. Department of Interior entered into a Memorandum of Understanding (MOU) on renewable energy. This MOU builds on existing efforts by California and its federal partners to facilitate renewable energy development in the state. The MOU stems from California and Department of Interior energy policy directives and California's legislative mandate to reduce greenhouse gases to 1990 levels by 2020 and meet the goal of 33 percent of California's electricity production from renewable energy sources by 2020. (Ex. 200, pp. 6.2-10.)

The California-Department of Interior MOU expands on several MOUs issued in 2008 to establish the activities of the California Renewable Energy Action Team (REAT). The REAT was established with California Executive Order S-14-08 (issued November 18, 2008), to "*establish a more cohesive and integrated statewide strategy, including greater coordination and streamlining of the siting, permitting, and procurement processes for renewable generation*…." (Ex. 200, pp. 6.2-10.)

The Energy Commission and the California Department of Fish and Game (CDFG) are the primary state collaborators in the REAT, operating under a November 18, 2008 MOU between the two agencies to create a "one-stop process" for permitting renewable energy projects under their joint permitting authority. The BLM and the (U.S. Fish and Wildlife Service (USFWS) also participate in the REAT under a separate MOU signed in November 2008, which outlines the state and federal cooperation of the group. (Id.)

The REAT's primary mission is to streamline and expedite the permitting processes for renewable energy projects in the Mojave and Colorado Desert

ecoregions within the State of California, while conserving endangered species and natural communities at the ecosystem scale. To accomplish this goal, the REAT Agencies are developing a Desert Renewable Energy Conservation Plan (DRECP), which is a science-based process for reviewing, approving, and permitting renewable energy applications in California. (Id.)>

Once the DRECP is complete, which is anticipated to be in late 2012, the plan will provide tools to expedite coordination of federal and state endangered species act permitting. The DRECP will also offer a unified framework for state and federal agencies to oversee mitigation actions for listed species.

The REAT Agencies recognize that some renewable energy projects are scheduled to be approved prior to completion of the DRECP. Section 8.9 of the October 2009 Draft Planning Agreement for the DRECP provides explicit guidance for such interim projects, and directs the REAT agencies to ensure that permitting for these projects:

- Is consistent with the preliminary conservation objectives for the DRECP;
- Does not compromise successful completion and implementation of the DRECP;
- Facilitates Federal Endangered Species Act, California Endangered Species Act, National Environmental Policy Act, and California Environmental Quality Act compliance; and
- Is not unduly delayed during preparation of the DRECP. (Ex. 200, p. 6.2-11.)

2. REAT Account and SB 34

The REAT agencies recently signed a Memorandum of Agreement (MOA) to establish a REAT Account that may be used by project developers to deposit funding for specified mitigation for approved renewable energy projects in the Mojave and Colorado Desert region of southern California. The MOA is available at www.energy.ca.gov/33by2020.

For each project using the REAT Account, an individual subaccount will be established for project specific tracking, compliance and accounting purposes. The subaccount will include a list of the specific mitigation actions, the cost, a timeframe for carrying out the actions, and identify which of the REAT agencies would be responsible for requiring and coordinating the mitigation actions. The National Fish and Wildlife Foundation (NFWF) would manage the subaccount on behalf of the REAT agencies, and at their direction would disburse mitigation

funding to satisfy mitigation requirements for impacts to biological resources. NFWF is a charitable non-profit corporation established in 1984 by the federal government to accept and administer funds to further the conservation and management of fish, wildlife, plants and other natural resources. Further information about NFWF is available at www.nfwf.org.

Use of the REAT Account will not change any of the requirements a project proponent must fulfill in order to comply with applicable State and Federal environmental laws governing the permitting of the projects.

The REAT Account will also aid project proponents in carrying out contracting and construction activities in a timely manner per requirements for American Recovery and Reinvestment Act of 2009 (ARRA) funding. The SBX8 34 legislation that was recently signed into law by the Governor created a $10 million loan that provides for advanced mitigation habitat purchases. This advanced mitigation can be used by a qualifying solar renewable energy project to receive credit for implemented mitigation after a project proponent pays into the Renewable Energy Development Fee Trust Fund that was created by the SBX8 34 legislation (SBX8 34 Trust Fund). Funds in the MOA REAT Account and the SBX8 34 Trust Fund are similar in that renewable energy project proponents pay into accounts set up to receive project-specific mitigation funds, and a third party entity implements the mitigation actions. As more fully discussed below, Condition of Certification **BIO-26** provides an opportunity for the Applicant to fulfill its mitigation obligations by depositing funds into the SB 34 Trust Fund. (Ex. 200, 6.2-11-6.2-12.)

3. Project Setting and Existing Conditions

a. Regional Setting

The RSEP project site is located approximately 34 miles northwest of the city of Blythe, just south of State Route 62 (SR-62). The project consists of a solar generation site on private land and a generator tie-line and interconnection substation, primarily on BLM-managed lands within the Northern and Eastern Colorado Desert (NECO) planning area. Several designated wilderness areas managed by the BLM occur near the project area. For instance, the proposed solar site is located approximately 2 miles south of the Turtle Mountains Wilderness, 5 miles northeast of the Palen/McCoy Wilderness, 3 miles north of the Rice Valley Wilderness, 6 miles west of the Chemehuevi Desert Wildlife Management Area (DWMA) and the Chemehuevi desert tortoise critical habitat unit, and 9 miles northwest of the Riverside Mountains Wilderness. The proposed

generator tie-line interconnection point is within a mile from the Rice Wilderness and immediately adjacent to the Riverside Mountains Wilderness.

The project site is located within the Rice Wildlife Habitat Management Area (WHMA) established in BLM's 2002 NECO. This WHMA was designated to provide management for the sand dune habitat for the Mojave fringe-toed lizard and to provide wildlife connectivity between the Chemehuevi Desert Wildlife Management Area/Turtle Mountains Wilderness to the north and Palen-McCoy and Rice Valley Wildernesses to the south. This designation applies formally only to BLM-managed lands (i.e., the generator tie-line alignment) but reflects biological resource values that also are applicable to the proposed solar generator site which will be located on private land.

The project area lies in the Rice Valley within the northern portion of the Colorado Desert, which is part of the larger Sonoran Desert. The project area lies in a transition zone between the Colorado Desert and the Mojave Desert. The Colorado Desert, often referred to as California's "Low Desert," experiences more summer precipitation than the northern deserts, and although annual precipitation is low overall, a significant portion of it falls during August and September, usually as flashy thunderstorms. In contrast, the Mojave Desert is referred to as California's "High Desert." It lies in the rain shadow of the Sierra Nevada and Transverse Mountain ranges, and receives most precipitation during winter months, although summer thunderstorms also occur. The average annual precipitation recorded at Iron Mountain, approximately 18 miles to the northwest of the proposed solar field, is 3.4 inches and average monthly temperatures at this location generally range between 43 and 108°F. (Ex. 200, p. 6.2-14.)

The Rice Valley is a dry, shallow basin with a north-south orientation, bounded by the Turtle Mountains to the north and the Big Maria Mountains to the south. The edges of the Valley are defined to the west by the Arica Mountains and to the east by the West Riverside Mountains. These mountain ranges are rugged and provide habitat for special-status species such as Nelson's bighorn sheep, and various plant communities including desert dry wash woodlands. The rugged mountain areas, lowland valleys, and dunes provide a diversity of topographical features and habitat for a variety of plant and animal species. Dune areas are often occupied by rare and endemic plant and animal species. The sand dunes along the southern end of the Valley support specialists such as the Mojave fringe-toed lizard, and the entire valley provides foraging habitat for a number of species including golden eagle and prairie falcon.

Rice Valley is a sink with no broader hydrological connectivity. Rice Valley has a small watershed and lacks any major washes. There are no perennial surface water sources within the sink and there is no evidence that a lake ever formed in the Valley during wetter climatic periods.

Current human activity in the Rice Valley is primarily concentrated at the north end of the Valley, where an east-west linear corridor of transportation and infrastructure features, the Colorado River Aqueduct, the Arizona-California Railroad, and SR-62, are located. These three parallel features present a major north-south barrier to wildlife passage and interrupt local hydrology.

Other than the development in the northern part of the Rice Valley and ephemeral domestic sheep grazing, the Rice Valley appears to be subject to light use by humans. Much of the Valley is now contained within the Rice Valley Wilderness Area, but the Valley presents few recreational opportunities other than self-contained day use or camping, vehicle recreation, or spring season wildflower viewing due to the lack of water, developed recreational sites, sparse vegetation, and mostly level topography. (Ex. 200, p. 6.2-15.)

b. Project Disturbance Areas

Electrical power generated by the project will be delivered to the transmission grid through an interconnection with the existing Western Parker-Blythe #2 transmission line, southwest of the project site. The facility would consist of a roughly circular solar heliostat field, administrative facilities, and stream channel diversions on approximately 1,387 acres of private land owned by the Applicant; a 10-mile generator tie-line crossing public and private land; and an interconnection substation (identified as a “switchyard” in Western documents) on approximately three acres at the tie-in point with Western’s existing transmission line, on public land. BLM manages public land on the tie-line alignment and substation site and throughout the area.

The solar generator would consist of as many as 17,500 solar-tracking heliostats, or mirrors, that would reflect solar energy to a central solar receiver tower. Each heliostat would be approximately 24 by 28 feet in size. The central receiver tower, including all components, would be 653 feet tall. Electricity would be generated by heating molten salt within the receiver tower; and then pumping it through a steam turbine generator.

The Applicant owns 3,324-acres in Rice Valley, consisting of six parcels. Within this holding, the RSEP solar field site would be located on a new 2,560-acre

square-shaped parcel that would be created by merging four existing assessor's parcels. The heliostat field and most other permanent facilities would be located in a circular area encompassing 1,368 acres of the property, to be enclosed within a permanent boundary fence. During operation, most project facilities, including parking areas, administration buildings, water treatment system, a 230-kV switchyard, the approximately 1,329-acre heliostat field and associated power generation structures, and evaporation ponds would be contained within this fenced boundary. The entire solar generator site would be permanently disturbed by project construction and operation.

Other project facilities, including the generator tie-line, distribution line, drainage diversion channels surrounding the north side of the solar field, temporary logistics and lay-down area to be located between the heliostat field and SR-62 and a short portion of the site's main access road, would be located outside the security fence. Some of these areas would be permanently disturbed by the proposed project, while others, including the logistics/lay-down areas and transmission line tower construction sites, would be subject to temporary (albeit long-term) disturbance during construction.

The proposed logistics and lay-down areas are on 26 acres, south of SR-62 and outside the proposed heliostat field. During construction, all logistics, laydown, and parking would be contained within these temporarily fenced areas. These areas would be temporarily disturbed, though disturbance would be long-term due to slow recovery rates in the deserts. Additional long-term disturbance areas would include transmission tower construction sites, pull sites, and other logistics, staging, and lay-down areas along the proposed new transmission line and distribution line. (Ex. 200, p. 6.2-16.)

Staff estimates that 48.9 acres will be subject to total long-term disturbance resulting from temporary construction impacts. Staff further estimates the total long-term and permanent project disturbance would affect approximately 1,448 acres. The project components and corresponding acreages are shown below in **Biological Resources Table 1**.

**Biological Resources Table 1**
**Summary of Project Components and Acreages[1]**

| Project Component | Applicant-Owned Land | Private Land (Other) | Public (BLM) Land | Total |
|---|---|---|---|---|
| Total contiguous applicant holdings (six parcels) | 3,325acres | n/a | n/a | 3,235acres |
| Project site (four parcels, to be merged into one) | 2,560 acres | n/a | n/a | 2,560 acres |
| Solar generator site, including permanent facilities within perimeter fence | 1,368 acres | 0 | 0 | 1,368 acres |
| Permanent stream channel diversions (outside perimeter fence) | 19acres | 0 | | 19 acres |
| Long-term construction-phase disturbance (parking, lay-down, , and logistics) | 26 acres | 0 | 0 | 26 acres |
| Permanent new access and maintenance road for transmission line (24 ft. wide x 4.6 miles) | 3 acres | 0 | 11 acres | 14 acres |
| | | | | |
| Long-term disturbance for new transmission line towers and pull sites[2] | 2 acres | 3 acres | 21 acres | 26 acres |
| Permanent disturbance for interconnector substation | 0 | 0 | 3 acres | 3 acres |
| | | | | |
| **Total Project disturbance area** | 1,418 acres | 3 acres + | 35 acres + | **1,456 acres** |

1. Data from Exhibit 47 unless otherwise noted.
2. Staff estimates 90 towers and 10 pull sites, each site approximately 0.5 acre; approximately 80% of tower and pull sites would be on BLM land.
*3.* Note that 6 acres within the disturbance area consists of a concrete apron that is not considered desert tortoise habitat for later calculations of compensation acreage. Therefore, the total acreage for the habitat compensation calculations is 1,448.

The proposed RSEP solar field site was used as a military supply and training base during World War II. The former Rice Army Airfield was constructed as part of the Desert Training Center and used as a military training airfield from 1942 to 1944. The airfield originally consisted of two oiled 5,000-foot runways and numerous aircraft hardstands extending beyond the runways to the southeast and southwest. Although the aboveground structures have been removed and some vegetation has become reestablished, the “V”-shaped runway and general layout of the former Rice Army Airfield remain apparent in aerial photography. Following military use between 1942 and 1944, the land has been in private holding and was subsequently used as a private airport; however, the site was abandoned sometime between 1954 and 1958. (Ex. 200, pp. 6.2-17 – 6.2-18.)

c. Transmission Line Interconnection

A new 230-kV generator tie-line will interconnect to Western's 161-kV/230-kV Parker-Blythe #2 transmission line. The generator tie-line would extend for 10.0 miles from the RSEP fenceline southeast to a new interconnection substation. The new generator tie-line would be located primarily on BLM land and would include the establishment of approximately 4.6 miles of new dirt service roadway and a new 300 by 400 foot substation at the point of interconnection. The remaining 5.4 miles of generator tie-line would be located adjacent to an existing dirt road (Rice Valley Road), which would serve as its access road.

4. Vegetation and Wildlife

a. Plant Communities

Most of the solar generator site is covered by creosote bush scrub. A few small portions of the site support white bursage scrub. Near the northern margin of the project site, outside the proposed project footprint, there are linear patches of smoke tree woodland along ephemeral channels immediately downstream from breaches in the unmaintained levees that protected the former Rice Army Airfield.

The Applicant's and Staff's independent efforts have resulted in the data presented below in **Biological Resources Table 2**. Staff's field visits to the site and the Applicant's vegetation maps and descriptions, covered the entire 2,560 acre parcel and a 1,000-foot wide corridor along the generator tie-line alignment. (Ex. 200, p. 6.2-21.)

**Biological Resources Table 2**
**Summary of Project Disturbance Acreage by Vegetation Type[1]**

| Vegetation Type | Solar Generator Site and Contiguous Facilities | Transmission lines and Interconnector Substation | Total |
|---|---|---|---|
| Creosote bush scrub | 1,320 acres | 42 acres | 11,362 acres |
| White bursage scrub | 87 acres | 0 | 87 acres |
| Smoke tree woodland | 0 | 0 | 0 |
| Unvegetated (concrete pad) | 6 acres | 0 | 6 acres |
| | | | |
| **Total Project disturbance area[1]** | **1,413 acres** | **42acres** | **1,455 acres** |

1. Note that the 6 acres consists of a concrete apron that are not considered desert tortoise habitat for later calculations of compensation acreage. Therefore, the total acreage for the habitat compensation calculations is 1,448.

Creosote brush scrub covers most of the site. It is dominated by creosote bush and whit bursage. In many areas of the study area, white bursage has greater absolute cover than creosote bush, but not sufficient for these areas to be classified as *Ambrosia dumosa* shrubland. Other shrubs present at low abundance are burrobrush, brittlebush, and white rhatany. Common species in the herb layer are white tackstem, pebble pincushion, desert dandelion, devil's lettuce, Nevada cryptantha, broad-fruited comb-bur, Sahara mustard, rattlesnake weed, desert lantern, desert plantain, and Mediterranean grass. Creosote bush scrub is not ranked by CDFG as a special-status vegetation community. (Ex. 200, pp. 6.2-21 - 6.2-22.)

White bursage scrub covers approximately 87 acres in the northwestern portion of the proposed solar generator site. This vegetation is dominated by white bursage, although creosote bush is also common. Burrobrush is also present at low cover levels in the community. The herb layer is similar to that described above for creosote bush scrub. White bursage scrub is not ranked by CDFG as a special-status vegetation community.

Smoke tree woodland covers just over 5 acres adjacent to the solar generator site. It is characterized by smoke tree, although smaller shrubs may have greater cover. In the project area, burrobrush cover is approximately equal to smoke tree cover in this woodland. Blue palo verde is also present in the tree layer and white bursage and creosote bush are present in the shrub layer. The nonnative, invasive annual, Sahara mustard, is common in the herb layer. This community is ranked by CDFG as a special-status vegetation type, with state

rarity ranking of S3. It is one of several communities included within broader vegetation types called desert wash woodland or microphyll woodland. The evidence indicates that project construction would not directly affect smoke tree woodland. (Ex. 200, pp. 6.2-21 - 6.2-22.)

According to the evidence, vegetation on the proposed solar generation site has largely recovered from removal or crushing during the site's historic use as an airfield. However, soils throughout much of the project site remain somewhat compacted and remnants of pavement, tar, or oil are evident on the soil surfaces throughout much of the site. Recovering vegetation is visually similar to surrounding undisturbed desert lands, though shrubs tend to be smaller and overall diversity is lower on the former Rice Army Airfield site.

The evaluation of the proposed generator tie-line alignment establishes that its vegetation is predominately creosote bush scrub. The alignment crosses several broad sandy washes where blue palo verde is common, though these areas were not mapped as distinct vegetation types due either to the 5-acre minimum mapping unit or to relatively greater cover of creosote bush. The soils along the tie-line alignment were not compacted, paved, or oiled during the 1940s. Thus, native shrublands are generally more diverse and more mature than shrublands on the proposed solar generation site. (*Id.*)

b. Wildlife

The project area supports a broad diversity of wildlife species. Although the heliostat field would be located largely on an abandoned, previously disturbed airfield, desert scrub vegetation has recolonized the area and there are no barriers to wildlife usage at the site. During a reconnaissance-level field visit, Staff noted that the density of small mammal burrows and abundance of scat seemed low compared with surrounding undisturbed desert lands and suggests that this may be due to soil compaction or other alterations, or to reduced native shrub diversity on the site as discussed above. (Ex. 200, p. 6.2-23.)

The proposed tie-line and substation locations would be on open, relatively undisturbed desert scrub habitat.

Wind-blown sand dune habitats are found south of the proposed solar site, and fine sandy substrates extend into the project footprint by way of numerous sandy washes. These features increase the biodiversity of the site because some habitat specialist species use these areas exclusively while generalist species occur in more common habitats ranging throughout the region. For example, the

Mojave fringe-toed lizard is closely associated with sand dunes, sand sheets, and fine sandy soils, but generally not on nearby alluvial fans and bajadas. The Mojave fringe-toed lizard was detected 0.75 mile from the project site during surveys for the RSEP.

Several reptile species are reported to occur on the site, including the state and federally listed threatened desert tortoise. Mammals recorded during the surveys include black-tailed jackrabbit, coyote, and desert kit fox. Burro deer or Nelson's bighorn sheep may also move through the area for forage or dispersal. The Yuma mountain lion, a California Species of Special Concern and a predator of the burro deer and bighorn sheep, may also move through the project area. And, despite the moderate to low shrub density, the project area provides forage, cover, roosting, and nesting habitat for a variety of bird species. In addition, many species, such as golden eagle and prairie falcon, nest in the adjacent mountains and are likely to forage over the project area, but there are no large trees on the solar generator site suitable for large raptor nesting or roosting. These, and other raptors, also are expected to forage over the site outside the breeding season. In 2009, a number of common resident and migratory birds were also detected in and near the RSEP site. The American badger was not detected at the project site, but it could occur in the area as there is suitable habitat throughout the project area. (Ex. 200, pp. 6.2-24, 6.2-48 6.2-48 – 6.2-54 .)

c. Special Status Species

As discussed above, the project area supports a variety of special-status plant and wildlife species. Habitat on the site and generator tie-line also appears suitable for several additional special-status species. The evidence identifies all special-status species evaluated during the analysis that occur or could occur in the project area and vicinity. (Ex., 200, pp. 6.2-25 – 6.2-35 [Table 4].)

**Biological Resources Table 3** below summarizes the evidence of and identifies all species, not just special status species that are or were

- present on the site;
- reasonably certain to occur on the site based on conditions, species ranges, and recent records (generally within approximately 20 years and 10 miles of project site, depending on the species' life history); or
- not observed on the site (nor was their sign), but site conditions are suitable for occurrence because the site is within or near known distribution, and/or an historical record (generally greater than 20 years old) exists in the vicinity (generally within approximately 10 miles of project site, depending on the species' life history).

Special-status species observed on the project site are indicated on the table by bold-face type.

**Biological Resources Table 3**
**Special-Status Species, Their Status, and Potential Occurrence at the Rice Solar Energy Solar Generator, Generator Tie-Line, and Interconnector Substation Project Site**

| Scientific Name | Common Name | Status | Potential For Occurrence On-Site |
|---|---|---|---|
| PLANTS | | | |
| *Abronia villosa var. aurita* | Chaparral sand verbena | CNPS 1B.1<br>BLM S<br>S 2.1 | **Present.** Two individuals were observed within the solar generation site in 2009 (Appendix 5.2B of SR 2009a). |
| *Astragalus insularis var. harwoodii* | Harwood's milk-vetch | CNPS 2.2<br>S 2.2? | **Present.** A total of 30-40 individuals were observed at 5 separate locations along the transmission line corridor in 2009 (Appendix 5.2B of SR 2009a). |
| *Cynanchum utahense* | Utah cynanchum, Utah vine milkweed | CNPS: 4.2<br>S 3.2 | **Present.** Reported at substation site in late-season botanical surveys (Applicant's Fall 2010 Supplemental Botanical Inventory, tn 58773, Oct. 13, 2010) |
| *Ditaxis claryana* | Glandular ditaxis | CNPS: 2.2<br>S1S2 | **Moderate** on transmission line route, **low** on solar generation site. Perennial herb, seasonality varies; not seen during field surveys. |
| *Ditaxis serrata var. californica* | California ditaxis | CNPS: 3.2<br>S 2.2 | **Moderate** on transmission line route, **low** on solar generation site. Perennial herb, seasonality varies; not seen during field surveys. |
| *Matelea parvifolia* | Spearleaf | CNPS: 2.3<br>S 2.2 | **Moderate** on transmission line route, **low** on solar generation site. Perennial herb, seasonality mid-spring. |
| *Wislizenia refracta ssp. palmeri* | Palmer's jackass clover | n/a | **Low** on solar generation site, **moderate** on transmission line route. Generally in dunes, playas, desert shrublands. Not located during early-season surveys. |
| INVERTEBRATES | | | |
| *Oliarces clara* | Cheeseweed owlfly (cheeseweed moth lacewing) | BLM S | **Present.** Reported by CNDDB immediately adjacent to or within the generator tie-line corridor (CDFG 2010a) based on a 1978 record. Suitable habitat throughout project area. |

| Scientific Name | Common Name | Status | Potential For Occurrence On-Site |
|---|---|---|---|
| AMPHIBIANS | | | |
| REPTILES | | | |
| *Gopherus agassizii* | Desert tortoise | FT<br>ST | Present. Recorded during protocol surveys of solar site and transmission line route in 2009: 7 tortoises, 91 shell-skeletal remains, 66 burrows, 3 egg shell fragment locations, and 56 scat events were detected (SR 2009a). |
| *Lichanura trivirgata* | Rosy boa | BLM S | Moderate. Potential marginal habitat occurs onsite, and the NECO distribution map for the rosy boa includes the entire RSEP area and only excludes the dune areas of the Rice Valley. More likely to occur in rocky areas in the surrounding mountains. |
| *Uma scoparia* | Mojave fringe-toed lizard | BLM S<br>CSSC | High. Observed during the 2009 tortoise survey in dune habitat approximately 0.75 miles south of the site boundary, but not on the site or proposed transmission line alignment. Habitat on the proposed solar generation site is marginal; more suitable sandy washes are found on the proposed transmission line alignment. Within mapped range (BLM and CDFG 2002). |
| BIRDS | | | |
| *Accipiter cooperii* | Cooper's hawk | CDFG WL (nesting) | High (winter only). No breeding habitat and well outside breeding range; wide-ranging during winter, likely to forage on-site during winter or migratory seasons. |

| Scientific Name | Common Name | Status | Potential For Occurrence On-Site |
|---|---|---|---|
| *Accipiter striatus* | Sharp-shinned hawk | CSSC (nesting) | High (winter only). No breeding habitat and well outside breeding range; wide-ranging during winter, likely to forage on-site during winter or migratory seasons. |
| *Aquila chrysaetos* | Golden eagle | BLM S<br>FBCC<br>SP<br>CDFG WL | High (foraging only). There is known nesting habitat in the nearby mountains; suitable foraging habitat occurs throughout project site and transmission line alignment. Within mapped range (BLM and CDFG 2002). Protected under Federal Bald and Golden Eagle Protection Act. |
| *Athene cunicularia* | Western burrowing owl | BLM S<br>FBCC<br>CSSC | Present. Active burrows observed in project area during 2009 and 2010 (SR 2009a; CH2MHill 2010e). Within mapped range (BLM and CDFG 2002). |
| *Buteo regalis* | Ferruginous hawk | BLM S<br>FBCC<br>CDFG WL | High (winter only). Suitable winter foraging habitat throughout site. Expected during migratory and winter seasons. Within mapped range (BLM and CDFG 2002). |
| *Circus cyaneus* | Northern harrier | CSSC (nesting) | Moderate (winter only). Outside breeding range and no suitable breeding habitat occurs in the region; there is potential for infrequent winter foraging throughout desert regions. |
| *Falco columbarius* | Merlin | CDFG WL | High (winter only). Outside breeding range; potential foraging habitat throughout site during winter or migratory seasons. |
| *Falco mexicanus* | Prairie falcon | FBCC<br>CDFG WL (nesting) | Present (foraging). Observed during April/May 2009 (SR 2009a). Nest sites are reported from the mountains surrounding Rice Valley (CDFG 2010a); suitable foraging habitat throughout the project site. Within mapped range (BLM and CDFG 2002). |
| *Lanius ludovicianus* | Loggerhead shrike | FBCC<br>CSSC (nesting) | Present. Observed in project area during 2009 tortoise surveys. Likely nests in shrubs on proposed solar site and within generator tie-line corridor. Suitable habitat throughout the project site. |
| *Polioptila melanura* | Black-tailed gnatcatcher | n/a | High. Suitable habitat in shrublands, especially around washes. Former species of concern. Common and populations apparently now stable. |
| *Toxostoma crissale* | Crissal thrasher | FBCC<br>CSSC | High (transmission line only). Occurs throughout region in dense, scrubby desert wash habitats; suitable habitat occurs periodically along proposed transmission line alignment, but habitat on proposed solar facility generally poorly suitable due to open structure; only low occurrence probability on-site. Outside mapped range (BLM and CDFG 2002). |
| *Toxostoma lecontei* | LeConte's thrasher | BLM S<br>FBCC<br>CDFG WL | High. Reported in 1920 approx. 2 miles northwest of the solar field site (CDFG 2010a). Suitable habitat present throughout the project area. Desert populations are apparently stable; CDFG special concern ranking applies only to San Joaquin Valley population (Shuford and Gardali 2008). Within mapped range (BLM and CDFG 2002). |

| Scientific Name | Common Name | Status | Potential For Occurrence On-Site |
|---|---|---|---|
| MAMMALS | | | |
| *Antrozous pallidus* | Pallid bat | BLM S<br>CSSC | Moderate (foraging). Roosts in rock outcrops of shrublands; potential roosting in nearby mountains (offsite) and foraging through the Rice Valley. Within mapped range (BLM and CDFG 2002). |
| *Corynorhinus townsendii* | Townsend's big-eared bat | BLM S<br>CSSC | Moderate (foraging). Roosts primarily in caves, tunnels, mines; feeds mainly on moths; may roost in nearby mountains and forage through the Rice Valley but activity is more likely concentrated along the Colorado River Valley (SR 2009a). Within mapped range (BLM and CDFG 2002). |
| *Eumops perotis californicus* | Western mastiff bat | BLM S<br>CSSC | Moderate (foraging). Roosts in deep rock crevices and forages over wide area; may roost in nearby mountains and forage through the Rice Valley. RSEP site out of range but habitat is mapped immediately south of proposed generator tie-line interconnection point (BLM and CDFG 2002). |
| *Felis concolor browni* | Yuma mountain lion | CSSC | High. Uncommon; occurs in Colorado Desert, Joshua Tree National Park to Colorado River. Primarily found in dense riparian habitats of Colorado River, and dense microphyll washes in mountainous areas, where water, shaded cover and prey are available. If present, project area likely used primarily for movement. Range includes southern half of the proposed generator tie-line corridor (BLM and CDFG 2002). |
| *Macrotus californicus* | California leaf-nosed bat | BLM S<br>CSSC | Moderate (foraging only). Roosts in mines or caves; expected in surrounding mountains and likely forage occasionally over the proposed project area. Within mapped range (BLM and CDFG 2002). |
| *Nyctinomops femorosaccus (Tadarida femorosaccus)* | Pocketed free-tailed bat | CSSC | Moderate (foraging). Occurs in deserts and arid lowlands; eastern Riverside and San Diego Counties, through southwest US, Baja California, mainland Mexico. Roosts mainly in crevices of high cliffs; may roost in nearby mountains and forage through the Rice Valley. Reported habitat immediately south of generator tie-line interconnection point (BLM and CDFG 2002). |
| *Nyctinomops macrotis(Tadarida macrotis)* | Big free-tailed bat | CSSC | Moderate (foraging). Occurs in the tropics north to North American deserts and coastal California; many scattered locations. Roosts in crevices of rock cliffs; may roost in nearby mountains and forage through the Rice Valley |
| *Odocoileus hemionus eremicus (= O. h. crooki)* | Burro deer, desert mule deer | n/a | High. Uncommon. Large home ranges, including montane and bajada habitat throughout Colorado Desert; mainly in scattered mountain ranges and near dependable water sources. If present, project area likely used primarily for movement. |

| Scientific Name | Common Name | Status | Potential For Occurrence On-Site |
|---|---|---|---|
| *Ovis canadensis nelsoni* | Nelson's bighorn sheep | BLM S | **High**. The Turtle Mountains to the north and the Maria Mountains to the south are likely occupied; the West Riverside and Riverside Mountains to the east and southeast may one day be repopulated. May occasionally forage on-site; movement among mountain ranges is important to regional population viability. |
| *Taxidea taxus* | American badger | CSSC | **High**. Uncommon; occurs in mountains, deserts, interior valleys where burrowing animals are available as prey and soil permits digging. Known from Vidal, approximately 17 miles northeast. Suitable habitat throughout the project site |
| *Vulpes macrotis arsipus* | Desert kit fox | n/a | **Present**. Detected during April/May 2009 desert tortoise surveys (SR 2009a). |

FE = Federally listed Endangered
FT = Federally listed Threatened
FD = Federally Delisted
FC = Federal Candidate
FBCC = Federal Bird of Conservation Concern
BLM S = BLM Sensitive
SE = State listed Endangered
ST = State listed Threatened (wildlife)
SR = State listed Rare (plants)
CSSC = California Species of Special Concern (wildlife)
SP = State Fully Protected Species
CDFG WL = California Department of Fish and Game Watch List
n/a = None of above

***CNPS (California Native Plant Society) Designations:***
List 1A = Plants presumed extinct in California
List 1B = Plants considered by CNPS to be rare, threatened, or endangered in California, and throughout their range
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere in their range
List 3 = Plants about which we need more information – a review list.
List 4 = Plants of limited distribution – a watch list

***CNPS Threat Rank:***
.1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

***CDFG Natural Diversity Database Designations*** *(Applied to special-status plants and sensitive plant communities; where correct category is uncertain, CDFG uses two categories or question marks):*
S1 = Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres
S1.1 = Very threatened
S1.2 = Threatened
S1.3 = No current threats known
S2 = 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above)
S3 = 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above)
S4 = Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.
S5 = Demonstrably secure or ineradicable in California. No threat rank.
SH = All California occurrences historical (i.e., no records in > 20 years).

The characteristics, habitat, identified locations of occurrence on the project site and its facilities corridors is discussed in great detail in the record. (Exs. 1; 200, pp. 6.2-35 – 6.2-55.) Our discussion below regarding project impacts summarizes key areas of concern regarding special status and other species.

5. Jurisdictional Waters

The evidence describes the jurisdictional streambeds on the proposed solar generator site and associated generator tie-line alignment and substation.

The evidence describes the project site as being located on a bajada on the north side of Rice Valley. The bajada supports numerous drainages that flow from the surrounding mountains. However, Rice Valley is a drainage sink with no broader hydrological connectivity. Streams, washes, and playas are dry most of the year with surface water present only after storm events. There are no perennial surface water sources and there is no evidence that a lake ever formed in the valley during wetter climatic periods. (Exs. 1, 4 [Attachment DR60-1]; 200, pp. 6.2-55 – 6.2-56.)

Due to the arid conditions of the area, most of the surface waters in the region are ephemeral streams. All channels observed in the RSEP site and crossed by the proposed transmission line are ephemeral. These ephemeral streams are typically dry washes that only flow briefly, in response to precipitation. Regional storms, which generally occur in the winter months, are typically of low intensity, but can create short-lived ephemeral streams and cause significant flooding in the valley. Intense summer thunderstorms can also produce flooding in the low-lying valleys. During most storms, ephemeral streams may only run surface water for a couple of hours, though some may run for several days during an uncommon series of several heavy winter storms.

Wetlands are not present on the solar generator site or along the proposed generator tie-line alignment. U.S. Geological Survey (USGS) maps of the project area show four intermittent, blue line channels in the project area. Two blue line channels enter the property from north of the RSEP site, one at the northwest corner and one near the northeast corner. These drainages were rerouted to the west and east, respectively, by levees to protect the airfield. These levees have breached since then, now allowing runoff to flow across the property. Two additional blue-line ephemeral channels originate in the RSEP facility boundary and flow south towards the bottom of Rice Valley.

In addition to the above-described ephemeral blue-line channels, there are many additional other desert washes that originate on-site and drain southward across the site. All of these channels are ephemeral. In total, there are 75.4 acres of state-jurisdictional streambeds (i.e., ephemeral washes) within the 1,387-acre solar generator site. Staff concludes all of this streambed acreage would be

directly or indirectly affected by project construction and operation. In addition, there are 2.1 acres of state-jurisdictional streambeds outside the perimeter fence that would be directly affected by permanent or long-term project components (i.e., channel diversions, access road, and temporary logistics/laydown area).

The generator tie-line corridor crosses two intermittent blue-line channels within the RSEP facility boundary and seven between the boundary and where the line intersects Rice Valley Road. These channels flow in a south-southwest direction until they lose definition near the bottom of Rice Valley. In total there are approximately 5.3 acres of state-jurisdictional streambeds (i.e., ephemeral washes) within the generator tie-line alignment that could be affected by project construction.

The Applicant's field studies indicate that the USGS mapping accurately reflects conditions on the solar generator site, generator tie-line alignment, and substation site. None of the drainage features are tributary to a traditionally navigable water. They do not cross state lines or Tribal lands. The Applicant concluded that the drainage features that cross through and originate on the RSEP project site, as well as those crossed by the transmission line route, are isolated intrastate waters with no apparent interstate or foreign commerce connection. As a result, the Army Corps of Engineers (USACE) has determined that there are no waters of the US subject to jurisdiction under the Clean Water Act on the project site.

The evidence establishes that the Applicant has submitted a Lake and Streambed Alteration Notification to CDFG and Staff for proposed alterations at the solar generator site, generator tie-line, and interconnector substation. (Ex. 200, pp. 6.2-55 – 6.2-56.)

6. Assessment of Construction Impacts and Discussion of Mitigation

Native Vegetation and Habitat. The RSEP would eliminate or degrade native vegetation and wildlife habitat on the proposed solar generator and interconnector substation sites, and would cause temporary or long-term effects to contiguous habitat north of the solar generator site and along the generator tie-line and Parker-Blythe transmission line alignments. These impacts would affect all plant and wildlife species on the site.

Clearing and grubbing of native vegetation (i.e., removal of shrubs and their roots) would be performed for the construction of permanent access roads, mirror structure installation, and other project facilities throughout the proposed solar

field site, throughout much of the proposed construction facilities and logistics area, at each tower or pull site and for the new access road along the proposed transmission line alignment, and at the interconnection substation. Outside of access roads and maintenance tracks, vegetation would be cut to ground level as needed for construction but would leave the roots intact, allowing for some regrowth. Overall impacts of these construction procedures would cause substantial degradation to native vegetation and wildlife habitat.

More particularly, project construction would result in permanent and long-term impacts to approximately 1,448 acres of desert shrubland (excluding the 6-acre unvegetated concrete pad). This will result in both direct and indirect impacts to native vegetation, including introduction or spread of invasive weeds and increased dust. Weeds include species of non-native plants identified on the weed lists of the California Department of Food and Agriculture, the California Invasive Plant Council, or those weeds of special concern identified by BLM. The spread of invasive plants is a major threat to biological resources in the California desert because non-native plants can displace native plants, increase the threat of wildfire, supplant wildlife foods that are important to herbivorous species, alter the habitat structure and ecological function of wetland, riparian, and desert wash communities, and invade threaten special-status plant occurrences and habitat.

New weed species can be introduced to an area, or weeds already present on-site can spread due to construction and operation of the proposed facility. Once introduced, they can out-compete native species because of minimal water requirements and can become locally dominant. The RSEP is likely to introduce or facilitate the spread of invasive non-native plants.

Disturbance of the soil's surface caused by construction traffic will result in increased wind erosion of the soil. This aeolian transport of dust and sand can degrade soil and vegetation over a widening area and, can kill plants by burial and abrasion, interrupt natural processes of nutrient accumulation, and allow the loss of soil resources. Dust can also have deleterious physiological effects on plants and may affect their productivity and nutritional qualities.

Finally, although construction would not result in the complete loss of vegetation on the solar generator site, activities including construction of security and exclusion fencing to prevent desert tortoise from entering the project site will eliminate or degrade the habitat function of the site for all but the most disturbance-tolerant native species. Notably, disturbance to native vegetation along the transmission line alignments would be limited to access routes, pull

sites and tower sites, but mechanical access would cause long-term degradation to affected vegetation and habitat. (Ex. 200, pp. 6.2-1 – 6.2-2, 6.2-62 – 6.2-66.)

We find that the described direct and indirect construction impacts to native plant communities are significant and require mitigation to reduce the impacts to less than significant levels. We therefore adopt the following Staff-proposed Conditions of Certification to reduce the impacts to less than significant levels: **BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6**, **BIO-7, BIO-8, BIO-10** and **BIO-11**.

Condition of Certification **BIO-1** requires the project owner to assign at least one Designated Biologist to the project who must possesses "Authorized Biologists" status as these biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, evaluate their health, and draw blood, and have received USFWS approval. Authorized Biologists are responsible for the implementation of all desert tortoise measures and are permitted, in turn, to approve specific monitors to handle tortoises, at their discretion. Condition **BIO-2** requires the project owner shall ensure that the Designated Biologist performs enumerated activities described by Condition **BIO-2** during any site mobilization activities, construction-related ground disturbance, grading, boring, or trenching activities. The Designated Biologist may be assisted by the Biological Monitors after first complying with **BIO-3**, which requires the Designated Biologist to submit the resume and references for each to the CPM for approval.

Condition **BIO-4** requires the Biological Monitors to assist the Designated Biologist in conducting surveys and in monitoring of site mobilization activities, construction-related ground disturbance, grading, boring, or trenching. **BIO-5** requires the project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification and also, empowers the Designated Biologist to halt activities as appropriate. **BIO- 6** requires the project owner to prepare and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the Compliance Program Manager (CPM) in consultation with Western, CDFG, BLM, and USFWS. The WEAP shall be administered to all onsite personnel, consultants, and agents at the solar generator site, interconnector substation site, and on the transmission line alignment.

Condition **BIO-7** requires the project owner to develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two

copies of the proposed BRMIMP to the CPM for review and approval in consultation with Western, CDFG, BLM, and USFWS. The project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the following plans required by the Conditions of Certification: Hazardous Materials Plan; the Revegetation Plan; the Weed Management Plan; the Special-Status Plant Impact Avoidance and Minimization Plan; the Desert Tortoise Translocation Plan; the Raven Monitoring, Management, and Control Plan; the Burrowing Owl Relocation and Mitigation Plan; the Streambed Management Plan; the Evaporation Pond Design, Monitoring, and Management Plan; and the Avian and Bat Protection Plan.

Condition **BIO-8** contains a suite of activities for project owner to undertake in a manner to avoid or minimize impacts to biological resources. **BIO-10** addresses restoration and compensation for impacts to native vegetation communities by requiring the project owner to develop and implement a Revegetation Plan for all areas subject to temporary (albeit long-term) project disturbance. Upon completion of construction, all temporarily disturbed areas, including the logistics/lay down areas; all generator tie-line tower sites, pull sites, and similar areas shall be restored to pre-project grade and revegetated to minimize soil erosion and vulnerability to weed invasion. **BIO-11** requires the project owner's preparation and implementation of a Weed Management Plan that meets the approval of the CPM (in consultation with Western, BLM, CDFG, and USFWS) and includes specified elements.

In addition, Condition of Certification **BIO-16** (which is more fully discussed below), requires the acquisition, management, and preservation of similar habitats of equal or greater quality at a 1:1 ratio for permanent impacts to the solar field site and a 3:1 ratio for permanent impacts along the transmission line route and at the interconnection substation. These mitigation lands will provide similar habitat, including vegetation communities, as would be impacted by the RSEP, and preservation of these desert shrublands would compensate for impacts on site.

We conclude that implementation of these measures would reduce impacts to native plant communities to less than significant levels under CEQA. These measures would work by minimizing vegetation impacts to the extent practicable; revegetating temporarily disturbed areas; controlling invasive weeds and preventing infestations by newly introduced weeds; and providing for long-term

conservation and management of native vegetation on desert tortoise compensation lands.

Rare Plants. No state or federally listed threatened or endangered plants have the potential to occur within the solar generator site or generator tie-line corridor. One California Native Plant Society (CNPS) List 1B and BLM sensitive species was documented on the project: chaparral sand-verbena. Due to this plant's local distribution and abundance in the Colorado Desert (well outside the area where this plant is considered rare), this plant does not appear to be regionally rare, therefore, any impacts would not be significant.

One CNPS List 2 species was documented on the generator tie-line alignment during spring field surveys: Harwood's milk vetch. The CNPS List 2 is defined as a species rare in California, but more common elsewhere in their geographic ranges. Stated otherwise, these are species whose California occurrences are at the geographic limits of their ranges. Harwood's milk-vetch is at the western limits of its geographic distribution centered farther east.

According to the evidence, peripheral plant populations such as List 2 species are at greater risk of extirpation than core populations because they are smaller in areal extent, smaller in numbers of plants, and often in locations where habitat conditions are at the margins of their physiological limits. For this species, the Colorado Desert populations represent a substantial portion of its total known distribution within California. Adverse effects to occurrences in the project area could affect a substantial portion of its regional populations and make it more vulnerable to extirpation within the state.

We are persuaded by this information and Staff's discussion of the significance of this species List 2 classification status relative to the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code. Given that the Energy Commission considers plants appearing on CNPS List 1B or 2 to meet CEQA's Section 15380 significance criteria, we agree that adverse effects to List 2 species should be generally considered as "significant" except where substantial new data may show otherwise.

Plant species included in CNPS List 3 are those species for which further information is needed to evaluate their appropriate conservation status. Nearly all of these species are "taxonomically problematic." One CNPS List 3 species - Wiggins' cholla - is reported as possibly occurring on the project site, but the evidence suggests that the plant may have been misidentified or may have been

recorded off-site, on desert tortoise zone of influence transects. Based on current taxonomic understanding, Wiggins' cholla appears not to be a valid taxon. Furthermore, because recent taxonomic treatments do not recognize Wiggins' cholla as a valid subspecies, we conclude that project impacts to Wiggins' cholla, if they were to occur, would not reach the CEQA or Commission thresholds of significance.

Species included on CNPS List 4 are plants of limited distribution or infrequent throughout a broader area of California, and their vulnerability or susceptibility to threat appears low at this time. Very few CNPS List 4 plants meet the definition for state or federal listing. Nevertheless, they may be locally significant if, for example, they occur at the periphery of their geographic range, exhibit unusual morphology, or occur in atypical habitats.

One CNPS List 4 species, Utah cynanchum, is reported on the project site, at the interconnector substation location. Based on this plant's known geographic range and abundance, absence of any reported unusual morphology among local populations, and local occurrence in typical habitat, we conclude that project impacts to Utah cynanchum would not reach the level of significance under the Energy Commission's adopted significance criteria.

The evidence indicates a low to moderate probability that any of several additional CNPS List 1 through 4 plant species that can only be found during late summer or fall due to their growing season could occur on the solar generator site or generator tie-line alignment. Staff considered various mitigation strategies to address the potential occurrence of listed special status plants and mitigation of impacts to them and Harwoods' milk vetch. Relying in part on analyses of the Conservation Biology Institute, Staff concludes that that the project would likely cause adverse indirect effects to any rare plant occurrences within a 250-foot radius of project activities. (Ex. 200, pp. 6.2-2-6.2-3, 6.2-66 – 6.2-75.)

Therefore, Staff proposes Condition of Certification **BIO-12**, which requires the project's implementation of avoidance and minimization measures and compliance with BLM plant protection policies. We adopt Condition **BIO-12** and find that with its implementation, impacts of the solar generator site, generator tie-line, and interconnector substation to rare plants would not be significant.

<u>Common Wildlife and Nesting Birds.</u> Construction of the RSEP would adversely affect common wildlife and nesting birds due to ground disturbance, operation, and permanent exclusion fencing around the perimeter of the solar generator

site. These effects could include mortality of small mammals, reptiles, the eggs or nestlings of shrubland birds, and other less mobile species from trampling or crushing during clearing, grading, or excavation; and increased predation when wildlife is flushed from cover during site clearing or rendered vulnerable to predation due to increased disturbance by construction noise or lighting.

In addition to mortality, project construction would cause wildlife displacement from the project site and surrounding habitat due to loss of habitat, increased vehicular and human presence throughout the site, increased fugitive dust, noise and lighting disturbances, and a modified hydrologic and sediment regime due to the construction of the storm water management system. Mobile species such as adult birds would generally disperse into nearby habitat areas during construction. However, mammals and reptiles would be hindered or prevented from escaping the construction site by the project's perimeter fencing (i.e., the desert tortoise exclusion fence). Animals dispersing from the construction site still would be subject to adverse effects, potentially including mortality, after leaving the site. The record descries the various perils that displaced wildlife could face. (Ex. 200, pp. 6.2-3, 6.2-6.2-75 -6.2-77.)

Construction noise effects are also a source of potential impacts. According to the Applicant's data, noise generated by various construction activities is expected to range between 85 and 98 dBA on the site. These levels attenuate to less than about 50 dBA at distances of one mile. The loudest single noise events during project construction would be "steam blows," to clean scale and debris from boiler tubes. These reach a level of 110 dBA at 1,000 ft. from the source (i.e., the power block, in the center of the heliostat field). The noise levels of these tests would attenuate considerably at the perimeter fence (approximately 3,200 to 5,000 feet from the power block) but levels at the heliostat field perimeter are not known.

Construction noise effects on wildlife in the surrounding area will vary, depending on distance from the noise source; time of day, and persistence of the noise. Noise could affect wildlife in adjacent habitats by disrupting foraging, breeding, sheltering, and other activities. It could also interfere with acoustic communication by masking important sounds or sound components, such as territorial calls, contact calls, or alarm calls. In fact, many species rely on vocalizations during the breeding season to attract a mate within their territory.

In addition, the desert tortoise exclusion fence to be erected prior to project construction, would entrap most mammal and reptile wildlife species within the

project site. If these animals persist within the project area, they would be subject to disturbance and habitat loss during construction. While many species can tolerate human disturbance to some degree, the project's construction would cause ongoing habitat degradation and loss of wildlife, primarily due to habitat alteration and mortality on access and maintenance roads within the site. (Id.)

We recognize that construction-related effects to common wildlife typically are not considered significant under CEQA. However, given the amount of disturbed and destroyed habitat, the fact that animals would remain trapped within the perimeter fencing, and the multiyear construction, we find that project construction would result in potential significant effects to common species. Conditions of Certification **BIO-1** though **BIO-11**, **BIO-13**, and **BIO-16** will reduce these impacts. All of these conditions except **BIO-13** are discussed above. By adding **BIO-13** to the mitigation framework, we require the project owner to conduct pre-construction nest surveys for bird species (other than burrowing owls which are addressed in Condition of Certification **BIO-19**) if construction activities will occur during the breeding period (from February 1 through August 31).

Common Migratory and Resident Birds. General impacts such as habitat loss, noise, lighting, and human disturbances to common wildlife also apply to most birds. However, there are additional concerns for impacts to bird species regulated under state and federal statutes.

The federal Migratory Bird Treaty Act (MBTA) prohibits take of any migratory bird as defined in the Act (or any part of such migratory bird including active nests) except as permitted by regulation (e.g., duck hunting). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species. Similarly, California Fish and Game Code Section 3503 prohibits the take, possession, or needless destruction of bird nests or eggs; Section 3503.5 prohibits take or possession of birds of prey or their eggs; and Section 3513 prohibits take or possession of any migratory nongame bird. With the exception of a few non-native birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status.

The evidence establishes that the entire project site and surrounding area, including the proposed generator tie-line, provides suitable nesting habitat for numerous resident and migratory bird species. Examples of species likely to

nest in shrubs or on the ground on the RSEP site (and observed during desert tortoise surveys) include northern mockingbird, white-winged dove, lesser nighthawk, common poorwill, and horned lark. The Lower Colorado River Valley supports about 60 year-round resident bird species, 28 breeding season migrants, and 80 winter migrants. (Ex. 1, Appendix 5.2C, 200, p. 6.2-77 - 79.)

About half of these birds are found in wetland or riparian habitats and are not likely to be on the proposed RSEP solar generator site or the generator tie-line alignment. However, these species may migrate seasonally through the Rice Valley where they may be subject to project-related construction disturbance.

Many adult birds would flee from equipment during initial vegetation clearance for project construction, however, statutorily protected nestlings and eggs would be vulnerable to impacts during project construction. If initial site grading or brush removal were to occur during nesting season, then it likely would destroy bird nests, including eggs or nestling birds. (Id.)

The Applicant proposed mitigation measures to avoid and minimize impacts to nesting birds. Those measures are incorporated into Condition of Certification **BIO-13** and include removing vegetation at a time other than the breeding season, pre-construction nesting surveys, and establishing 500-foot buffers around active nests for most birds (1,200 feet for active raptor nests). To ensure the project's compliance with the requirements of the MBTA and California Fish and Game Code, **BIO-13** requires the project owner to coordinate with Staff, CDFG, and USFWS to guarantee that relocation work is conducted properly.

We find that implementation of Condition **BIO-13** would avoid direct impacts (including take) to migratory birds and their nests, eggs, or young and reduce the impacts of construction disturbance at the solar generator site, generator tie-line alignment, interconnector substation and on the existing 161 kV Parker-Blythe #2 Transmission Line to nesting birds to less-than-significant levels.

<u>Cheesewood Owlfly, Gila Monster and Rosy Boa</u> The cheeseweed owlfly has a conservation ranking with the CDFG Natural Diversity Database of S1S3, indicating uncertain status ranging between "critically imperiled" and "vulnerable." Given this species' historic occurrence in the gen tie-line alignment and the nature of the construction activities, project impacts would likely be significant. Conditions of Certification **BIO-1** through **BIO-10**, and **BIO-16** will reduce any impacts to less than significant levels. (Ex. 200, p. 6.2-80.)

Neither the Gila Monster nor the Rosy Boa were observed during surveys, but it is possible that they may occur in the project area. Any impacts to these species would be significant. However, we find that implementation of **BIO-1** through **BIO-10**, **BIO-14**, and **BIO-16** would reduce impacts to less than significant levels. (Ex. 200, pp 6.2-83 - 6.2-84.)

American Badger and Desert Kit Fox. The RSEP would contribute incrementally to the cumulative loss and fragmentation of habitat for desert kit fox and, perhaps, badgers. These impacts are similar to impacts that would result from other past and foreseeable future developments within the California desert. However, due to the low density of kit fox and badgers on site, and the fact that no future projects are planned adjacent to the RSEP that would significantly impair movement, the RSEP's contribution to cumulative impacts to badgers and kit fox would be minor. Condition of Certification **BIO-20** requires impact avoidance and minimization measures for American badgers and desert kit fox. Condition of Certification **BIO-16**, which requires compensatory mitigation for desert tortoise habitat, would also offset project-specific impacts to these species. We therefore conclude that the RSEP's incremental contribution to cumulative impacts to American badger and desert kit fox would be less than significant. (Ex. 200, pp. 6.2-106.)

Desert Tortoise. Construction of the RSEP would result in adverse effects to desert tortoise (federally and State listed as a threatened species). The evidence establishes that desert tortoises are present within the RSEP solar field and generator tie-line alignment and the adjacent desert areas surrounding the site.

Information provided by the Applicant indicates that most of the live desert tortoise occurrences were noted in the zone of influence (ZOI) transects surrounding the solar field site and transmission line. Recent desert tortoise sign was concentrated in the northwest portion of the solar field site and along the southern half of the transmission line route. In the ZOI transects, recent sign was most abundant to the north and west of the solar field site, and along the southern half of the transmission line route.

Shell and skeletal remains were found throughout the ZOI transects except in the area south of the solar field site. Juvenile through adult size classes were detected, and egg shell fragments were found at two locations on the solar field site and one location in the ZOI transects. A large number of shell and skeletal remains were found during the surveys, with 71 percent of the remains estimated as greater than four years old at the time of the surveys. The large number of remains suggests that

a significantly higher density tortoise population may have been present in the project area and surrounding areas within the last ten years. The cause of this high level of mortality is unknown.

Currently, the project site and surrounding areas support desert tortoises in low density, but shell fragments on site suggest this population is still reproducing and viable . (Ex. 200, pp. 6.2- 84 – 6.2-86.)

**Biological Resources Table 4** below identifies the types and locations of sign observed during protocol surveys conducted April to May 2009. (See also Ex. 1 Figure 5.2-5, Figures 2 and 3 in Appendix 5.2C.)

**Biological Resources Table 4**
**Desert Tortoise 2009 Protocol Survey Results**

| Location | Type of Sign | Quantity | Comments |
|---|---|---|---|
| Solar Field Site (survey area = 2,560 acre project site property boundary) | Live individual | 1 | |
| | Shell and skeletal remains | 16 | 13 of the remains were over four years from time of death, 2 were between 2-4 years since time of death, and 1 died within 1 year of the surveys |
| | Burrow | 7 | |
| | Scat | 13 | All but one scat event less than 1 year old |
| | Egg shell fragments | 2 | |
| | Tracks | 1 | |
| Transmission Line Route | Live individual | 1 | |
| | Shell and skeletal remains | 9 | 6 of the remains were over four years from time of death and 3 were between 2-4 years since time of death |
| | Burrow | 7 | |
| | Scat | 8 | All but 2 scat events less than 1 year old |
| | Egg shell fragments | 0 | |
| | Tracks | 0 | |
| ZOI Transects (adjacent to project area) | Live individual | 5 | |
| | Shell and skeletal remains | 66 | 46 of the remains were over four years from time of death, 15 were between 2-4 years since time of death, 1 was between 1-2 years since time of death, and 1 died within 1 year of the surveys |
| | Burrow | 52 | |
| | Scat | 35 | All but 11 scat events less than 1 year old |
| | Egg shell fragments | 1 | Location of egg shell fragments also a drinking depression |
| | Tracks | 2 | |

Source: Appendix 5.2C, SR 2009a

Construction of the proposed project would result in the permanent loss of approximately 1,448 acres of occupied desert tortoise habitat. One desert tortoise was located on the solar generator site during field surveys, and Staff estimates that about four tortoises (two adults and one or two juveniles) may live on the site. In addition, about ten tortoise eggs may be expected on the site in a typical year. The transmission line corridors and interconnector substation also are in occupied desert tortoise habitat.

One living tortoise was found within the solar generator site. However, the actual number of desert tortoises on the project site cannot be determined from field survey data alone, due to the possibility that some tortoises may have been overlooked during surveys (e.g., they may have been in deep burrows where they could not be seen). To estimate the number of tortoises on site, Staff applied the USFWS mathematical formula to field survey data. (Ex. 200, p. 6.2-85.) The USFWS formula allowed Staff to estimate that two adult or sub-adult

tortoises should be expected on the site, and the number may range from one to as many as 12 (with 95 percent confidence).

We recognize that most juvenile tortoises and tortoise eggs are not detected during field surveys. (Ex. 200, p. 6.2-86.) However, based on estimates that juveniles account for about 30 percent to 50 percent of a population, Staff estimates that the site would be expected to support a total of about three to four tortoises, including two adults and one or two juveniles.

The number of tortoise eggs expected on the site was estimated based on the assumption of a 1:1 sex ratio and any female tortoise on the site would be expected to lay eggs (clutch) in a given year. Thus, one of the two adult desert tortoises expected on-site is presumed to be a reproductive female. On average, female tortoises produce 1.6 egg clutches per year), and the average number of eggs per clutch is 5.8. Therefore, Staff estimates that 10 eggs would be expected on the site in a typical year. Staff emphasizes that these estimates are extrapolated from field survey data and are not intended to represent the actual numbers of tortoises or eggs on the site.

Survey data provided by the Applicant indicates that the generator tie-line alignment and interconnector substation site also are occupied desert tortoise habitat. Staff believes that tortoises or eggs would also be expected along Western's existing 161-kV Parker-Bythe transmission line alignment. (Id.)

*Direct Impacts.* The greatest impacts to desert tortoise will arise from the habitat loss at the solar field site. The land will be converted to a use incompatible with desert tortoise habitat and fenced to prevent desert tortoises from accessing the site. The primary threat related to the transmission line is risk of injury or mortality during construction or, after construction is complete, vehicle strikes on the approximately 4.6-mile new, unpaved access road.

More particularly, desert tortoises or eggs could be harmed during clearing, grading, and trenching activities or could become entrapped within open trenches and pipes. Construction activities could also cause direct mortality, injury, or harassment of tortoises or eggs as a result of encounters with vehicles or heavy equipment. Other direct effects could include individual tortoises or eggs being crushed or entombed in their burrows, disruption of tortoise behavior during construction or operation of facilities, disturbance by noise or vibrations from the heavy equipment, and injury or mortality from encounters with workers' or visitors' pets. Desert tortoises may also be attracted to the construction area by shade beneath vehicles, equipment, or materials, or the application of water to

control dust, placing them at higher risk of injury or mortality. Increased human activity and vehicle travel could disturb, injure, or kill individual tortoises. Also, tortoises may take shelter under parked vehicles where they could be killed, injured, or harassed when the vehicle is moved. (Ex. 200, p. 6.2-86.)

The Applicant has recommended impact avoidance and minimization measures to reduce these direct impacts to desert tortoise, including installation of exclusion fencing to keep desert tortoise out of construction areas, translocating the resident desert tortoises from the RSEP site, reducing construction traffic speed limits to reduce the incidence of road kills, and a worker training program. These measures are incorporated in Conditions of Certification **BIO-1** through **BIO-10** (discussed above), which apply to protection of all biological resources including desert tortoise, and in Conditions of Certification **BIO-14** through **BIO-17**, which are specific to desert tortoise.

Condition of Certification **BIO-14** requires the project owner to implement measures to manage the construction sites and related facilities in a manner to avoid or minimize impacts to desert tortoise. These measures include, but are not limited to, the following:

- Install permanent desert tortoise exclusion fencing at the solar generator site along the perimeter security fence and permanent access road from the security gate southward.
- Install temporary exclusion fencing at any additional construction site associated with the project, including the staging areas, stormwater diversion channels, and generator tie-in alignment.
- Following installation of the fencing, clear tortoises (to be performed by the Designated Biologist) and conduct clearance surveys.
- Relocate any special-status mammal or reptile species incidentally encountered during desert tortoise clearance.
- Record information about handled desert tortoises.

**BIO-15** requires the project owner to prepare and implement a final Desert Tortoise Translocation Plan pursuant to USFWS guidelines. The plan must be approved by the CPM in consultation with Western, USFWS, BLM, and CDFG.

We recognize that the clearance and translocation activities have inherent risks and could themselves result in direct adverse effects to desert tortoises, such as mortality, injury, or harassment of desert tortoises due to equipment operation, fence installation, removal of tortoise burrows, and tortoise translocation. These

impacts are fully discussed in the record and require mitigation. (Ex. 200, pp. 6.2-87-6.2-90.) In summary, translocation is any project-related action involving moving any desert tortoise or tortoise egg from one location to another, regardless of distance. As applied to this project, all tortoises, including adults, sub-adults, and juveniles found during clearance surveys on the solar generator site and contiguous disturbance area would be translocated off the site to new locations. However, some tortoises and eggs might be overlooked in this process. These tortoises and eggs would be subject to mortality from project activities within the tortoise exclusion fence during construction and future operation of the project.

The translocated tortoises are also subject to impacts because handling and translocation causes risk to tortoise survival. Therefore, all translocated tortoises must be radio-tagged and monitored to evaluate translocation success. If five or more tortoises are translocated, the USFWS also requires radio-tagging and follow up monitoring of an equal number of host population tortoises at each translocation site. In addition, USFWS requires radio-tagging and follow-up monitoring of an equal number of tortoises at a selected control site, where no translocated animals have been introduced. Desert tortoise translocation must follow a series of protocols summarized in the record.

Furthermore, capturing, handling, and translocating desert tortoises from the RSEP site after the installation of exclusion fencing could result in harassment and possibly injury or death. Impacts of translocation upon desert tortoises may include elevated stress hormone levels, changes in behavior and social structure dynamics, increased movement (caused by courting or aversive behavior with other tortoises, avoidance of predators or anthropogenic influence, homing, or seeking out of preferred or familiar habitat), spread of disease, increased competition for resources, and increased predation. Handling, holding, and transport protocols may compound with abiotic factors to affect the outcome for translocated individuals particularly during extreme temperatures, or if they void their bladders. If multiple desert tortoises are handled by biologists without the use of appropriate protective measures, pathogens may be spread among the tortoises, both resident and translocated animals.

For tortoises near but not within the RSEP site, fencing off habitat within their home ranges would likely result in displacement stress that could result in decrease in health, exposure, increased risk of predation, increased intra-specific competition, or death. Tortoises moved outside their home ranges may attempt to return to the area from which they were moved, therefore making it difficult to isolate them from the potential adverse effects associated with project

construction. Mortality for translocated desert tortoise has been estimated at approximately 15 percent, though recent evidence from the desert tortoise translocation effort conducted in support of the Fort Irwin Land Expansion Project indicates that mortality rates may be closer to 25 percent per year.

Based on the results of 2009 protocol surveys, the Applicant estimates that fewer than five desert tortoises would require translocation. The Applicant submitted a corresponding Draft Desert Tortoise Relocation/Translocation Plan, which proposes private, Applicant-owned land adjacent to the solar field site as a translocation area. This land site is proposed for long-term conservation under a conservation easement. Staff, in consultation with CDFG, USFWS, BLM, and Western biologists, confirmed that this adjacent land provides similar habitat and would be suitable as a translocation site and as compensation land. (Id.)

We find that mortality would be minimized with implementation of Conditions of Certification **BIO-8**, **BIO-14**, and **BIO-15**, but we are persuaded by the evidence that more is needed. More specifically, compensatory mitigation is required to offset the significant impacts to wildlife and fully mitigate adverse project impacts to desert tortoise.

Compensatory mitigation for desert tortoise typically involves balancing the acreage of habitat loss with acquisition of lands that would be permanently protected and enhanced to support viable tortoise populations. The compensation comes about by improving habitat conditions of the acquired property so that more desert tortoises are likely to survive and reproduce on these lands, thus offsetting over time the decrease in numbers of tortoise resulting from the habitat loss. (Ex. 200, p. 6.2-91 – 6.93.)

We find that the acquisition of mitigation lands will compensate for the habitat loss and to make up for the numbers of desert tortoise that would otherwise have been supported by that habitat, only if the following two activities also occur: (1) permanent protection and management of the lands for desert tortoise and (2) enhancement actions are undertaken.

The permanent protection is essential because that allows the lands to be managed in a way that excludes multiple threats and incompatible uses (e.g., grazing, off-highway vehicle use, roads and trails, utility corridors, military operations, construction, mining, grazing by livestock and feral burros, invasive species, fire, and environmental contaminants). Without this protection and management the desert tortoise populations on the acquired lands would be subject to the same threats that led to its population declines and threatened

status. An equally important component is the implementation of enhancement actions to improve desert tortoise survival and reproduction. These actions could include habitat restoration, invasive plant control, road closures or road fencing, reducing livestock and burro grazing, and controlling ravens and other predators.

The evidence establishes that CDFG, in implementing CESA requirements, requires a mitigation ratio for compensation desert tortoise lands of 1:1 for low-quality suitable habitat and a ratio greater than 1:1 for impacts to better quality habitat (i.e., acquisition of more than one acre of compensation lands for each acre lost). CDFG typically uses a 3:1 ratio or higher for good quality habitat such as that found along the RSEP generator tie-line alignment. (Ex. 200, p. 6.2-92.)

Staff - in consultation with USFWS, BLM, and CDFG biologists – determined that a mitigation ratio of 1:1 (i.e., acquisition and preservation of one acre of compensation lands for each acre of project disturbance) would reduce permanent and long-term impacts to approximately 1,412 acres of lower quality habitat at the solar generator site to less than significant. For permanent and long-term impacts to approximately 37 acres of higher-quality habitat along the generator tie-line, access road, and at the interconnector substation, a mitigation ratio of 3:1 would reduce impacts to less than significant. We find that these ratios are appropriately tailored to address the RSEP construction impacts. Guided by CDFG's approach, the higher ratio for the impacts along the generator tie-line and related disturbance is reasonable given the following factors: (1) the absence of soil compaction, pavement, or oiling found at the former airfield site; (2) the geographic nature of the disturbance, which would create multiple new, localized disturbed sites which can become sources of weed infestations or other disturbances into surrounding undisturbed desert lands; (3) the 4.6 miles of new roadway, which could lead to increased noise and other human disturbances as recreational motorists make use of the new access route; and (4) the generator tie-line alignment's location at the boundary of a BLM Wilderness Area, which has higher conservation priority than most other desert lands.

For impacts on public (BLM) lands, compensation may consist of land dedication and protection at a 2:1 mitigation ratio and an additional assessed financial contribution at a 1:1 ratio, so that total compensation is at a 3:1 ratio for impacts to BLM lands.[1] (Id.)

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[1] The NECO specifies the following desert tortoise compensation requirements (from page D-2, Appendix D, BLM and CDFG 2002):

*A mitigation fee based on the amount of acreage disturbed shall be required of proponents of new development. Within Desert Wildlife Management Areas (DWMAs) (Category I) the lands*

**Biological Resources Table 5** below summarizes Staff's impact estimates and compensation ratios.

**Biological Resources Table 5**
**Summary of Impact Estimates and Compensation Ratios for Desert Tortoise Habitat[1]**

| Project Component | Disturbance Acreage | Compensation Ratio | Compensation Acreage |
|---|---|---|---|
| | | | |
| Solar generator site, including permanent and long-term disturbance within and outside perimeter fence; all applicant-owned land. | 1,411.5 acres | 1:1 | 1,411.5 acres |
| Total permanent and long-term disturbance for generator tie-line, access road, and interconnector substation. | 36.9 acres | 3:1 | 110.7 acres[2] |
| **Acreage Totals** | **1,448.4 acres** | | **1,522.2 acres** |

1. For the purpose of estimating project impacts, staff includes all impacts except the 6-acre concrete pad and uses the higher acreage for each project component where an acreage range is indicated. See **Biological Resources Tables 2** and **3**.
2. Compensation for impacts to BLM land may consist of 2:1 habitat compensation and 1:1 habitat enhancement (financial contribution to be based on estimated cost of acquisition).

Compliance with **BIO-16** requires the project owner to tender security to ensure the acquisition, dedication, and protection of compensation lands. This financial assurance is generally provided in the form of an irrevocable letter of credit, a pledged savings account or another form of security prior to initiating ground-disturbing project activities.

The estimated security amount for the RSEP was calculated by multiplying the required compensation mitigation acreage by the estimated total per acre costs, a figure which represents the sum of the costs required for: (1) land acquisition, (2) initial habitat improvements, and (3) a long-term maintenance and management fee to support long-term management of the acquired lands.

The latter cost for the long-term management endowment is typically the largest component of the mitigation fee. Interest or earnings from the endowment creates a long term funding source to provide enough income to cover annual stewardship costs on the acquired lands and includes a buffer to offset inflation.

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*delivered or equivalent fee shall be an amount that achieves a ratio of 5 acres of compensation land for every 1 acre disturbed. Outside DWMAs (Category III) the lands delivered or equivalent fee shall be an amount that achieves a ratio of one (1) acre of compensation land for every 1 acre disturbed. Funds may be expended as approved by the Management Oversight Group in 1991. Lands will be acquired or enhanced within the same recovery unit as the disturbance. CDFG may require additional fees for management of lands and for rehabilitation of lands*

The amount for the endowment is established by a Property Analysis Record (PAR) or PAR-like analysis. PAR is a database method developed by the Center for Natural Lands Management, which calculates the costs of in perpetuity land management activities for a particular parcel. These activities include development of a desert tortoise management plan tailored for each parcel of mitigation land to assess habitat status, identify desired conditions, and develop plans to achieve conditions that would best support desert tortoise. Once the management plan is developed and approved by the appropriate resource agencies, implementation of enhancement actions such as fencing, road closure, weed control, habitat restoration as well as monitoring can begin. The goal of these activities is to increase the carrying capacity of the acquired lands for desert tortoise and increase their population numbers by enhancing survivorship and reproduction. (Ex. 200, pp. 6.2-94 – 6.2-96.)

Funding for the initial habitat improvements supports those actions needed immediately upon acquisition of the property to secure it and remove hazards. These activities might include fencing or debris clean-up, or other urgent remedial action identified prior to when the parcels were acquired. When the management plan is completed for the acquired parcel activities like these are thereafter funded from the interest produced by the long-term management maintenance fee described above.

In contrast to the state mitigation approach, the BLM does not require a long-term maintenance and management fee or other funding to manage the acquired desert tortoise mitigation lands because they pursue recovery goals through implementation of region-wide management plans and land use planning as described in the NECO and the Desert Tortoise Recovery Plan rather than through parcel by parcel acquisitions and management. The BLM typically requires a cash payment (proffer) prior to initiating ground-disturbing activities, which generally includes a per acre cost reflecting current land value and recent purchase prices, as well as additional acquisition and indirect costs and funding for appraisals, environmental site assessments, property cleanup, and an inflation contingency. However, as noted by the REAT agencies, other methods may be employed which would satisfy both BLM and the state agency legal requirements. (Id.)

As specified in **BIO-16**, the Applicant may elect to purchase and permanently protect compensation lands itself or to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. **Biological Resources Table 6** below

summarizes the project's compensation lands costs to mitigate desert tortoise, as well as the costs to mitigate impacts to the burrowing owl and streambeds.

It is important to note that under CESA, CDFG requires compensation lands to ensure in-perpetuity protection. To uphold this requirement, the REAT Agencies (Energy Commission, BLM, CDFG, and USFWS) agree that lands acquired and subsequently donated to BLM will have either a deed restriction or conservation easement in title that will preclude future development of the land. The REAT Agencies also agree that protection could be achieved by buying private in-holdings within designated wilderness or wilderness study areas, being that these areas are congressionally designated and as such preclude incompatible land uses within their boundaries, thus meeting the requirement for in perpetuity protection. BLM has an established process for accepting lands with deed restrictions or conservation easements and is working on a streamlined version of this process. (Ex. 200, pp. 6.2-94 – 6.2-95.)

As an alternative to purchasing compensation lands, BLM may use a portion of the compensation funds to implement desert tortoise habitat enhancement measures. These measures may include, but would not be limited to: habitat restoration and invasive plant control, eliminating livestock and burro grazing, fencing to exclude livestock and vehicles or reduce the incidence of road strikes, controlling tortoise predators such as ravens, feral dogs and coyotes, as well as increased law enforcement, signage and education.

BLM has further indicated that for any land enhancement actions or recovery actions implemented on existing BLM-owned lands, BLM would develop a Memorandum of Understanding (MOU) with CDFG containing provisions for notification of any proposed projects affecting those lands.

Based on the evidence and evaluations as summarized above, we find that habitat enhancement measures and habitat acquisition, would feasibly and effectively mitigate the RSEP's impacts to desert tortoises. The measures outlined above are consistent with the USFWS desert tortoise recovery plan recommendations which describe actions in addition to land acquisition that could reduce threats to desert tortoise populations.

## Biological Resources Table 6
## Summary of Compensation Lands Costs

| | Desert tortoise compensation | Burrowing owl compensation | Streambed compensation |
|---|---|---|---|
| Number of acres | 1,522 | 136.5 | 89 |
| Estimated number of parcels to be acquired, at 160 acres per parcel[2] | 10 | 1 | 1 |
| Land cost at $500/acre[3] | $761,000.00 | $68,250.00 | $44,500.00 |
| Level 1 Environmental Site Assessment at $3000/parcel | $30,000.00 | $3,000.00 | $3,000.00 |
| Appraisal at no less than $5,000/parcel | $50,000 | $5,000.00 | $5,000.00 |
| Initial site clean-up, restoration or enhancement, at $250/acre[4] | $380,500.00 | $34,125.00 | $22,250.00 |
| Closing and Escrow Cost at $5000/parcel[5] | $50,000.00 | $5,000.00 | $5,000.00 |
| Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at $20,000/parcel | $200,000.00 | $20,000.00 | $20,000.00 |
| 3rd Party Administrative Costs (Land Cost x 10%)[6] | $76,100.00 | $6,825.00 | $4,450.00 |
| Agency cost to accept land[7] [(Land Cost x 15%) x 1.17] (17% of the 15% for overhead) | $133,555.50 | $11,977.88 | $7,809.75 |
| **Subtotal - Acquisition and Initial Site Work** | $1,681,155.50 | $154,177.88 | $112,009.75 |
| | | | |
| **Long-term Management and Maintenance Fund (LTMM)** fee at $1450/acre[8] | $2,206,900.00 | $197,925.00 | $129,050.00 |
| | | | |
| **NFWF Fees** | | | |
| Establish Project Specific Account | $12,000.00 | n/a | n/a |
| Pre-proposal modified RFP or RFP processing[9] | $30,000 | n/a | n/a |
| NFWF Management fee For Acquisition and Enhancement Actions (Subtotal x 3%) | $50,434.67 | $4,625.34 | $3,360.30 |

| | Desert tortoise compensation | Burrowing owl compensation | Streambed compensation |
|---|---|---|---|
| NWFW Management Fee for LTMM account (LTMM x 1%) | $22,069.00 | $1,972.95 | $1,290.50 |
| **Subtotal of NFWF Fees** | $114,503.67 | $6,598.29 | $4,650.80 |
| | | | |
| **TOTAL** Estimated cost for deposit in project specific REAT-NFWF Account | **$4,002,559.17** | **$358,701.17** | **$245,710.55** |

1. Estimates prepared in consultation with CDFG, USFWS, and BLM. All costs are best estimates as of summer 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation. All acreages are staff's estimates based on available data; final acreages to be adjusted.
2. For the purposes of determining costs, a parcel is defined at 160 acres, recognizing that some will be larger and some will be smaller, but that 160 acres provides a good estimate for the number of transactions anticipated (based on input from CDD).
3. Generalized estimate taking into consideration a likely jump in land costs due to demand, and an 18-24 month window to acquire the land after agency decisions are made. If the agencies, developer, or 3rd party has better information on land costs in the specific area where project-specific mitigation lands are likely to be purchased, that data overrides this general estimate. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.
4. Based on information from CDFG.
5. Two transactions: landowner to 3rd party; 3rd party to agency.
6. Includes staff time to work with agencies and landowners; develop management plan; oversee land transaction; organizational reporting and due diligence; review of acquisition documents; assembling acquisition acreage, and related tasks
7. This amount covers the estimate of BLM's cost to accept the land into the public management system and costs associated with tracking/managing the costs associated with the donation acceptance, includes two physical inspections; review and approval of the Level 1 ESA assessment; review of all title documents; drafting deed restrictions; issue escrow instructions; mapping the parcels, and related tasks.
8. Estimate for purposes of calculating general costs. The actual long term management costs will be determined using a PAR (Property Assessment Report) or PAR-like analysis tailored to the specific acquisition. Includes land management; enforcement and defense of easement or title [short and long term]; and monitoring.
9. If determined necessary by the REAT agencies if multiple 3rd parties have expressed interest; for transparency and objective selection of 3rd party to carry out acquisition.

We also find that fencing, retirement of grazing allotments, removal of burros, and habitat restoration show considerable promise as actions that could increase desert tortoise survivorship and reproduction in portions of its range. These measures would address specific known threats to desert tortoise as identified in the Recovery Plan, Draft Revised Recovery Plan, and Spotlight Species Action Plan.

Finally, there is the issue of the location of habitat compensation lands. As discussed above, the Applicant already owns land suitable for desert tortoise compensation lands. This land, which is near but outside the RSEP footprint

area, is largely suitable as compensation for project impacts to desert tortoise habitat. (Ex. 200, pp. 6.2-97- 6.2-98.) However, according to the evidence, habitat values within a 250-foot buffer area surrounding the project footprint would be reduced due to indirect and off-site project impacts such as noise, lighting, ground vibration, human disturbance, weed introductions, and other construction and operation effects. Therefore, this 250-foot buffer area surrounding the perimeter fence (estimated as 155 acres), if included as desert tortoise compensation land, should be credited at the reduced mitigation value of 0.5:1 rather than 1:1.

Stated otherwise, an approximately 155-acre area would be credited as only 77 acres of mitigation land. For similar reasons, Applicant-owned lands between SR-62 and the project footprint (i.e., north of the heliostat perimeter and administrative area, estimated as 217 acres) should also be credited at the reduced mitigation value of 0.5:1 rather than 1:1. This area would be credited as only 109 acres of mitigation land.

Based on these approximations, we estimate that Applicant-owned land contiguous to the project area could account for approximately 1,691 acres, which is more than the required 1,522 acres of desert tortoise compensation habitat with a "surplus" of approximately 168.5 acres. (See Condition of Certification **BIO-16**.) If the Applicant chooses not to use these lands for mitigation, then alternate lands should be identified and acquired offsite. These lands should be within the Colorado Desert Recovery Unit.

The above-described, estimated compensation and security cost amounts are based on an assumption that Applicant would purchase all compensation land or provide cash funding to a REAT NFWF subaccount as described herein. To ensure compliance with the compensation requirement, Staff (in consultation with CDFG) recommends that the applicant transfer fee title of its ownership lands to CDFG under terms approved by CDFG. Alternatively, Staff recommends that a CDFG-approved non-profit organization qualified pursuant to California Government Code section 65965 hold the fee title or a conservation easement over the Applicant's compensation land. In the event an approved non-profit holds title, a conservation easement shall be recorded in favor of DFG in a form approved by CDFG; in the event an approved non-profit holds a conservation easement over the Lands, CDFG shall be named third party beneficiary. We concur with Staff's recommendations. (Ex. 200, p. 6.2-98.)

Couch's Spadefoot: Couch's spadefoot, a toad-like amphibian, is a BLM sensitive species and CDFG Species of Special Concern that breeds in summer rain pools and burrows below ground throughout most of the year. Its potential for occurrence on the solar generator site is low. Staff's recommended Condition of Certification **BIO-23** (Couch's Spadefoot Surveys and Breeding Habitat Avoidance) would require seasonal breeding habitat surveys and, as applicable, avoidance of breeding pools during construction of any portion of the project. Staff concludes that this measure would reduce potential project impacts below a level of significance. (Ex. 200, pp. 6.2-81 – 6.2-82.)

Mojave Fringe-Toed Lizard: The Mojave fringe-toed lizard is a BLM sensitive species and California Species of Special Concern. Its primary habitat is fine wind-blown (aeolian) sand deposits such as dunes and sandy patches within scrubby vegetation. It is not expected to occur on the solar generator site, but may occur on the generator tie-line alignment or interconnector substation site,. Construction impacts to habitat along the transmission lines would be temporary because aeolian habitat is only sparsely vegetated and post-construction habitat recovery would occur naturally in only a short time.

If the solar generator site were located between two areas of suitable habitat, then these washes could serve as dispersal routes for animals moving between the two areas. Instead, however, there is no potential Mojave fringe-toed lizard habitat upslope, and the washes on-site offer no opportunity for dispersal between the Danby Dunes and suitable habitat elsewhere in the area.

It is possible, but unlikely, that individual Mojave fringe-toed lizards could wander from the Danby Dunes onto the solar generator site where they could be crushed during construction or adversely affected by other aspects of the project. Although the species is a ranked by CDFG as a Species of Special Concern and by BLM as a Sensitive Species, staff concludes that these impacts, should they occur, would be less than significant under CEQA.

Because the project site is located upslope from the Danby Dunes, the proposed solar facility has the potential to interrupt fluvial or aeolian sand transport to the Danby Dunes from upslope or upwind sources. These potential effects were evaluated and found to be less than significant. The proposed RSEP solar generation site is outside the wind corridor that transports sand to the dunes. Fluvial sand transport during infrequent flash floods would largely continue without significant interruption, via the existing desert washes and proposed new drainage channels at the northern boundaries of the proposed solar generation

site. Sand originating from the heliostat field contributes only minimally to the Danby Dunes and interruption of that source would not be significant.

Suitable aeolian sand habitat or fine sandy desert wash habitat that may be occupied by Mojave fringe-toed lizards may occur in patches along the proposed generator tie-line alignment or at the interconnector substation site. Project-related transmission line construction would temporarily disturb habitat, and could crush individual Mojave fringe-toed lizards. But habitat for these animals, consisting of open sand, is expected to recover quickly following disturbance because vegetation recovery is not required. Thus, habitat impacts would be short-term. We conclude that without avoidance or mitigation, potential take of individual Mojave fringe-toed lizards for transmission line work could be significant under CEQA, but habitat impacts would not be significant. (Ex. 200, pp. 6.2-82 – 6.2-83.)

Compliance with Condition of Certification **BIO-8** will reduce any potential impact to the Mojave fringe-toed lizard to less than significant levels.

Burrowing Owl: Construction of the RSEP would result in direct loss of habitat for the burrowing owl. The burrowing owl is as a California Species of Special Concern and is a BLM Sensitive Species. Additionally, it is provided federal protection under the Migratory Bird Treaty Act and is listed as a Bird of Conservation Concern by the USFWS. General threats to this species include habitat loss or damage and a reduction in prey base due to urbanization, mining, trash disposal, pesticide use, grazing activities, off-highway vehicle use, invasion of non-native plants, and brush control activities.

The Applicant estimates up to seven burrowing owls occur on the solar generator site and generator tie line alignment. Thus, RSEP construction could result in loss of wintering burrow sites; potential loss of nest, eggs, or young if owls breed onsite; potential loss of breeding and/or foraging habitat; potential disturbance of nesting and foraging activities for populations on and near the project site. (Ex. 200. pp. 6.2-100 – 6.2-101.)

Condition of Certification **BIO-19** requires the project owner to implement a number of measures to avoid and offset impacts to burrowing owl. These measures include:

- Conduct pre-construction surveys.
- Implement avoidance measures such as establishing a non-disturbance buffer and engaging in monitoring activities.

- Engage in passive relocation.
- Conduct surveys of the relocation areas.
- Acquire and protect compensatory mitigation land. (Habitat compensation may be "nested" within compensation lands required for desert tortoise habitat compensation (See **BIO-16 and Biological Resources Table 6**, discussed above).

We find that project impacts of the solar generator site, generator tie-line, and interconnector substation to burrowing owl would be less than significant with incorporation of this mitigation.

Golden Eagle and Prairie Falcon: Golden eagle is a BLM sensitive species, and also is protected under the federal Bald and Golden Eagle Protection Act and is ranked as Fully Protected under the California Fish and Game Code. No suitable nesting habitat is found on the solar generator site or generator tie-line alignment; potential nesting habitat along the existing Parker-Blythe #2 transmission line is unknown.

Condition of Certification **BIO-18** imposes on the project owner the duty to perform an annual inventory during construction, make a determination of unoccupied territory only after completing two aerial surveys in a single breeding season, engage in monitoring, and implement an adaptive management plan. And because project construction would eliminate or degrade approximately 1,448 acres of foraging habitat in the region, this loss could interfere with normal behavior, causing golden eagles to forage more widely and therefore spend less time at or near their nests. This effect could be considered "take," pursuant to the Bald and Golden Eagle Protection Act. To address these impacts, Condition of Certification **BIO-16** requires acquisition, protection, and enhancement of compensation desert tortoise habitat; this habitat also would serve as golden eagle foraging habitat. (Ex. 200, p. 6.2-100 -6.2-101.)

With implementation of these Conditions, we find that construction impacts of the solar generator site, generator tie-line, and interconnector substation to golden eagle would be less than significant.

The evidence establishes that the project's impacts to prairie falcon forgaing and habitat would be similar to the impacts to the Golden Eagle. The prairie falcon has no special protection under the federal Bald and Golden Eagle Act nor is it fully projected under the California Fish and Game Code. It is protected under the latter as a bird of prey. Thus, construction impacts could be significant.

Implementation of Conditions of Certification **BIO-1** through **BIO-10** and **BIO-25** will mitigate these impacts. (Ex. 200, pp. 6.2-101- 6.2-102.)

Burrowing mammals: American badgers and desert kit foxes occur throughout the Project area, and construction activities could crush or entomb these burrowing species. Compliance with Condition of Certification **BIO-19**, which requires preconstruction surveys and avoidance measures to protect badgers and kit foxes, would avoid these potential impacts.

Wildlife Movement: Construction of the proposed RSEP would have the potential to interrupt wildlife movement through the area. Species, including Nelson's bighorn sheep, burro deer, and/or Yuma mountain lion would be affected.
More specifically, the solar generator site could interrupt potential north-south movement at two suitable wildlife crossings over the nearby California Aqueduct, and the project's perimeter fence could direct animals travelling east-west in the area onto State Highway 62 where risk of vehicle strike would be increased.

Condition of Certification **BIO-21** facilitates east-west wildlife passage alongside the highway and minimizes road mortality during project construction, by requiring the project owner to design and build the facility to provide a minimum 100-foot unfenced wildlife passage area south of SR-62 and north of the solar field and any contiguous project components that would interrupt wildlife passage. These include temporary and permanent project components, including but not limited to logistics and lay-down areas, administrative area, cultural resources interpretive site, permanent or temporary fencing, security gate, and any other project component, excluding unfenced linear facilities such as access roads or electrical distribution lines. With the exception of minimal disturbance necessary for linear project features, this wildlife passage area must consist of undisturbed or revegetated desert shrubland. (ex. 200, pp. 104-106.)

We find that the potential impacts to north-south movement would be less than significant. With implementation of Condition of Certification **BIO-21** impacts to east-west movement would be reduced to below a level of significance.

Impacts to Waters of the State A total of approximately 82.8 acres of state-jurisdictional ephemeral channels would be directly or indirectly impacted by construction of the solar generator, generator tie-line, and interconnector substation. All direct or indirect impacts to these channels are subject to California Fish and Game Code Section 1600 regulation.

Stormwater flows originating upstream from the project area would be diverted around the perimeter of the site; minor channels throughout the site would be disturbed during construction and plant operations (e.g., by vegetation removal, location of project facilities, vehicle access crossings, etc.). Although some drainages may be avoided during placement of the transmission towers along the generator tie-line, final engineering has not been completed, and drainages are numerous along the alignment.

Design constraints may require some transmission towers to be sited within ephemeral drainages. In addition, the proposed new access road that would extend for approximately 4.6 miles along the transmission line would cross numerous drainages. Therefore, quantification of impacts to drainages along the transmission line is not possible at this time, but Staff includes streambed acreage along the generator tie-line alignment in the total streambed acreage.

Direct impacts to drainages would include the removal of native vegetation, including some areas characterized by microphyll woodland; the discharge of fill; and the attenuation of peak flood flows which affect sediment transport. Most of these impacts would occur during access road construction; solar generation site clearing, grubbing, and improvements; and the development of the project's storm water management system. The attenuation of peak storm flows can adversely affect biological resources dependent on these features.

Flooding and regular scour is a form of disturbance to which many plant and animal species appear well adapted and is often required to provide suitable nesting or breeding habitat. The imposition of artificial stream flows by the attenuation of storm events may affect seedling recruitment at appropriate stream bank elevations, exaggerate drought stress, and increase mortality of seedlings. In arid systems, this may be particularly important to ensure seedling survival. In addition, the attenuation of flood events may prevent the essential geomorphic disturbance required to create new nursery sites for seedling recruitment while maintaining other areas relatively clear of vegetation within the scour zone that provides habitat for a number of other plant and animal specie. Non-natural flow regimes may also change the sediment load carried during regular storm events.

Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. Construction of the project would result in alterations to the existing hydrology and expected sediment transport across the site. Adverse effects on habitat are

created as sediment-starved water removes fine particulate material from the stream course resulting in stream narrowing, erosion of the streambed and banks, and development of a coarse, boulder-dominated streambed. Conversely, uninhibited storm flows carry a natural mixture of boulder, cobble, gravel, sand, and silt materials that are deposited at different intervals within the floodplain reflective of the strength of the most recent flood event. The diversity and episodic nature of streams and streambed materials creates habitat niches within the floodplain for varying wildlife.

Drainages along the transmission line corridor would not be permanently obstructed by the placement of transmission towers, and crossings such as culvert or Arizona crossings would be installed at locations where the transmission line access road crosses drainages so as not to impede normal flows.

Based on the attenuation of storm flows and other project impacts to ephemeral washes, it appears that all of the ephemeral washes on the solar generator site and portions of the washes downstream of the project boundaries would be adversely affected by the proposed project.

We deem permanent and long-term impacts of the project to state jurisdictional waters to be significant. The ephemeral drainages in the project area provide beneficial functions and values such as groundwater recharge, flood peak attenuation, floodwater storage, and wildlife corridors and habitat. For the proposed project, these functions would be impaired by construction and operation of the project. However, acquisition and enhancement of off-site State waters would mitigate project impacts to jurisdictional waters. Staff and CDFG propose a mitigation ratio of 1:1 for all permanent and long-term impacts to waters of the State. Staff does not recommend compensatory mitigation for impacts to downstream reaches, because the hydrology and sand transport functions of the proposed redirected channels would largely replace function of the existing channel system.

Condition of Certification **BIO-22** provides additional recommendations and guidance consistent with CDFG Streambed Alteration Agreement requirements. These include elimination of proposed detention basins at the southern margin of the project site to minimize alterations to off-site storm flows and sediment transport; implementation of Best Management Practices on-site during project construction and operation; and compensation for streambed impacts through the acquisition, protection, and management of comparable streambeds offsite at

a ratio of 1:1 (i.e., one acre of streambed compensation for each acre impacted by the project). It is possible that the Applicant could meet the compensation requirements with the implementation of Condition of Certification **BIO-16,** which requires compensatory mitigation lands for desert tortoise habitat. (Ex. 200, pp. 6.2-55 – 6.2-56, 6.2-110 – 6.2-113.)

With implementation of Condition of Certification **BIO-22**, impacts to State - jurisdictional waters associated with the desert washes on the solar generator site, generator tie-line, and interconnector substation would be mitigated to less-than-significant levels under CEQA. This condition also fulfills requirements of CDFG's Lake and Streambed Alteration Agreement program pursuant to Fish and Game Code Section 1600 et seq.

7. Assessment of Operation Impacts and Discussion of Mitigation

Operation of the RSEP would cause long-term persistent impacts to biological resources within the perimeter fence and in adjacent habitats surrounding the solar generator site, and along the length of the generator tie-line. Operational impacts to biological resources include disturbance to common and special-status wildlife from vehicle traffic; heliostat maintenance and washing; mowing; night-time lighting; maintenance activities; noise; collisions with structures; and the potential for electrocution and incineration of birds. The proposed evaporation ponds would also provide subsidies for ravens which can lead to increased tortoise predation.

These impacts are thoroughly discussed in the record and summarized below.

<u>Vegetation</u>. Ongoing disturbance, including mowing and other facilities operations and maintenance; increased shade from the heliostats; and increased dry-season water availability (from mirror washing) would all contribute to increased weed cover and abundance.

Vegetation not cleared or mown for construction and maintenance could be indirectly impacted by increased shading from the heliostats, depending on its location. Shading would alter microclimate conditions, including soil temperatures and light availability for photosynthesis, altering habitat suitability for native species and likely enhancing suitability for invasive weeds. Also, the potential spread or proliferation of non-native annual grasses, combined with the proximity to ignition sources could increase the risk of fire, and the effects to these poorly-adapted desert communities would be harmful, particularly to cacti and most

native shrub species. Burned creosote and other native shrubs are typically replaced by short-lived perennials and non-native grasses.

Other indirect effects on plant communities during operation include soil compaction, changes to the soil structure by use of dust suppressants, and changes in the distribution of precipitation falling on the solar field site. Precipitation runoff would concentrate along the drip lines below the heliostats rather than being uniformly distributed, altering localized microhabitat, including erosion and soil water content. Mirror wash water would similarly concentrate along the drip line below the heliostats, causing minor erosion of the soil at the drip lines and promoting invasive weeds.

These direct and indirect impacts to on-site native plant communities from operation are significant. With implementation of Condition of Certification **BIO-11**, the impacts would be reduced to less than significant levels.

We also recognize the project's potential to cause impacts to off-site vegetation. These include effects of erosion or sedimentation that could result from altered hydrology on the site (i.e., plants, their habitat, or their seed banks occurring down slope of disturbed soils could be eroded away or could be covered in sediment); changes in the hydrology from alterations in the drainage patterns of the site (e.g., to desert washes); the introduction of new weeds or spread of weeds already present in the area from the solar fields into the surrounding habitat; greater than normal dust levels; effects of herbicide drift on vegetation; and an increased risk of fire. (Ex. 200, pp. 6.2-113 – 6.2-114.)

Compliance with Certification **BIO-1** through **BIO-12**, and **BIO-16** would mitigate these impacts and reduce indirect and off-site operational impacts to special status plants, native plant communities, and wildlife habitat to less than significant levels.

<u>Birds, Raptors, and Common Wildlife</u>. Some bird species will likely nest in the project area during operation of the facility. Operational impacts are expected to remain an ongoing source of disturbance to nesting birds. As with construction activities, operation of the facility would likely result in disturbance to both ground nesting birds and possibly to birds actively nesting on the structures.

Species that use the project site for foraging but not nesting, such as golden eagle and prairie falcon, and wintering birds such as merlins, sharp-shinned hawks, and ferruginous hawks would be affected by the loss of foraging habitat,

which would be considered significant absent mitigation. Overall the loss of foraging habitat for these special-status bird species would add to the cumulative, significant loss of habitat for these species within the region. Condition of Certification **BIO-16**, the compensatory mitigation plan for desert tortoise, would reduce this habitat loss below a level of significance by the preservation of similar foraging areas.

The size of the project coupled with the operations activities including vegetation management, mirror washing, and other heliostat maintenance, as well as operational noise levels, would cause ongoing disturbance and mortality to small mammals and reptiles within the project perimeter as well as birds in the area. Compliance with **BIO-16** will adequately reduce these impacts as well.

Ravens, Coyotes, and Other Predators. Human activities in the RSEP area could provide resources in the form of trash, litter, or water, which attract and subsidize unnaturally high numbers of predators such as the common raven, kit fox, and coyote. This influx of predators could then place unnaturally high predation pressure on desert tortoises and other special-status species in the region. For example, common raven populations in some areas of the Mojave Desert have increased 1,500 percent from 1968 to 1988 in response to expanding human use of the desert.

In addition to ravens, feral dogs have emerged as major predators of the tortoise. Dogs may range several miles into the desert and have been found digging up and killing desert tortoises. Domesticated dogs brought to the project site with visitors may also harass, injure, or kill desert tortoises, particularly if allowed off leash to roam freely in occupied desert tortoise habitat.

We anticipate that the worker environmental awareness training required by Condition of Certification **BIO-6** and restrictions on pets being brought to the site required of all personnel set forth in Condition of Certification **BIO-8,** will reduce or eliminate the potential for these impacts. (Ex. 200, p. 6.2-115 -116.)

Although it was not discussed above regarding construction impacts, we note here that both construction and operation of the RSEP would increase raven and coyote presence in the project area. To reduce the local impacts of increased raven presence at the RSEP site and ancillary facilities, the Applicant has prepared a draft Raven Management Plan and has recommended additional avoidance and minimization measures. These recommendations are incorporated in Conditions of Certification **BIO-8** and **BIO-17**.

**BIO-17** also requires the Applicant to participate in the Regional Raven Management Program developed by USFWS, in cooperation with BLM, National Park Service, Department of Defense, and Department of Agriculture. This Program implements recommendations in the USFWS Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise. "Participation" means making a onetime monetary contribution in the amount of $105.00 per acre to the REAT Account held by NFWF, for the 1,448-acre total project footprint area (excluding the 6-acre existing concrete pad). This payment of $152,040.00 would support the regional raven management plan activities focused within the Colorado Desert Recovery Unit. The fees contributed by the Applicant would fund raven removal actions, education and outreach efforts, and surveying and monitoring activities identified in the federal Environmental Assessment.

We find that implementation of the above-described mitigation measures will an effective means of reducing the project's cumulative contributions to desert tortoise predation from increased raven numbers, will reduce the impacts below a level of significance; and, in combination with other Conditions of Certificate described in this section, will satisfy the requirements for full mitigation pursuant to CESA.

Increased Risk from Roads/Traffic. Vehicle traffic would increase as a result of construction and improvement of access roads, increasing the risk of injuring or killing desert tortoise and other wildlife. Vehicle access by project personnel during operations, as well as by the public along the new generator tie-line access road could result in mortality of desert tortoises by vehicle strikes.

The potential for increased traffic-related tortoise and other wildlife mortality is greatest along paved roads where vehicle frequency and speed is greatest, though animals on dirt roads may also be affected depending on vehicle frequency and speed. Additional impacts that may occur from unauthorized use of the access roads in the project area include unauthorized trail creation. (Ex. 200, p. 6.2-117 – 6.2-117.)

To minimize the risks of increased traffic fatality and other hazards associated with roads at the RSEP solar field site and ancillary facilities, the Applicant has proposed a variety of minimization measures that are incorporated in Condition of Certification **BIO- 8**. These measures include confining vehicular traffic to and from the project site to existing routes of travel, prohibiting cross country vehicle

and equipment use outside designated work areas, and imposing a speed limit of 20 miles per hour on access routes other than SR-62. The **BIO-8** requirements are supplemented and complemented by **BIO-16**, which requires compensation mitigation at a 3:1 ratio for habitat impacts on the new generator tie-line alignment. This increased ratio is intended, among other things, to mitigate for potential vehicle strikes along the alignment by protecting and enhancing off-site at a ratio greater than 1:1.

Noise, Disturbance, and Lighting. As discussed above regarding construction impacts, noise affects birds and other wildlife in several ways. During operations, estimated noise levels at the solar generator's perimeter fence would range between about 43 and 52 dBA. These levels are roughly comparable to light traffic or rainfall noise but may be loud enough to adversely affect bird nesting success. For most common species, this impact would be less than significant, but it could significantly affect breeding habitat suitability for special status desert upland passerine birds.

The desert tortoise habitat compensation land requirement of Condition of Certification **BIO-16**, would also serve as habitat for upland bird species, including loggerhead shrike and others that may be affected by the project. If the Applicant elects to use lands surrounding the solar generator site as compensation habitat, the lands within a 250-foot radius of the project area would be credited at a reduced ratio of 0.5:1 due in part to their noise-related reduced habitat value. (See desert tortoise discussion above regarding ratio calculations.) We conclude that **BIO-16** would reduce potentially significant operational impacts of noise below a level of significance by protecting off-site lands.

The evidence establishes that operation of the RSEP will require on-site nighttime lighting for safety and security. In addition, the large scale maintenance activities would require vehicle and equipment lighting in order to safely clean and service the heliostats. Lighting can affect essential behavioral activities, physiology, population ecology, and ecosystems of diurnal, crepuscular, and nocturnal wildlife. And, ecological light pollution may affect competition and predation for some species. Lighting may also increase the risk of predation of wildlife because they may be more detectable to nocturnal predators. Species such as bats that prey on insects drawn to lights, may be attracted to lighted construction areas which would increase the potential for disturbance and mortality.

To reduce off-site lighting impacts, lighting at the RSEP facility would be restricted to areas required for safety, security, and operation. Exterior lights would be hooded, and lights would be directed on site so that light or glare would be minimized. Low-pressure sodium lamps and fixtures of a non-glare type would be specified. Switched lighting would be provided for areas where continuous lighting is not required for normal operation, safety, or security; this would allow these areas to remain un-illuminated (dark) most of the time, thereby minimizing the amount of lighting potentially visible off site. These measures are described in Condition of Certification **VIS-2**. With implementation of this measure, we find that lighting impacts to wildlife at the RSEP would be reduced below a level of significance. (Ex. 200, pp. 6.2-117 – 6.2-118.)

Evaporation Ponds. The RSEP includes three five-acre evaporation ponds that would process wastewater discharge from the water treatment system and oil/water separator. Evaporation ponds could serve as a perennial water source in an otherwise arid region and act as a subsidy to ravens. Even if they are fenced off from wildlife, evaporation ponds may still attract predators and other species, including waterfowl. Subsidized predators would increase potential project effects to desert tortoise, Mojave fringe-toed lizard, and other less mobile species. In addition, small mammals, waterfowl, shorebirds, and other resident or migratory birds that drink or forage at the ponds would be exposed to potentially lethal doses of hyper-saline water, depending on the salts and concentrations present. Monitoring results from the summer of 2007 at Harper Lake Solar Electric Generating System in the Mojave Desert revealed that numerous waterfowl died at the evaporation ponds due to salt toxicosis.

Another concern is that the evaporation ponds would attract foraging birds, whether or not they land on the ponds, increasing potential risk of burning near the central tower or standby points, or collision with project facilities including the proposed transmission towers, heliostat structures, and central tower. Foraging bats also may be attracted to the evaporation ponds, but staff believes that potential adverse impacts to bats would be minimal because they would not be active during daylight hours while the heliostats focus energy on the central tower.

Terrestrial wildlife are at risk of drowning if they fall into the water and cannot climb back out, and they can be poisoned by high levels of salt and other toxins or impurities in the water of the evaporation ponds. However, terrestrial wildlife exposure to the evaporation ponds would be limited by the perimeter exclusion fencing, and any individuals that could encounter the ponds would likely be those

that remain within the fence-line after the fence is erected at the start of construction activities.

We consider these potential impacts to wildlife to be significant absent mitigation the set forth in Condition of Certification **BIO-24** which requires netting of evaporation ponds to reduce the above risks to birds, and reduce the chance of attracting predators. Implementation of recommended design modifications and follow-up monitoring and management, as required by this Condition reduce evaporation pond impacts to birds and other wildlife to less-than-significant levels under CEQA. (Ex. 200, pp. 6.2-118-6.2-120.)

Wildlife Movement. The primary difference between anticipated construction impacts and operational impacts to wildlife movement will be the removal of the security fence around the proposed logistics and laydown area at the northern site boundary, along SR-62. After construction is completed, the RSEP would be surrounded by a circular security and tortoise exclusion fence that would effectively exclude terrestrial wildlife movement onto or across the site. The circular exclusion fence would reduce potential north-south wildlife movement at the two desert wash crossings north of the site

At the two points where washes cross SR-62 near the project site, the perimeter exclusion fence would be several hundred feet or more south of the highway and its outline would tend to direct southward-traveling wildlife to the east or west, away from the highway and the RSEP site. At these two sites, the fence would not be immediately adjacent to the highway and thus would not force animals to travel along the roadway for any distance. Therefore, wildlife moving southward through those crossings would likely be at increased risk of road mortality compared with present conditions, though somewhat decreased risk compared with conditions during the construction phase of the project. This risk is somewhat reduced by the proposed configuration of the permanent fence.

The evidence indicates that numerous species, including large mammals (burro deer, Nelson's bighorn sheep, and mountain lion) and perhaps desert tortoises, may *infrequently* cross the three linear barriers north of the proposed RSEP site. The proposed project, including the permanent perimeter fence, would further limit potential movement. Also, due to presence of numerous similar crossing sites to the east and west, and due to the proposed configuration of the perimeter fence, the project's operational impacts to wildlife movement would be less than significant.

However, mortality is still of concern. To minimize highway mortality, Condition of Certification **BIO-21** requires that the logistics and lay-down area be redesigned to provide a 100-foot buffer area between the road shoulder and the temporary security fence, and that the security gate on the main access road be relocated to the main fenceline, to remove the fenced barrier to east-west wildlife movement across the permanent access road. (Ex. 200, pp. 6.2-52 – 6.2-53, 6.2-120-.)

Avian Collision, Incineration, Electrocution, Glare, Lighting. In addition to the adverse impacts of lost or degraded habitat, the RSEP would cause operational impacts to migratory and special-status bird species, including mortality caused by collisions with the proposed tower, heliostats, or transmission line; incineration or burns to birds that fly into the reflected sunlight between the heliostats and the solar receiver tower; and potential adverse effects of glare.

The record describes the particular nature of each of these hazards. The evidence indicates that collisions with heliostat mirrors is a real threat. Additional factors that may lead to mortality of migratory birds and special-status birds are nighttime project lighting, evaporation ponds, and perhaps a “mirage” effect that may be caused by the proposed heliostat field. Thus, potential for bird mortality through collision with the project components would be significant without mitigation. Condition of Certification **BIO-8** requires the Applicant to construct the transmission line according to the standards in the Avian Power Line Interaction Committee’s (APLIC’s) *Mitigating Bird Collisions with Power Lines* (APLIC 1994) to minimize risk of collision. **BIO-8** includes specifications that the lighting atop the towers use flashing strobe lights rather than steady burning, and recommendations for other project lighting to be shielded downward and turned off when not needed. Furthermore, Condition of Certification **BIO-25** requires the project owner to prepare and implement an Avian and Bat Protection Plan to minimize death and injury of birds and bats from collisions with facility features and focused heat and light at and near the central tower and at “standby points”; and to identify adaptive management measures to minimize such impacts. With the implementation of this mitigation, impacts to birds from collisions with the project components would be less than significant.

Incineration and electrocution are also a threat to birds. Egrets, herons, raptors, and other large aerial perching birds, including those accorded state and/or federal protection, are susceptible to power line electrocution if they simultaneously contact two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a bird

attempts to perch on a tower/pole with insufficient clearance between these energized elements. The majority of bird electrocutions are caused by lines that are energized at voltage levels between 1-kV and 60-kV, which generally have less clearance between these elements. Distribution lines designed for 69 kV or less represent a greater danger to raptors than transmission lines designed for greater than 69 kV, because the spacing between elements in distribution lines is much less than that of transmission lines. The RSEP proposed transmission line would be built to 230-kV standards to allow for future system upgrades, but would initially be energized at 161 kV.

The evidence established that BLM will not approve a transmission line that is not raptor safe. Potential impacts to wildlife resulting from electrocution by transmission lines required for RSEP interconnection may be mitigated by incorporating the construction design recommendations provided in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006.* Specifically, the phase conductors shall be separated by a minimum of 60 inches and bird perch diverters and/or specifically designed avian protection materials should be used to cover electrical equipment where adequate separation is not feasible. These requirements are further described in Condition of Certification **BIO-8**, the implementation of which would prevent or minimize bird electrocution to less than significant levels.

Glare from the reflection of sunlight off the heliostats is another factor that may contribute to the risk of avian collision on the project site. Bird response to glare from the proposed heliostats is not well understood. Given the lack of research-based data on these impacts, we cannot reach a conclusion as to significance. However, due to potential for significant impacts, we find that compliance with Condition of Certification **BIO-25** would allow for further evaluation and mitigation as appropriate. Thus, we conclude that implementation of **BIO-25** would reduce any significant project effects to bird mortality below a level of significance be developing and implementing adaptive management measures to reduce mortality as indicated by monitoring. (Ex. 200, pp. 6.2-120 – 6.2-121.)

Waters of the State. The impacts and mitigation discussion above regarding RSEP construction applies equally to operation impacts.

8. Impacts from Project Closure and Decommissioning

In the future, the RSEP would experience either a planned closure or be unexpectedly (either temporarily or permanently) closed. When facility closure occurs, it must be done so that it protects the environment and public health and

safety. A closure plan would be prepared by the project owner prior to any planned closure. To address unanticipated facility closure, an “on-site contingency plan” would be developed by the project owner and approved by the Energy Commission Compliance Project Manager (CPM). Facility closure requirements are discussed in more detail in the **General Conditions** section of this Decision. Facility closure mitigation measures would also be included in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) prepared by the project owner and described in Condition of Certification **BIO-7.**

The facility closure plan must address habitat restoration measures to be implemented in the event of a planned or an unexpected permanent closure and must also include a funding mechanism to ensure sufficient funds are available for decommissioning and habitat restoration. Planned or unexpected permanent facility closure should address the removal of the transmission conductors and poles since birds are known to collide with transmission line ground wires and poles may serve as predatory perches and nesting sites. (Ex. 200, p. 6.2-125.0

9. Project Alternatives

Staff performed a comprehensive evaluation of project construction and operation impacts under three difference alternatives scenarios: (1) reduced acreage alternative, (2) north of desert center alternative; and (3) SR 62/Rice Valley Road Transmission Line Alternative. The **Alternatives** section of this Decision describes each of the alternatives. (Ex. 200, pp. 6.2- 125 - 6.2-136.)

On balance, none of the alternatives is superior to the proposed RSEP in reducing or avoiding impacts to biological resources. We merely provide a summary of Staff’s extensive analysis and conclusions.

<u>Reduced Acreage Alternative</u>. This alternative would decrease the project footprint by approximately 140 acres, or approximately ten percent. The boundary of the solar field site would contract slightly towards the center as compared with the proposed project. This altered project design would avoid impacts to the most active ephemeral washes, in the eastern margin of the site. Otherwise, the design change would not alter project impacts to biological resources. This reduction in project size would not avoid desert tortoise impacts, though it would reduce habitat loss by approximately 140 acres. Avoidance of the easternmost ephemeral washes would slightly reduce impacts to waters of the State and would reduce or avoid alterations to existing active flood flow and sediment transport down slope across the site. Impacts to biological resources under the Reduced Acreage Alternative would be similar to those described for

the proposed project except for the reduction in acreage of impacts to common and special status species, including desert tortoises, golden eagle foraging habitat, and others as described above.

Staff's proposed Conditions of Certification would mitigate for the Reduced Acreage Alternative's direct, indirect, and cumulative impacts to biological resources. These conditions are identical to those for the proposed project, except that the compensatory mitigation acreages recommended for desert tortoise habitat (Condition of Certification **BIO-16**) and State waters (Condition of Certification **BIO-22**) would be adjusted to reflect the reduced project footprint.

Desert Center. Few construction impacts to special-status animal species would be expected because the North of Desert Center Alternative site is largely fallow agricultural land. However, the habitat is suitable for burrowing owls, which commonly use agricultural land for foraging during winter or breeding seasons. Multiple observations of the desert tortoise have been reported to the CNDDB within 5 miles of this site, including records adjacent to or within the northern and eastern portion of the site. Thus, there is high potential for impacts to desert tortoise.

There is some potential for other special-status species, including Harwood's milk-vetch, northern harrier, loggerhead shrike, American badger, and desert kit fox to be impacted on the North of Desert Center Alternative site because potential habitat for these species is present and would be impacted by development of the alternative.

Because the primary wash on site would be avoided by project design, impacts to wildlife movement across the site in desert dry wash woodland connecting undeveloped or undisturbed lands on either side of the site could be minimized. However, this east-west connectivity would likely be disrupted to some extent due to the construction and other disturbances on either side of the wash.

Additional impacts to vegetation communities, and possibly special-status species, would occur due to the construction of linear facilities (e.g., transmission lines) associated with a solar project on the North of Desert Center Alternative site.

An increased incidence of accidental wildfire is also a possibility during operation (although the potential is low) from downed transmission lines. Additionally, there would be the potential for edge effects to special-status animal species in surrounding habitat areas from operational night lighting or noise.

Implementation of the Conditions of Certification would reduce the impacts to less than significant levels.

The SR 62/Rice Valley Road Transmission Line Alternative. This alternative would result in reduced habitat disturbance as compared with the proposed project because it would be sited along existing roadways along its entire length, eliminating the need for the construction of a new access road. Additionally, the alternative route would be in more disturbed areas along existing roads and adjacent to existing power lines along portions of the route, as compared with the proposed project generator tie-line alignment. The areas disturbed by the SR-62/Rice Valley Road Transmission Line Alternative would be of lower quality for wildlife than those disturbed by the proposed project. It should be noted that the alternative route is longer than the proposed route, and would require 30 to 35 additional tower bases, compared with the proposed route, with additional construction disturbance at each additional tower location. All of the additional disturbance would be in areas nearer to existing human influence (e.g., roadways) than the western segment of the proposed project alignment.

Biological field surveys have not been conducted on the alternative route along SR-62 and Rice Valley Road north of the proposed project junction, although similar habitats and species are expected to occur. It is likely that similar special-status species would occur along this route, such as special-status plants, desert tortoise, and burrowing owl. Due to the alignment's proximity to a major highway, established road, and an existing power line corridor, it appears that impacts to biological resources would be reduced. Therefore, even if special-status species are found along the alternative route, the habitat impacted by this Alternative is likely to be of lower quality for these species than the proposed route. Therefore, impacts to general and special-status species would be of the same types as described for the proposed project.

This alternative would increase the total length of the transmission line by approximately 4.4 miles. This increase in length would slightly increase the potential for birds to collide with or be electrocuted by the transmission line. Because the new route would be located less than 0.25 mile from the Colorado River Aqueduct in some places, while the proposed route is over two miles from the aqueduct at the nearest location, any birds drawn to the aqueduct as a water source could be at an increased risk for collision with the transmission lines. However, Condition of Certification **BIO-8** would require the transmission line and all electrical components to be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) S*uggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Mitigating Bird*

*Collisions with Power Lines* (APLIC 1994) to reduce the likelihood of bird electrocutions and collisions. Therefore, impacts to birds from collisions and electrocutions would be less than significant under CEQA with implementation of Certification **BIO-8.**

The Conditions of Certification would mitigate any impacts to less than significant levels. Thus, although this alternative appears superior to the proposed RSEP project, with implementation of the **Biological Resources** Conditions of Certification, the impacts of the proposed RSEP project to biological resources will also be reduced to less than significant levels.

10. Cumulative Impacts

The "geographic extent" of the cumulative analysis of impacts to biological resources refers to the area within which cumulative impacts are likely to occur. For the RSEP, the geographic extent varies depending on the resource being evaluated. For example, the geographic extent for impacts to a special-status species generally includes that species' entire range, including the California desert and beyond. However, for a special-status species that occurs in a series of isolated populations, cumulative effects analysis may appropriately focus on relatively small, local populations as well as their wider geographic distribution. This situation often applies to plants or animals with specialized habitat requirements such as mountain ranges or windblown sand. For species whose geographic range extends outside California, cumulative effects for CEQA purposes may appropriately focus on cumulative impacts within California, while the analysis for NEPA purposes may extend to other states.

The following discussion describe the geographic extent under consideration for cumulative impacts to each biological resource that would be affected by the proposed project. (Ex. 200, pp. 6.2-136.)

Development is limited in the general area around the RSEP site. As shown below in **Biological Resources Table 7**, there are ten existing developed facilities in the Rice Valley area and surrounding area within approximately 20 miles of the RSEP site. The facilities closest to the RSEP site include the Rice Valley Grazing Allotment, the Arizona-California Railroad, and the Colorado River Aqueduct. In addition, SR-62 runs in an east-west direction immediately north of the RSEP site, in parallel with the adjacent aqueduct and railroad. Other existing developments in the Rice Valley area include various transmission lines, the Iron Mountain Pumping Plant and airstrip, and recreational opportunities. More distant

facilities (greater than 20 miles from the RSEP) in eastern Riverside County include Interstate 10 to the south, the Eagle Mountain Pumping Plant, the Blythe Energy Project, the Kaiser Mine (now inactive), and the Devers-Palo Verde Transmission Line.

Biological Resources Table 7
Existing Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| Existing Projects in the Rice Valley area within 15-20 miles of proposed project | | | | | | |
| 1 | Iron Mountain Pumping Plant | Iron Mountain Pump Plant Road, ~18 miles northwest of Rice project | Metropolitan Water District of Southern California | Existing | N/A | Iron Mountain Pump Plant is part of the Metropolitan Water District of Southern California's facilities and houses the pumping plant, holding ponds, a small residential area and a portion of the Colorado River aqueduct itself. Ongoing Operation and Maintenance activities occur frequently and will continue throughout the life of the Pump Plant. |
| 2 | Iron Mountain Pump Plant Airport - Private | Iron Mountain Pump Plant Road, ~18 miles northwest of Rice project | Metropolitan Water District of Southern California | Existing | N/A | Privately owned and operating airport 18 miles northwest of the proposed Rice Solar Energy project. |
| 3 | Metropolitan Water District 230-kV Transmission Line | Riverside County, San Bernardino County,~18 miles west of the proposed Rice project | Metropolitan Water District | Existing | N/A | Metropolitan Water District's 230-kV line running in a north-south direction from Camino Substation near Needles Freeway (Hwy 40) in San Bernardino County south to Eagle Mountain Substation in Riverside County. |
| 4 | Iron Mountain Substation | San Bernardino County, ~18 miles northwest of the proposed project | Metropolitan Water District | Existing | N/A | Metropolitan Water District's Iron Mountain Substation located approximately 18 miles northwest of the proposed Rice Solar Energy Project. |

Biological Resources Table 7
Existing Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| 5 | Western Area Power Administration 161-kV Transmission Lines (2) | Two existing lines in eastern Riverside County, ~12 and ~20 miles east of proposed project. | Western Area Power Administration (WAPA) | Existing | N/A | WAPA's two 161-kV transmission lines running in a north-south direction east of proposed Rice Solar Energy Project, both terminating near CA/AZ border near Lake Havasu. |
| 6 | Rice Valley Grazing Allotment | Rice Valley, surrounding Rice Solar Energy Project to east, south and west. | BLM | Existing | 74,740 | A 10-year grazing lease on the Rice Valley Grazing Allotment authorizes sheep grazing on public land. The allotment boundaries form a U-shape parcel surrounding the proposed project site. The eastern boundary begins at approximately 2 miles east of the site and extends for ~2 miles east; the western boundary begins at approximately 2 miles west of the site and extends ~4 miles west. The southern boundary begins ~1 mile south of the site and extends ~10 miles south. |
| 7 | Arizona-California Railroad | Runs from Cadiz, Ca to Parker, Az. A portion parallels State Route 62, immediately north of proposed Rice project. | RailAmerica | Existing | N/A | The Arizona-California railroad operates nearly 300 miles of rail encompassing 190 miles of rail from Cadiz, Ca to Matthie, Az, 57 miles from Matthie, Az to Pheonix, Az anda 50 mile branch extending from Rice, Ca to Ripley, Ca. |
| 8 | Colorado River Aqueduct | Runs parallel to State Route 62, immediately north of proposed Rice project. | Metropolitan Water District of Southern California | Existing | N/A | The aqueduct carries water 242 miles, from Lake Havasu, on the Colorado River, to Lake Matthews in western Riverside County. |

Biological Resources Table 7
Existing Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| 9 | West-wide Section 368 Energy Corridors | Riverside County | BLM, DOE, U.S. Forest Service | Approved by BLM and U.S. Forest Service | N/A | Designation of corridors on federal land in the 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). One of the corridors runs along the southern portion of Riverside County. |
| 10 | Recreational Opportunities | Eastern Riverside County | BLM | Existing | N/A | BLM has numerous recreational opportunities on lands in eastern Riverside County and bordering eastern San Bernardino County, including Rice Valley Wilderness Area, Palen/McCoy Wilderness Area, the Turtle Mountains Wilderness Trail, Blythe-Vidal Old Road Trail, and Midland Long-Term Visitor Area. |
| Additional Existing Projects Outside 15-20 mile Boundary in Eastern Riverside County | | | | | | |
| 11 | Interstate 10 | Linear project running from Santa Monica to Blythe (in California) | Caltrans | Existing | N/A | Interstate 10 (I-10) is a major east-west route for trucks delivering goods to and from California. It is a four lane divided highway in the Blythe region. |
| 12 | Eagle Mountain Pumping Plant | Eagle Mountain Road, west of Desert Center | Metropolitan Water District of Southern California | Existing | N/A | 144 ft. pumping plant that is part of the Metropolitan Water District of Southern California's facilities located approximately 40 miles southwest of the proposed Rice project. |
| 13 | Blythe Energy Project | City of Blythe, north of I-10, 7 miles west of the CA/AZ border | Blythe Energy, LLC | Existing | 76 | 520 MW combined-cycle natural gas-fired electric-generating facility. Project is connected to the Buck Substation owned by WAPA. |
| 14 | Kaiser Mine | Eagle Mountain, north of Desert Center | Kaiser Ventures, Inc. | Mining activities stopped in 1983. | N/A | Kaiser Steel mined iron ore at Kaiser Mine in Eagle Mountain and provided much of the Pacific Coast steel in the 1950s. Mining project also included the Eagle Mountain Railroad, 51 miles long. Imported steel captured market share in the 1960s and 1970s and primary steelmaking closed in the 1980s. |

Biological Resources Table 7
Existing Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| 15 | Devers-Palo Verde Transmission Line | From the Midpoint Substation to Devers Substation | Southern California Edison | Existing | N/A | Existing 500 kV transmission line parallel to I-10 from Midpoint Substation, approximately 10 miles southwest of Blythe, to the SCE Devers Substation, near Palm Springs. |

In consideration of the existing cumulative conditions encompassing the Rice Valley area and surrounding area, the RSEP would contribute to the loss of habitat for sensitive species including desert tortoise, burrowing owl, and other species described above. The combined effects of existing development and the proposed project's additional incremental effect on biological resources would be cumulatively significant. Habitat loss and fragmentation has already contributed to the decline of several California desert associated species. The proposed project's contribution to these effects would be mitigated with implementation of Conditions of Certification **BIO-1** through **BIO-26**. With implementation of these Conditions of Certification, the project's contribution to cumulative effects would not be considerable.

Cumulative impacts to the specific resources and individual species are summarized as follows.

Vegetation Communities. The RSEP would contribute incrementally to the cumulatively significant impacts of existing and future projects to Sonoran creosote bush scrub habitat. Sonoran creosote bush scrub is a common and widespread community in the southeastern deserts of California. Large, intact blocks of habitat such as that in the Rice Valley are important to wildlife movement and to foraging and breeding habitat for wildlife, including special-status species and State and federally listed species.

Conditions of Certification **BIO-1** through **BIO-11**, and **BIO-16** would minimize the proposed project's contribution to cumulative loss of Sonoran creosote bush scrub.

Further, given the relatively small proportion of Sonoran creosote bush scrub habitat to be lost for the RSEP and the anticipated compliance with the Conditions of Certification, the RSEP's contribution to the loss of Sonoran

creosote bush scrub in the region is not cumulatively considerable and would be less than significant.

Special Status Plants. The RSEP's incremental contribution to cumulative impacts to special-status plants would be minor. Three special-status species would be impacted by the RSEP: chaparral sand-verbena, Utah cynanchum, and Harwood's milk-vetch. Chaparral sand-verbena is widespread in the Colorado Desert, and is not rare in this region. Utah cynanchum is on the CNPS Watch List (List 4), but adverse impacts would not be significant under CEQA. Impacts to Harwood's milk-vetch and any other special-status plants found on the project site would be avoided or minimized through implementation of Condition of Certification **BIO-12**. Given the relatively low abundance of these plants in the RSEP and generator tie-line footprints, the occurrence of Harwood's milk-vetch in areas to be avoided due to other resource concerns (sandy washes and similar habitats); the relatively low local conservation concern for chaparral sand verbena and Utah cynanchum, and the anticipated compliance with Condition of Certification **BIO-12**, the RSEP would not make a considerable contribution to the cumulative regional impacts to special-status plants, and its cumulative impact would be less than significant.

Common Wildlife. The RSEP's incremental contribution to cumulative impacts to common wildlife, including most resident and migratory birds, would be habitat loss and fragmentation. Most common wildlife species range widely over California, and these species have not been identified as conservation priorities because significant population declines and other risk factors have not been identified. The RSEP would contribute incrementally to impacts to common wildlife such as disruption of movement, disturbance, mortality, loss of habitat, and fragmentation.

With implementation of the Conditions of Certification, this incremental contribution would be mitigated to the extent feasible and would not result in the loss of a population or a trend toward federal or State listing for any common wildlife species. Consequently, the RSEP would not make a considerable contribution to the cumulative regional impacts to common wildlife, when combined with the effects of past and future projects in the NECO planning area, and its impact would be less than significant.

Desert Tortoise. The RSEP's incremental contribution to cumulative impacts to desert tortoise would be similar to the impacts of other solar developments in the range of the Mojave population, and would include loss of habitat, interference

with regional movement, stress and potentially illness or mortality from translocation, and indirect impacts from an increase in predators such as the common raven.

The current USGS Desert Tortoise Habitat Model maps the project area and most of Rice Valley as “Medium Quality” desert tortoise habitat, with scores of 0.3-0.7 on a scale of 0 to 1 (0 being the lowest quality and 1 being the highest quality). The model is a predictive model for mapping the potential distribution of desert tortoise habitat and is useful tool for evaluating different land-use issues that tortoises face at a landscape scale. It is not intended to be used, or viewed, as a substitute for ground-based and site-specific field surveys.

As discussed above, the RSEP would have permanent and long-term impacts to about 1,450 acres of tortoise habitat. This would amount to less than 0.005 percent of the total medium quality habitat mapped within the NECO planning area in the habitat model (2,797,866 acres).

We have adopted mitigation to reduce project-level impacts to desert tortoise, including construction minimization measures (**BIO-8**), clearance surveys and exclusion fencing (**BIO-14**), preparation and implementation of a translocation plan (**BIO-15**), acquisition and conservation of compensation lands (**BIO-16**), and preparation and implementation of a plan to control ravens (**BIO-17**). Together these measures would reduce project-level impacts of the solar generator, generator tie-line, and interconnector substation to less than significant under CEQA and would fully mitigate those impacts under CESA. Staff concludes that, with incorporation of these measures, those components of the RSEP’s contribution to significant cumulative effects to desert tortoises would not be considerable.

Mojave Fringe-Toed Lizard. The RSEP’s impacts to Mojave fringe-toed lizard would largely be limited to construction-related impacts during construction or upgrade work on the generator tie-line alignment. Potential habitat on the solar generator site is marginal, patchy, and not extensive. Compliance with Condition of Certification **BIO-8** would minimize potential adverse impacts to the species and its habitat during transmission line work. Mojave fringe-toed lizard occurs in the Danby Dunes, less than one mile south of the project site.

If the RSEP causes an increase in predators such as the common raven due to food and nesting habitat subsidies, then these indirect project impacts could affect the off-site Mojave fringe-toed lizard population. Condition of Certification

**BIO-17** requires the preparation and implementation of a Raven Management Plan to minimize the potential for increases in raven populations related to implementation of the RSEP; therefore, the incremental contribution of the solar generator, generator tie-line, and interconnector substation to cumulative impacts to the Mojave fringe-toed lizard would be reduced to less than significant with mitigation incorporated.

Golden Eagle. The RSEP would contribute incrementally to the cumulative loss of golden eagle foraging habitat. The RSEP solar generator site does not provide suitable golden eagle nesting habitat, but there are inactive recent golden eagle nest sites known within 10 miles of the proposed project site, and these sites could be used again in the future. The entire RSEP site, including the proposed generator tie-line alignment provides potential foraging habitat and is within foraging range of known or potential nest sites. Other renewable developments, both existing and proposed, in the NECO planning area would have similar potential impacts, and cumulatively, development in the California deserts would have significant impacts on golden eagles.

Implementation of Conditions of Certification **BIO-1** through **BIO-11** would minimize project impacts to potential golden eagle foraging habitat. Condition of Certification **BIO-16**, which would require compensatory land acquisition to mitigate impacts to desert tortoise (described above), would mitigate project-specific loss of foraging habitat to less-than-significant levels. Condition of Certification **BIO-25** would require compliance with the Bald and Golden Eagle Protection Act as part of the Avian and Bat Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. With implementation of these measures, the solar generator, generator tie-line, and interconnector substation's contribution to significant cumulative impacts to golden eagles would be less than considerable.

Prarie Falcon. A prairie falcon was observed flying over the project site during surveys for the RSEP and nesting prairie falcons were reported in the surrounding mountains. This species has a similar life history as the golden eagle, and impacts would be similar to those described for golden eagle above. Prairie falcons are likely to forage over the RSEP site year-around. However, the prairie falcon's overall distribution appears to be stable and it has no federal conservation status other than its protection under the Migratory Bird Treaty Act. Thus, we find that the RSEP's incremental contribution to cumulative impacts to prairie falcon would be less than significant.

Burrowing Owl. The RSEP would contribute incrementally to the cumulative loss of burrowing owl wintering habitat. Recently active burrows were identified on site during surveys in 2009 and 2010. However, there were no sightings of the owls themselves during the breeding season surveys and the condition of the burrows suggests that burrowing owls had used the site as wintering habitat, earlier in the year. Although no burrowing owls nested on the site in 2009 or 2010, habitat on-site appears suitable for nesting, at least in some years. Impacts from the RSEP would be similar to other solar developments in the region, and could include loss of breeding or wintering habitat, disturbance due to human activities, and destruction of active (nesting or wintering) burrows. However, due to the low level of use, and an apparent rarity of breeding on-site, the RSEP solar generator, generator tie-line and interconnector substation's incremental contribution to cumulative impacts to burrowing owls would be minor. Implementation Conditions of Certification **BIO-19** (Burrowing Owl Impact Avoidance, Minimization, and Compensation Measures) and **BIO-16** (Desert Tortoise Compensatory Mitigation) would reduce the RSEP's contribution to cumulative impacts to a less-than-significant level.

Special-Status Passerine Birds. The RSEP would contribute incrementally to the cumulative loss of year-round habitat for several special-status birds. Loggerhead shrike was documented on the site. This and other special-status shrubland species, including Le Conte's thrasher and Crissal thrasher, may nest on-site. The RSEP's primary impacts to resident and migratory birds include habitat loss, disturbance to foraging and breeding, and risk of injury or mortality due to collision with project features or incineration at the solar field site. However, due to the low density of birds observed on-site, and the availability of similar or higher-quality habitat in the greater Rice Valley and beyond, the RSEP's incremental contribution to cumulative impacts to resident and migratory birds would be low. This contribution would be further reduced by the implementation of Conditions of Certification **BIO-1** through **BIO-10**, and **BIO-13** which requires pre-construction nest surveys and impact avoidance measures for nesting birds. Condition of Certification **BIO-25** would require an Avian and Bat Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. With implementation of these measures, the solar generator, generator tie-line and interconnector substation's incremental contribution to cumulative impacts to special-status passerine birds would be less than significant with mitigation incorporated.

Large Mammals (Nelson's Bighorn Sheep, Burro Deer, and Yuma Mountain Lion). The RSEP would contribute incrementally to the cumulative reduction in

large mammal movement opportunities among mountain ranges. Large mammal movement from the nearby Turtle Mountains, across the project area, to other mountain ranges in the area is restricted by the aqueduct, railroad, SR-62, and large containment berms just north of these features. Even though the RSEP would permanently fence a 1,368-acre area, it is unlikely to have a substantial impact on any occasional use of the Rice Valley for movement. No future projects are planned adjacent to the RSEP that would significantly impair movement, should it occur in the project area. Therefore, the RSEP's incremental contribution to cumulative impacts to large mammals would be less than significant.

American Badger and Desert Kit Fox. The RSEP would contribute incrementally to the cumulative loss and fragmentation of habitat for desert kit fox and, perhaps, badgers. These impacts are similar to impacts that would result from other past and foreseeable future developments within the California desert. However, due to the low density of kit fox and badgers on site, and the fact that no future projects are planned adjacent to the RSEP that would significantly impair movement, the RSEP's contribution to cumulative impacts to badgers and kit fox would be minor. Condition of Certification **BIO-20** requires impact avoidance and minimization measures for American badgers and desert kit fox. Condition of Certification **BIO-16**, which requires compensatory mitigation for desert tortoise habitat, would also offset project-specific impacts to these species. We therefore conclude that the RSEP's incremental contribution to cumulative impacts to American badger and desert kit fox would be less than significant.

Bats. There is no suitable roosting habitat in or adjacent to the RSEP solar generator site and generator tie-line alignment, and bats in the area likely roost in nearby mountain ranges. However, bats may forage over the project area, and may even be drawn to the area once the RSEP is operational due to the presence of the evaporation ponds. Due to the lack of roosting habitat in or near the project area, and the widespread availability of similar foraging habitat in the Rice Valley and beyond, the incremental contribution of the RSEP solar generator, generator tie-line, and interconnector substation to cumulative impacts to bats would be less than significant.

Wildlife Movement and Connectivity. As described above for Nelson's bighorn sheep, burro deer, and Yuma mountain lion, wildlife movement between the Rice Valley and the Turtle Mountains to the north is greatly restricted by the presence of the aqueduct, railroad, highway, and berms located along the southern

foothills of the mountains just north of the RSEP solar generator site. In addition to large mammals, this restriction affects all terrestrial species, including desert tortoise. Cumulative impacts of these existing facilities are significant restrictions to wildlife movement through the area. Condition of Certification **BIO-21** would serve to maximize potential wildlife movement around the proposed solar generator site. Construction and upgrades along new and existing transmission line facilities would have minimal impacts to wildlife movement. Therefore, the RSEP's incremental contribution to cumulative impacts to wildlife movement and connectivity would be less than significant.

Jurisdictional Waters of the State. The RSEP would contribute incrementally to cumulative impacts of State-jurisdictional waters in the NECO Planning Area. The most important existing alterations to State jurisdictional waters in the Rice Valley are the Colorado River Aqueduct and upstream berm system that directs flows to the aqueduct siphon points. The existing railroad and highway also affect jurisdictional waters. Jurisdictional waters in the northern part of the Rice Valley consist of dry desert washes and small, ephemeral drainages that drain from the north to the south over the aqueduct siphons and beneath the railroad line. Most of the jurisdictional waters on the RSEP site are minor ephemeral channels that originate on-site, though the project also would affect larger channels along its eastern and western margins and along the generator tie-line alignment. Further, with few exceptions, jurisdictional waters on the site do not support specialized riparian or desert wash vegetation or other special habitat values. The RSEP solar generator and generator tie-line would impact 82.8 acres of State jurisdictional waters. This loss would be offset by the implementation Condition of Certification **BIO-22**, which requires that the applicant provide compensatory mitigation at a 1:1 ratio for all impacts to State jurisdictional waters, and also requires a number of impact avoidance and minimization measures, including the elimination of the applicant's proposed stormwater detention basin. The Applicant would likely fulfill the large majority of this compensatory mitigation requirement through the conservation and management of jurisdictional drainages on the desert tortoise compensatory mitigation lands (see Condition of Certification **BIO-16**). Due to the relative lack of riparian habitat and the small, ephemeral character of most of these channels, the incremental contribution of the solar generator, generator tie-line, and interconnector substation to cumulative impacts to State jurisdictional waters would be less than significant with mitigation incorporated.

Four projects are proposed or under construction within 20 miles of the RSEP. Three of these four projects are proposed solar power developments which

would convert approximately 70,160 acres of desert lands to industrial uses. Twenty-three additional developments are proposed or under construction in eastern Riverside County, more than 20 miles from the RSEP. These projects include several solar developments, commercial and residential developments, reconstruction projects, transmission line and substation projects, a pumped storage project, an auto racetrack, a landfill, and a communication project.

The DOE and BLM have identified 24 tracts of land as Solar Energy Study Areas in the BLM and DOE Solar Energy Development Programmatic EIS (PEIS) (*in prep*). These areas have been identified for in-depth study of solar development and may be found appropriate for designation as solar energy zones in the future. Five solar trough and solar power tower projects have been proposed along the I-10 corridor approximately 15 miles east of the California-Arizona border. In addition, pending legislation proposes a 941,000-acre national monument between Joshua Tree National Park and Mojave National Preserve.

In consideration of the existing cumulative conditions in eastern Riverside County, these proposed projects have the potential to further reduce and degrade native plant and animal populations, especially sensitive species such as desert tortoise and burrowing owl. Many of the impacts to biological resources that would result from these projects could be mitigated to less than significant at the project level; however, the incremental contribution of each project could be cumulatively considerable even with mitigation. The effects of the RSEP to biological resources, combined with future foreseeable projects in the area, would be similar to the effects identified for the RSEP's contribution combined with existing projects. With the Conditions of Certification, the RSEP's contribution to cumulative impacts would be less than significant.

11. Compliance with LORS

The proposed project must comply with state and federal (LORS) that address state and federally listed species, as well as other sensitive species and habitats, and must secure the appropriate permits to satisfy these LORS. The Energy Commission has a "one-stop" permitting process for all thermal power plants rated 50 MW or more under the Warren-Alquist Act (Pub. Res. Code § 25500).

Under the Act, the Energy Commission's certificate is "in lieu of" other State, local, and regional permits (*ibid*). The Energy Commission's streamlined permitting process accomplishes a primary objective of the Renewable Energy Action Team, as identified in the Governor's Executive Order S-14-08 — to

create a “one-stop” process for permitting renewable energy generation facilities under California law. Accordingly, Energy Commission staff has coordinated joint environmental review with the California Department of Fish and Game and the Colorado River Basin Regional Water Quality Control Board, as well as the U.S. Fish and Wildlife Service. (Ex. 200, p. 6.2-150.)

Through the Conditions of Certification, we have incorporated all required terms and conditions that might otherwise be included in state permits into the Energy Commission’s certification process. The conditions described below satisfy the state LORS and take the place of terms and conditions that, but for the Commission’s exclusive authority, would have been included in the following State permits.

In addition, the Applicant has submitted an application to the BLM requesting a ROW to construct the proposed project’s generator tie-line. Pursuant to the California Desert Conservation Area (CDCA) Plan (1980, as amended), sites associated with power generation or transmission not identified in the CDCA Plan are considered through the Plan Amendment process. Under federal law, BLM is responsible for processing requests for ROWs to authorize such proposed projects and associated transmission lines and other appurtenant facilities on land it manages. The CDCA Plan, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission not identified in the Plan be considered through the Plan Amendment process. BLM would use the following Planning Criteria during the Plan Amendment process:

- The plan amendment process would be completed in compliance with the Federal Land Policy and Management Act (FLPMA), NEPA, and all other relevant Federal law, Executive orders, and management policies of the BLM;
- The plan amendment process would include an EIS (i.e., this joint SA/DEIS) to comply with NEPA standards;
- Where existing planning decisions are still valid, those decisions may remain unchanged and be incorporated into the new plan amendment;
- The plan amendment would recognize valid existing rights;
- Native American Tribal consultations would be conducted in accordance with policy, and Tribal concerns would be given due consideration. The plan amendment process would include the consideration of any impacts on Indian trust assets;
- Consultation with the State Office of Historic Preservation (SHPO) would be conducted throughout the plan amendment process; and

- Consultation with the US Fish and Wildlife Service (USFWS) would be conducted throughout the plan amendment process.

If the ROW and proposed land use plan amendment are approved by BLM, the proposed transmission facility on public lands would be authorized in accordance with Title V of the FLPMA of 1976 and the Federal Regulations at 43 CFR part 2800. This Environmental Impact Statement (EIS) acts as the mechanism for meeting NEPA requirements, and also provides the analysis required to support a Plan Amendment identifying the facility within the Plan. (Ex. 200, pp. 6.2-151.)

**Biological Resources Table 8** below summarizes the RSEP's compliance with federal, State, and local LORS and proposed conditions of certification, as established by; the evidence of record.

**Biological Resources Table 8**
**Summary of Solar Generator, Generator Tie-Line, and Interconnector Substation Compliance with LORS[1]**

| Applicable LORS | Description | Rationale for Compliance |
|---|---|---|
| **FEDERAL** | | |
| Federal Endangered Species Act (Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.) | Designates and provides for protection of threatened and endangered plant and animal species and their critical habitat. "Take" of a federally-listed species is prohibited without an incidental take permit, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. | Western is consulting with USFWS per Section 7 of the ESA reg. project impacts to desert tortoise (federally listed as threatened); a Biological Opinion is pending. Proposed Conditions of Certification BIO-1 through BIO-10 and BIO-14 through BIO-17 require measures to avoid or mitigate impacts to desert tortoise, including translocation off-site and protection of compensation habitat. These measures would ensure that the project is not likely to jeopardize the continued existence of desert tortoise. |
| Migratory Bird Treaty (Title 16, United States Code, sections 703 through 711) | Makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird) as designated in the Migratory Bird Treaty Act unless permitted by regulation (e.g., duck hunting). | Condition of Certification BIO-13 includes preconstruction nest surveys, no-disturbance buffers around active nests, and monitoring to minimize impacts to nesting migratory birds; Condition of Certification BIO-25 requires preparation and implementation of an Avian Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. |
| Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26)) | Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into waters of the US, including wetlands. Section 401 requires a permit from a regional water quality control board (RWQCB) for the discharge of pollutants. | USACE has determined that no jurisdictional Waters of the US are within the solar generator site or generator tie-line alignment. |

| Applicable LORS | Description | Rationale for Compliance |
|---|---|---|
| Bald and Golden Eagle Protection Act (Title 16, United States Code section 668) | Provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. Defines the ''take'' of an eagle to include a broad range of actions, including disturbance (i.e., to agitate or bother an eagle to a degree that causes, or is likely to cause, injury, decreased productivity by substantially interfering with behavior, or nest abandonment. | Condition of Certification BIO-16 requires protection of compensation habitat for desert tortoise, that also would serve as golden eagle foraging habitat; Condition of Certification BIO-18 requires preconstruction nest surveys and measures to prevent disturbance to nesting golden eagles; Condition of Certification BIO-25 requires documentation of compliance with the Bald and Golden Eagle Protection Act as part of the Avian Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. |
| California Desert Conservation Area Plan 1980, as amended (reprinted in 1999) | Administered by the BLM; requires that proposed projects are compatible with policies that provide for the protection, enhancement, and sustainability of fish and wildlife species, wildlife corridors, riparian and wetland habitats, and native vegetation resources. | Staff's proposed Conditions of Certification BIO-1 through BIO-26 minimize, avoid, and compensate for impacts to various biological resources covered by the CDCA Plan. |
| California Desert Protection Act of 1994 | An Act of Congress which established 69 wilderness areas, the Mojave National Preserve, expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. | Staff's proposed Conditions of Certification BIO-1 through BIO-26 minimize, avoid, and compensate for impacts to various biological resources covered by the California Desert Protection Act of 1994. |
| Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) | BLM land use plan amendment that resolves issues of resource demands, use conflicts, and environmental quality in the 5.5-million acres planning area located primarily within the Sonoran Desert in southeastern California; provides reserve management for the desert tortoise, integrated ecosystem management for special status species and natural communities for all federal lands, and regional standards and guidelines for public lands (BLM and CDFG 2002). | Staff's proposed Conditions of Certification BIO-1 through BIO-26 minimize, avoid, and compensate for impacts to various biological resources covered by the NECO. |
| **STATE** | | |
| California Endangered Species Act of 1984 (Fish and Game Code, sections 2050 through 2098) | Protects California's rare, threatened, and endangered species. "Take" of a State-listed species is prohibited without an Incidental Take Permit. | Conditions of Certification BIO-1 through BIO-10 and BIO-14 through BIO-17 would fully mitigate project impacts to desert tortoise. |
| California Code of Regulations (Title 14, sections 670.2 and 670.5) | Lists the plants and animals of California that are declared rare, threatened, or endangered. | Conditions of Certification BIO-1 through BIO-10 and BIO-14 through BIO-17 would fully mitigate project impacts to desert tortoise. |

| Applicable LORS | Description | Rationale for Compliance |
|---|---|---|
| Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515) | Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations, Title 14, section 670.7). | Golden eagle is designated as fully protected. Condition of Certification BIO-16 requires protection of compensation habitat for desert tortoise, that also would serve as golden eagle foraging habitat; Condition of Certification BIO-18 requires preconstruction nest surveys and measures to prevent disturbance to nesting golden eagles; Condition of Certification BIO-25 requires documentation of compliance with the Bald and Golden Eagle Protection Act as part of the Avian Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. |
| Nest or Eggs (Fish and Game Code section 3503) | Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. | Condition of Certification BIO-13 includes preconstruction nest surveys, no-disturbance buffers around active nests, and monitoring of nests to minimize impacts to nesting birds; Condition of Certification BIO-6 includes a Worker Environmental Awareness Program to educate workers about compliance with environmental regulations, including Fish and Game Code section 3503. |
| Birds of Prey (Fish and Game Code section 3503.5) | Birds of prey are protected in California making it "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes)." | Condition of Certification BIO-13 includes preconstruction nest surveys, no-disturbance buffers around active nests, and monitoring of nests to minimize impacts to nesting birds, including raptors; Condition of Certification BIO-6 includes a Worker Environmental Awareness Program to educate workers about compliance with environmental regulations, including Fish and Game Code section 3503.5; Condition of Certification BIO-25 requires preparation and implementation of an Avian Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. |

| Applicable LORS | Description | Rationale for Compliance |
|---|---|---|
| Migratory Birds (Fish and Game Code section 3513) | Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds. | Condition of Certification BIO-13 includes preconstruction nest surveys, no-disturbance buffers around active nests, and monitoring of nests to minimize impacts to nesting birds; Condition of Certification BIO-6 includes a Worker Environmental Awareness Program to educate workers about compliance with environmental regulations, including Fish and Game Code section 3513; Condition of Certification BIO-25 requires preparation and implementation of an Avian Protection Plan and a monitoring study to address potential bird injury or mortality, including adaptive management actions. |
| Significant Natural Areas (Fish and Game Code section 1930 et seq.) | Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat. | There are no refuges, natural sloughs, riparian areas, and vernal pools on the solar generator site or generator tie-line alignment. |
| Designated Ecological Reserves (Fish and Game Code section 1580 et seq.) | The Fish and Game commission designates land and water areas as significant wildlife habitats to be preserved in natural condition for the general public to observe and study. | There are no Designated Ecological Reserves that would be affected by the project. |
| California Environmental Quality Act (CEQA), CEQA Guidelines section 15380 | CEQA's basic purposes are to: inform agency decision makers and the public about potential significant environmental effects of proposed activities; identify measures to avoid or reduce impacts; require these mitigation measures when feasible. CEQA defines rare species more broadly than State and federal Endangered Species Acts, such that species not protected through State or federal listing but nonetheless demonstrable as "endangered" or "rare" should also receive consideration in environmental analyses. | This section of the SA/DEIS serves to inform the decision-makers and the public of the RSEP's potential impacts to biological resources, and identifies measures to avoid or reduce those impacts; implementation of Staff's proposed Conditions of Certification BIO-1 through BIO-26 would serve to mitigate the projects impacts to biological resources below a level of significance as defined in CEQA. |
| Warren Alquist Act of 2005 (Public Resources Code sections 25000 et seq.) | A CEQA-equivalent process implemented by the Energy Commission. | In compliance with the Warren Alquist Act, this section of the SA/DEIS serves to inform the Energy Commission and the public of the RSEP's potential impacts to biological resources, and identifies measures to avoid or reduce those impacts; implementation of Staff's proposed Conditions of Certification BIO-1 through BIO-26 would serve to mitigate the projects impacts to biological resources below a level of significance as defined in CEQA. |

| Applicable LORS | Description | Rationale for Compliance |
|---|---|---|
| Streambed Alteration Agreement (Fish and Game Code sections 1600 et seq.) | Regulates activities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by CDFG in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. Impacts to vegetation and wildlife resulting from disturbances to waterways are also reviewed and regulated during the permitting process. | Condition of Certification BIO-22 includes measures to minimize, avoid, and compensate for impacts to jurisdictional waters of the State. |
| California Native Plant Protection Act of 1977 (Fish and Game Code section 1900 et seq.) | Designates State rare, threatened, and endangered plants. | Staff's proposed Conditions of Certification BIO-10 through BIO-12 include restoration and compensation for impacts to native plant communities, a Weed Management Plan, special-status plant surveys, and minimization and avoidance measures to minimize impacts to special-status plants. |
| California Desert Native Plants Act of 1981 (Food and Agricultural Code section 80001 et seq. and California Fish and Game Code sections 1925-1926) | Protects non-listed California desert native plants from unlawful harvesting on both public and private lands in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Unless issued a valid permit, wood receipt, tag, and seal by the commissioner or sheriff, harvesting, transporting, selling, or possessing specific desert plants is prohibited. | The proposed project does not include provisions to harvest native desert plants. |
| **LOCAL** | | |
| Riverside County General Plan: Land Use and Multipurpose Open Space Elements of the County General Plan (County of Riverside 2003) | Contains specific policies to preserve the character and function of open space that benefits biological resources. It also contains specific policies and goals for protecting areas of sensitive plant, soils and wildlife habitat and for assuring compatibility between natural areas and development. The RSEP area and most of eastern Riverside County is designated as Open Space Conservation in the General Plan. Although the RSEP is not within one of the 19 area plans contained within the General Plan, it is addressed in the Eastern Riverside County Desert Areas (Non-Area Plan). | Implementation of staff's proposed Conditions of Certification BIO-1 through BIO-26 would ensure that the project remains in compliance with the Riverside County General Plan regarding biological resources. |

1. LORS compliance as reported here is limited only to solar generator, generator tie-line, and interconnector substation project components.

## FINDINGS OF FACT

Based on the evidence, we find the following:

1. Construction and operation of RSEP will result in the permanent loss of 1,448 acres of habitat.

2. The diverse plant communities and landscape features in and around the RSEP site support a broad diversity of wildlife, including various threatened, endangered and special-status species.
3. The project area provides forage, cover, roosting, and nesting habitat for a variety of bird species.
4. Implementation of Conditions of Certification **BIO-1** through **BIO-9**, **BIO-10**, and **BIO-11** will reduce impacts on vegetation and habitat to less than significant levels.
5. Implementation of Conditions of Certification **BIO-1** through **BIO-11**, **BIO-16**, and **BIO-12** will reduce impacts to rare and special status plants to less than significant levels.
6. Implementation of Conditions of Certification **BIO-1** through **BIO-11**, **BIO-13**, and **BIO-16** will reduce impacts to common wildlife and nesting birds to less than significant levels.
7. Implementation of Conditions of Certification **BIO-1** through **BIO-11**, **BIO-14**, **BIO-15**, **BIO-16**, and **BIO-17** will reduce impacts to desert tortoise.
8. Implementation of Condition of Certification **BIO-23** will reduce impacts to Couch's spadefoot to less than significant levels.
9. Implementation of Condition of Certification **BIO-8** will reduce impacts to Mojave Fringe-Toed lizard to less than significant levels.
10. Implementation of **BIO-19** will reduce impacts to burrowing owl to less than significant levels.
11. Implementation of Conditions of Certification **BIO-8**, **BIO-16**, **BIO-18**, and **BIO-25** will reduce impacts to Golden eagle to less than significant levels.
12. Implementation of Conditions of Certification **BIO-19** will reduce impacts to burrowing mammals to less than significant levels. And, Condition **BIO-21** will ensure that impacts to wildlife movement are reduced to less than significant levels.
13. The mitigation ratios as specified herein are appropriate for the provision of habitat compensation lands for desert tortoise and other wildlife species.
14. Compliance with the Conditions of Certification will ensure that the project's contribution to cumulative impacts will be less than significant.

## CONCLUSIONS OF LAW

1. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.

2. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification below, as well as

those in other portions of this Decision, the project will not result in significant direct, indirect, or cumulative impacts to biological resources.

3. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification, the RSEP will conform to all applicable laws, ordinances, regulations, and standards related to biological resources as identified above.

## CONDITIONS OF CERTIFICATION

**BIO-1** The project owner shall assign at least one Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval in consultation with Western, BLM, CDFG, and USFWS. USFWS <www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt> designates biologists who are approved to handle tortoises as "Authorized Biologists." Such biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, evaluate their health, and draw blood, and have received USFWS approval. Authorized Biologists are responsible for the implementation of all desert tortoise measures and are permitted, in turn, to approve specific monitors to handle tortoises, at their discretion. CDFG must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist. Designated Biologists for the Project are the equivalent of USFWS Authorized Biologists. Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist shall be allowed to handle desert tortoises.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;

3. Have at least one year of field experience with biological resources found in or near the project area;

4. Meet the current USFWS Authorized Biologist qualifications criteria (www.fws.gov/ventura/speciesinfo/protocols_guidelines),

demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS (note that biologists who meet previous criteria may not meet current criteria due to requirements to assess health and draw blood; biologists must obtain training such as that offered through the Desert Tortoise Conservation Center in Las Vegas); and

5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM in consultation with Western, BLM, CDFG and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

**Verification:** No fewer than 30 days prior to construction-related ground disturbance, the Project owner shall submit the name(s) and resume(s)of the Designated Biologists(s) along with copies of the completed USFWS Desert Tortoise Authorized Biologist Request Form(s) (www.fws.gov/ventura/speciesinfo/protocols_guidelines) to the USFWS and CPM for review and final approval in consultation with Western, BLM, and CDFG. No construction-related ground disturbance, grading, boring, or trenching shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

## DESIGNATED BIOLOGIST DUTIES

**BIO-2** The project owner shall ensure that the Designated Biologist performs the activities described below during any site mobilization activities, construction-related ground disturbance, grading, boring, or trenching activities. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the project owner, the CPM, Western, CDFG, BLM, and USFWS. The Designated Biologist Duties shall include, but shall not be limited to those listed below. Additional responsibilities of the Biological Monitor are set forth in Condition of Certification **BIO-9**.

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification;

2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner;

3. Be available to supervise, conduct, and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;

4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of each work day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;

6. Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification;

7. Respond directly to inquiries of the CPM, Western, or any other agencies regarding biological resource issues;

8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report to the CPM;

9. Consistent with **BIO-3**, train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>; and

10. Maintain the ability to be in regular, direct communication with representatives of CDFG, USFWS, BLM, Western, and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base consistent with Condition of Certification **BIO-22**.

**Verification:** The Designated Biologist shall provide copies of all written reports and summaries that document biological resources compliance activities in the Monthly Compliance Reports submitted to the CPM. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his or her

duties cease, as approved by the CPM in consultation with Western, CDFG, BLM, and USFWS.

**BIOLOGICAL MONITOR QUALIFICATIONS**

**BIO-3** The Designated Biologist shall submit the resume, at least three references, and contact information of each of the proposed Biological Monitors to the CPM. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008c).

The Designated Biologist will be responsible for training the Biological Monitor(s); training shall include familiarity with the conditions of certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>.

**Verification:** The project owner shall submit the specified information to the CPM for approval, in consultation with Western, CDFG, BLM, and USFWS at least 30 days prior to the start of any site mobilization or construction-related ground disturbance, grading, boring, and trenching. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction, the specified information shall be submitted to the CPM for approval in consultation with Western, CDFG, BLM, and USFWS at least 10 days prior to their first day of monitoring activities.

**BIOLOGICAL MONITOR DUTIES**

**BIO-4** The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of site mobilization activities, construction-related ground disturbance, grading, boring, or trenching. The Designated Biologist shall remain the contact for the project owner the CPM, Western, CDFG, BLM, and USFWS.

**Verification:** The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. If actions may affect biological resources during operation, a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting.

**DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY**

**BIO-5** The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification. The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order

any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist and Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, boring, trenching, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the construction/operation manager when to resume activities;
3. Notify the CPM if there is a halt of any activities and advise them of any corrective actions that have been taken or would be instituted as a result of the work stoppage; and
4. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

**Verification:** The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM in consultation with Western, CDFG, BLM, and USFWS as appropriate, within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

**WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)**

**BIO-6** The project owner shall prepare and implement a Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the CPM in consultation with Western, CDFG, BLM, and USFWS. The WEAP shall be administered to all onsite personnel at the solar generator site, interconnector substation site, and on the transmission line alignment~~s~~. The WEAP shall be administered to all surveyors, construction engineers, employees, contractors, contractor’s employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site preconstruction, construction, operation, and closure. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including

photographs of protected species, is made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes other reptiles, bats, or any other wildlife shall be harmed or harassed;
3. Place special emphasis on desert tortoise, burrowing owl, golden eagle, nesting birds, desert kit fox, and American badger, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;
5. Describe the temporary and permanent habitat protection measures to be implemented at the project site;
6. Identify whom to contact if there are further comments and questions about the material discussed in the program;
7. Include printed training materials, including photographs and brief descriptions of desert tortoises, burrowing owls, golden eagles, nesting birds, desert kit fox, roosting bats, and American badger, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
8. Prominently display posters and descriptions in offices, conference rooms, employee break rooms, and other areas where employees may congregate, of desert tortoises, burrowing owls, golden eagles, nesting birds, desert kit fox, roosting bats, and American badger, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
9. Direct all WEAP trainees to report all observations of listed species and their sign to the Designated Biologist for inclusion in the monthly compliance report; and
10. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

**Verification:** At least 30 days prior to start of construction-related ground disturbance the Project owner shall provide to the CPM a copy of the WEAP for review and approval in consultation with Western, CDFG, BLM, and the USFWS. The Project owner also shall submit copies of all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to construction-related ground disturbance activities the project owner shall submit two copies of the approved final WEAP.

Throughout the life of the project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction, maintenance, or operations personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CPM upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training. Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation.

During project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

**BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN**

**BIO-7** The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two copies of the proposed BRMIMP to the CPM for review and approval in consultation with Western, CDFG, BLM, and USFWS. The project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Hazardous Materials Plan; the Revegetation Plan; the Weed Management Plan; the Special-Status Plant Impact Avoidance and Minimization Plan; the Desert Tortoise Translocation Plan; the Raven Monitoring, Management, and Control Plan; the Burrowing Owl Relocation and Mitigation Plan; the Streambed Management Plan; the Evaporation Pond Design, Monitoring, and Management Plan; and the Avian and Bat Protection Plan.

The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or

permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;
3. All biological resource mitigation, monitoring, and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion and any additional Western or BLM stipulations;
4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;
5. All required mitigation measures for each sensitive biological resource;
6. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
7. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
8. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
9. All performance standards and remedial measures to be implemented if performance standards are not met;
10. Biological resources-related facility closure measures including a description of funding mechanism(s);
11. A process for proposing plan modifications to the CPM and any other appropriate agencies for review and approval; and
12. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Data Base (CNDDB) per CDFG requirements.

**Verification:** The project owner shall submit the final BRMIMP to the CPM at least 30 days prior to start of any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching. The BRMIMP shall contain all of the required measures included in all biological Conditions of Certification. No construction-related ground disturbance, grading, boring, or trenching may occur prior to approval of the final BRMIMP by the CPM in consultation with Western, CDFG, BLM, and USFWS.

If any permits have not yet been received when the BRMIMP is first submitted, copies of these permits shall be submitted to the CPM within five days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit

conditions within 10 days of their receipt by the project owner. Under no circumstances shall ground disturbance proceed without implementation of all permit conditions.

To verify that the extent of construction disturbance does not exceed that described in this analysis, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and shall be submitted at least 60 days prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction, and shall be submitted to the CPM no later than 90 days after completion of construction. The project owner shall also provide a final accounting of the acreages of vegetation communities/cover types present before and after construction and a depiction of the approved project boundaries superimposed on the post project aerial photograph. If final acreages and/or disturbance footprints exceed those previously approved, the CPM shall coordinate with project owner, in consultation with Western, CDFG, BLM, and USFWS to determine appropriate mitigation for such impacts. Such mitigation may exceed the requirements as outlined in these Conditions of Certification (i.e., higher mitigation ratios may be imposed as a result of consultation with the wildlife agencies).

Any changes to the approved BRMIMP (including the project footprint) must be approved by the CPM in consultation with Western, BLM, CDFG, and USFWS before such action is taken.

Implementation of BRMIMP measures (for example, construction activities that were monitored, species observed) shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval in consultation with Western, CDFG, BLM, and USFWS, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and which mitigation and monitoring items are still outstanding as well as a timeline for implementing outstanding items.

## IMPACT AVOIDANCE AND MINIMIZATION MEASURES

**BIO-8** The project owner shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to biological resources. All measures shall be subject to review and approval by the CPM.

1. Limit Disturbance Areas and Perimeter Fencing. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled

in areas already disturbed or to be disturbed by construction, so that stockpile sites do not add to total disturbance footprint. All disturbances, project vehicles, and equipment shall be confined to the flagged areas. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat.

2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

3. Minimize Traffic Impacts. Vehicular traffic during project construction and operation shall be confined to existing designated routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 20 miles per hour within any part of the project area, maintenance roads for linear facilities, or unpaved access roads to the project site where desert tortoise clearance surveys and translocations have not been completed.

4. Monitor During Construction. Due to the possibility that desert tortoises, especially juveniles, may persist on the site after desert tortoise clearance surveys and exclusion fencing are completed, the Designated Biologist or Biological Monitor shall be present at the construction site during all project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities. Any time over the life of the project that a desert tortoise is found within the exclusion fencing, the Designated Biologist shall immediately contact the CPM, CDFG, and USFWS; monitor the tortoise's location and activities; and implement translocation of the animal in accordance with and the approved Desert Tortoise Translocation Plan and in consultation with the USFWS, CDFG, and CPM.

5. Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas. Staging areas for construction on the solar generator site shall be within the area that has been fenced with desert tortoise exclusion fencing and cleared. For transmission line construction or other activities outside of the solar generator site, access roads, pulling sites and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological

resources. The Designated Biologist or Biological Monitor shall evaluate potential for special status plants or wildlife at every potential disturbance site along the lengths of both transmission lines prior to any construction-related disturbance, include access improvements. Specifically, site selection of any area to be permanently or temporarily disturbed for transmission line construction and fiber-optic installation shall avoid any desert wash, desert microphyll woodland, or any aeolian sand habitat wherever feasible. Where these sites cannot feasibly be avoided, the Designated Biologist shall outline site-specific requirements to minimize impacts to habitat and wildlife. These requirements shall include, but would not be limited to, pre-construction clearance surveys, exclusion fencing (e.g., for desert tortoise or Mojave fringe-toed lizard), on-site monitoring, and post-construction remediation.

6. Implement APLIC Guidelines.Transmission lines, fiber optic lines, and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) S*uggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Mitigating Bird Collisions with Power Lines* (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions.

7. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.

8. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat. To minimize risk of avian collisions with project features, only flashing or strobe lights shall be installed on features requiring safety lighting per FAA requirements.

9. Minimize Noise Impacts. A continuous low-pressure technique shall be used for steam blows, to the extent possible, in order to reduce noise levels in sensitive habitat proximate to the Project area. Loud construction activities (e.g., unsilenced high pressure steam blowing and pile driving, or other) shall be avoided from February 15 to April 15 when it would result in noise levels over 65 dBA in nesting habitat. Loud construction activities may be permitted from February 15 to April 15 only if the Designated Biologist provides documentation (i.e., nesting bird data collected using methods described in **BIO-13** and maps depicting location of the nest survey area in relation to noisy construction) to the CPM indicating that no active nests would be subject to 65 dBA noise.

10. Avoid Vehicle Impacts to Desert Tortoise. Parking and storage shall occur only within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction

equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it shall be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may remove and relocate the animal to a safe location if temperatures are within the range described in the USFWS' 2009 *Desert Tortoise Field Manual* (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines). All access roads outside of the fenced project footprint shall be delineated with temporary desert tortoise exclusion fencing on either side of the access road, unless otherwise authorized by the CPM, in consultation with Western, BLM, USFWS, and CDFG.

11. Avoid Wildlife Pitfalls:

    a. Backfill Trenches. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, temporary detention basins, and other excavations) have been backfilled. If backfilling is not feasible, all trenches, bores, temporary detention basins, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, temporary detention basins, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically, but no less than three times, throughout the day and at the end of each workday by the Designated Biologist or a Biological Monitor. Should a desert tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and, if applicable, relocate it as described in the Desert Tortoise Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

    b. Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground for one or more nights, shall be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks.

12. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction

sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and shall take appropriate action to reduce water application where necessary.

13. Dispose of Road-killed Animals. Road-killed animals or other carcasses detected on roads near the project area shall be picked up immediately and delivered to the Designated Biologist or Biological Monitor. For all road-killed species, the Designated Biologist shall retain the carcass in a freezer on-site and contact CDFG within 30 working days for guidance on disposal or storage. For any road-killed special-status species, the Biological Monitor shall contact CDFG and USFWS (for golden eagle or federally-listed species, including desert tortoise) within one working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall report the special-status species record as described in Conditions of Certification **BIO-2, BIO-7,** and **BIO-22**.

14. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

15. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife or bring pets to the project site, including the logistics, parking, and other ancillary areas. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on dirt access routes within desert tortoise habitat shall not exceed 20 miles per hour.

16. Implement Erosion Control Measures. Standard erosion control measures shall be implemented for all phases of construction and operation to prevent any sediment run-off from exposed slopes from entering state-jurisdictional streambeds within or outside the Project Disturbance Area. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within

the project site shall be stabilized to reduce erosion potential, both during and following construction, except that soil stabilizer use may be limited in portions of roads crossing washes or stream channels consistent with applicable water quality requirements.

17. Monitor Ground-Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.

18. Remove Unused Material and Equipment. All unused material and equipment, including soil and rock piles, will be removed upon completion of any maintenance activities located outside the permanently fenced area.

19. Control and Regulate Fugitive Dust. To reduce the potential for the transmission of fugitive dust, the project owner shall implement dust control measures as described in staff's recommended Conditions of Certification **AQ-SC4, AQ-SC5**, and **AQ-SC7** in the Air Quality section of this Staff Assessment.

**Verification:** All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed. If loud construction activities are planned between February 15 to April 15, no more than 10 days before initiation of such construction the Project owner shall provide documentation to the CPM indicating that no active nests occur in areas that would be subject to noise 65 dBA or greater.

**COMPLIANCE VERIFICATION**

**BIO-9** The project owner shall provide the CPM, Western, BLM, CDFG, and USFWS with reasonable access to the project site and mitigation lands under the control of the project owner and shall otherwise fully cooperate with the Energy Commission's, Western's, BLM's, CDFG's, and USFWS's efforts to verify the project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The project owner shall hold harmless the Designated Biologist, Biological Monitor, the Energy Commission and staff, Western, BLM, CDFG, USFWS, and any other agencies with regulatory requirements addressed by the Energy Commission's sole permitting authority for any costs the project owner incurs in complying with the management measures, including stop work orders issued by the CPM, the Designated Biologist, or Biological Monitor. In addition to the

duties described in **BIO-2**, the Designated Biologist shall do all of the following:

1. Notification. Notify the CPM, Western, BLM, CDFG, and USFWS at least 14 calendar days before initiating ground-disturbing activities. Immediately notify the CPM, Western, BLM, CDFG, and USFWS in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification. CDFG shall be notified at their Southern Region Headquarters Office, 4949 Viewridge Avenue, San Diego, CA 92123; (858) 467-4201. USFWS shall be notified at the Carlsbad Fish and Wildlife Office, 6010 Hidden Valley Rd., 101, Carlsbad, CA 92011; (760) 431-9440.

2. Monitoring During Grading. Remain on site daily while grubbing and grading are taking place to avoid or minimize take of listed or special-status species, to check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protected zones.

3. Fence Monitoring. During construction, maintain and check desert tortoise exclusion fences on a daily basis to ensure the integrity of the fence is maintained. The Designated Biologist shall be present on site to monitor construction and determine fence placement during fence installation. During operation of the project, fence inspections shall occur at least once per month throughout the life of the project, and more frequently after storms or other events that might affect the integrity and function of desert tortoise exclusion fences. Fence repairs shall occur within two days (48 hours) of detecting problems that affect the functioning of the desert tortoise exclusion fencing. All wildlife found entrapped or dead in the fence shall be reported to the CPM, BLM, CDFG, and USFWS. Carcasses of animals entrapped in the fence shall be handled as described above in **BIO-8** paragraph 14; the Designated Biologist shall retain the carcass in a freezer on-site and contact CDFG within 30 working days for guidance on disposal or storage. For special-status species, the Biological Monitor shall contact CDFG or (for federally-listed species, including desert tortoise) within one working day.

4. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to the CPM. The monthly compliance report shall include all reported observations of listed species made by WEAP trainees on the site pursuant to Condition of Certification **BIO-6**.

5. Annual Listed Species Status Report. No later than January 31 of every year the project facility remains in operation, the Designated Biologist shall provide the CPM, BLM, CDFG, and USFWS an annual Listed Species Status Report, which shall include, at a minimum: 1) a general description of the status of the project site and construction/operation activities, including actual or projected completion dates, if known; 2) a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure; 3) an assessment of the effectiveness of each completed or partially completed mitigation measure in minimizing and compensating for project impacts, 4) recommendations on how effectiveness of mitigation measures might be improved, and 5) a summary of any agency approved modifications to the BRMIMP.

6. Final Listed Species Mitigation Report. No later than 45 days after initiation of project operation, provide the CPM a Final Listed Species Mitigation Report that shall include, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about project-related incidental take of listed species; 3) information about other project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the project.

7. Notification of Injured, Dead, or Relocated Listed Species. In the event of a sighting in an active construction area (e.g., with equipment, vehicles, or workers), injury, kill, or relocation of any listed species, the CPM, BLM, CDFG, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:

   a. Injured Desert Tortoise. If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist shall immediately take it to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the project owner. Following phone notification as required above, the CPM, BLM, CDFG, and USFWS shall determine the final disposition of the

injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.

b. Desert Tortoise Fatality. If a desert tortoise is killed by project-related activities during construction or operation, or if a desert tortoise is otherwise found dead, submit a written report with the same information as an injury report. These desert tortoises shall be salvaged according to guidelines described in Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise (Berry 2001). The project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

8. Stop Work Order. The CPM may issue the project owner a written stop work order to suspend any activity related to the construction or operation of the project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The project owner shall comply with the stop work order immediately upon receipt thereof.

**Verification:** No later than two calendar days following the above-required notification of a sighting, kill, injury, or relocation of a listed species, the project owner shall deliver to the CPM, BLM, CDFG, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of the sighting, injury, kill, or relocation of a listed species, identifying who was notified and explaining when the incidents occurred. In the case of a sighting in an active construction area, the project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, BLM, CDFG, and USFWS.

No later than January 31st of every year the RSEP facility remains in operation, provide the CPM, BLM, CDFG, and USFWS an annual Listed Species Status Report as described above, and a summary of desert tortoise exclusion fence inspections and repairs conducted in the course of the year. No later than 45 days after initiation of project operation, provide the CPM a Final Listed Species Mitigation Report as described above.

## REVEGETATION PLAN AND COMPENSATION FOR IMPACTS TO NATIVE VEGETATION COMMUNITIES

**BIO-10** The project owner shall provide restoration/compensation for impacts to native vegetation communities and develop and implement a Revegetation Plan for all areas subject to temporary (albeit long-term) project disturbance, including but not limited to linear features and berms of detention or debris basins, to the extent permitted by

stormwater control requirements (see above, **Construction Impacts to Vegetation**). Upon completion of construction, all temporarily disturbed areas, including the logistics/lay down areas; all generator tie-line tower sites, pull sites, and similar areas shall be restored to pre-project grade and revegetated to minimize soil erosion and vulnerability to weed invasion. Other temporarily disturbed areas within the project area shall include, but shall not be limited to: all areas where underground infrastructure was installed, temporary access roads, construction work temporary lay-down areas, and construction equipment staging areas. The following measures shall be implemented for the revegetation effort areas not subject to the facility Landscape Plan. These measures will include:

1. Plan Details. The revegetation plan shall include at minimum: (a) locations and details for top soil storage; (b) methods to salvage and replant cacti, yucca, or other species described in **BIO-12**, or to plant out nursery stock of these species onto revegetation sites; (c) seed collection guidelines; (d) a schematic depicting the mitigation area; (e) time of year that the planting will occur and the methodology of the planting; (f) a description of the irrigation methodology if used; (g) measures to control exotic vegetation on site; (h) success criteria relating to soil condtions and weed abundance; and (i) a detailed monitoring program. All habitats dominated by non-native species prior to project disturbance shall be revegetated using appropriate native species. This plan shall also contain contingency measures for failed restoration efforts (efforts not meeting success criteria).

2. Topsoil Salvage. Topsoil shall be stockpiled from the project site for use in revegetation of the disturbed soils. The topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. The upper 1 inch of topsoil which contains the seed bank shall be scraped and stockpiled for use as the top-dressing for the revegetation area. An additional 6 to 8 inches of soil below the top 1 inch of soil shall also be scraped and separately stockpiled for use in revegetation areas. Topsoil shall be replaced in its original vertical orientation following ground disturbance, ensuring the integrity of the top one inch in particular. All other elements of soil stockpiling shall be conducted as described on pages 39-40 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen 2003).

3. Seed and Nursery Stock. Only seed or potted nursery stock of locally occurring native species shall be used for revegetation. Seeds shall contain a mix of short-lived early pioneer species such as native annuals and perennials and subshrubs. Seeding and planting shall be conducted as described in Chapter 5 of *Rehabilitation of Disturbed Lands in California* (Newton and

Claassen 2003). A list of plant species suitable for Colorado Desert region revegetation projects, including recommended seed treatments, are included in Appendix A-9 of the same report. The list of plants observed during the special-status plant surveys of the project area can also be used as a guide to site-specific plant selection for revegetation. In conformance with BLM policy, the project owner shall include salvaged or nursery stock yucca (all species), and cacti (excluding cholla species, genus *Cylindropuntia*), in revegetation plans and implementation affecting BLM lands, as described in **BIO-12**.

4. Monitoring Requirement and Success Criteria. Post-seeding and planting monitoring will be yearly and shall continue for a period of no less than two years or until the defined success criteria are achieved. If the criteria have not been met, the project owner is responsible for replacement planting to achieve these requirements or other remedial action as agreed to by the CPM in consultation with BLM and Western. Replacement seeding or planting shall be monitored and evaluated by the same criteria as required for original revegetation plantings. Remediation activities (e.g., additional planting, removal of non-native invasive species, or erosion control) shall be taken during the two year period if necessary to ensure the success of the restoration effort. If the mitigation fails to meet the established performance criteria after the the two year maintenance and monitoring period, monitoring and remedial activities shall extend beyond the the two year period until the criteria are met or unless otherwise specified by the CPM in consultation with BLM and Western. The following performance standards must be met by the end of monitoring year two:

   - At least 80% of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and
   - Cover and density of non-native plant species within the temporarily disturbed areas shall be no greater than in comparable surrounding lands that have not been disturbed by the project.

5. Replacement. If a fire occurs in a revegetation area within the the two year monitoring period, the owner shall be responsible for a one-time replacement. If a second fire occurs, no replanting is required, unless the fire is caused by the owner's activity (e.g., as determined by BLM or other firefighting agency investigation).

**Verification:** All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented.

Within 90 days after completion of each year of project construction, the project owner shall provide to the CPM verification of the total vegetation acreage

subject to temporary and permanent disturbance and a written report identifying which items of the Revegetation Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding. To monitor and evaluate the success of the revegetation, the project owner shall submit annual reports of the revegetation including the status of the site, percent cover of native and exotics, and any remedial actions conducted by the owner to the CPM and BLM.

On January 31st of each year following construction until the completion of the revegetation monitoring specified in the Revegetation Plan, the Designated Biologist shall provide a report to the CPM that includes: a summary of revegetation activities for the year, a discussion of whether revegetation performance standards for the year were met, and recommendations for revegetation remedial action, if warranted, that are planned for the upcoming year.

**WEED MANAGEMENT PLAN**

**BIO-11** The project owner shall prepare and implement a Weed Management Plan that meets the approval of the CPM, in consultation with Western, BLM, CDFG, and USFWS. At minimum, the Weed Management Plan shall include the following:

1. An assessment of nonnative and invasive weeds occurring onsite prior to construction activities;
2. An assessment of nonnative and invasive weeds that could be introduced into the project area;
3. A description of methods to be used to survey for the presence of introduced weeds during construction and operation;
4. Monitoring and weed control methods to be employed during operation;
5. Specific and detailed guidelines for herbicide use to prevent overspray onto surrounding areas where it would adversely affect wildlife or native plants; and
6. Reporting requirements.

The final plan shall only include weed control measures for target weeds with a demonstrated record of success, based on the best available information from sources such as: The Nature Conservancy's The Global Invasive Species Team, Cooperative Extension, California Invasive Plant Council:

<http://www.cal-ipc.org/ip/management/plant_profiles/index.php>,

and the California Department of Food & Agriculture Encycloweedia: <http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_hp.htm>. The methods shall meet the following criteria:

Manual: well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.

Chemical: Herbicides known to have residual toxicity, such as pre-emergents and pelts, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack & squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations

In addition to describing weed eradication and control methods, and a reporting plan for weed management during and after construction, the final Weed Management Plan shall include at minimum the following Best Management Practices to prevent the spread and propagation of weeds:

- Limit the extent of any vegetation and/or ground disturbance to the absolute minimum needed, and limit ingress and egress to defined routes.
- Install and maintain vehicle wash and inspection stations and closely monitor the types of materials brought onto the site.
- Reestablish vegetation on disturbed sites with native seed mixes (measures and performance standards to be consistent with Revegetation Plan, described in Condition of Certification **BIO-10**).
- Monitoring and timely implementation of control measures to ensure early detection and eradication for weed invasions. Weed infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, to prevent further expansion.
- Use only weed-free straw or hay bales used for sediment barrier installations, and weed-free seed.
- Reclamation and revegetation shall occur on all temporarily disturbed areas, including, but not limited to, temporary access roads, construction work temporary lay-down areas, and staging areas.
- Control weeds in areas where irrigation and mirror washing take place.
- Prohibit on-site storage or disposal of mulch or green waste from weed material to prevent inadvertent introduction and spread of invasive plants beyond the immediate vicinity of the project area and possibly into rare plant populations off-site. Mulch or green waste shall be removed from the site in a covered vehicle to

prevent seed dispersal, and transported to a licensed landfill or composting facility.

- Indicate where herbicides may be used, which herbicides, and specify techniques to be used to avoid chemical drift or residual toxicity to special-status plants, consistent with guidelines provided by the Nature Conservancy's The Global Invasive Species Team <http://www.invasive.org/gist/products.html>
- Avoid herbicide use or other control methods in or around Environmentally Sensitive Areas (ESAs, see Condition of Certification **BIO-12**) on-site or off-site; prevent any herbicide drift into ESAs.

Nonnative and invasive weed infestations will be flagged by the Designated Biologist or Biological Monitor and controlled, using either mechanical (hand pulling, mowing) or chemical methods as approved by the CPM and, as appropriate, Western or BLM. Only state and BLM-approved herbicides will be used, and all herbicide applicators will possess a qualified herbicide applicator license from the state. All herbicide applications will follow U.S. Environmental Protection Agency label instructions and be performed in accordance with federal, state, and local laws and regulations.

From the time construction begins and throughout the life of the project, surveying for new invasive weed populations and the monitoring of identified and treated populations shall be required within the project area. Surveying and monitoring for weed infestations shall occur at least two times per year (timed to occur early and late in the growing season). Treatment of all identified weed populations shall occur at a minimum of once annually. When no new seedlings or resprouts are observed at treated sites for three consecutive, normal rainfall years, the weed population can be considered eradicated and weed control efforts may cease for that impact site.

**Verification:** At least 30 days prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM and BLM with the final version of the Weed Management Plan. All modifications to the approved Weed Management Plan shall be made only after consultation with the CPM in consultation with Western, BLM, USFWS, and CDFG. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding. A summary report on weed management on the project site shall be submitted in the Annual Compliance Report during facility operations

**SPECIAL-STATUS PLANT IMPACT AVOIDANCE, MINIMIZATION AND COMPENSATORY MITIGATION**

**BIO-12** This Condition contains the following five sections:

- **Section A: Avoidance and Minimization Measures** describes measures to avoid and protect Harwood's milk-vetch locations on the generator tie-line alignment within 250 feet of project activities (including access roads, staging areas, laydown areas, parking and storage areas) from accidental and indirect impacts during construction, operation, and closure.
- **Section B: Conformance with BLM Plant Protection Policies** describes measures to salvage and transplant certain cacti, yucca, and other species in conformance with BLM policies.

"Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the solar generator site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation. Nothing in this condition requires the project owner to conduct botanical surveys on private lands adjacent to the project site when the project owner has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission

The Project owner shall implement the following measures in Section A and B to avoid, minimize, and compensate for impacts to special-status plant species:

**Section A: Special Status Plant Impact Avoidance and Minimization Measures**

To protect Harwood's milk-vetch or other CNPS List 1 or List 2 plants (excluding chaparral sand-verbena) located within the project area or within 250 feet of its boundaries (including access roads, staging areas, laydown areas, parking and storage areas) from accidental and indirect impacts during construction, operation, and closure, the Project owner shall implement the following measures:

1. Designated Botanist. An experienced botanist shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction, operation, and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. The Designated Botanist shall be a qualified botanist knowledgeable in the complex biology of the local flora and consistent with CDFG (2009) and BLM (2009b) protocols.

2. Special Status Plant Impact Avoidance and Minimization Plan. The Project owner shall prepare and implement a Special Status Plant Impact Avoidance and Minimization Plan and shall incorporate the Plan into the BRMIMP (**BIO-7**). The Plan shall be designed to prevent direct or indirect effects of project construction and operation to CNPS List 1 and List 2 plants (excluding chaparral sand-verbena) within or within 250 feet of the project disturbance area. The Plan shall include the following elements:

   a. Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the Project linears, as follows: limit the width of the work area; adjust the location of staging areas, lay downs, spur roads and poles or towers; drive and crush vegetation as an alternative to blading temporary roads to preserve soil integrity and seed banks, and adjust the alignments of roads and access points within the constraints of the ROW. These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.

   b. Designate Environmentally Sensitive Areas (ESAs). Before construction, designate ESAs to protect all known CNPS List 1 or List 2 plant locations (excluding chaparral sand-verbena) within the project disturbance area or within 250 feet of disturbance area. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall provide a minimum of 250 feet buffer area between plant locations and any ground-disturbing project activity. The ESAs shall be clearly delineated in the field with fencing and signs prohibiting movement of the fence under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be marked (with signage or other markers) to ensure that avoided plants are not inadvertently harmed during construction.

   c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP **(BIO-6)** shall include training components specific to protection of special-status plants as outlined in this condition.

   d. Herbicide and Soil Stabilizer Drift Control Measures. **S**pecial-status plant occurrences within 250 feet of the Project Disturbance Area shall be protected from any potential herbicide and soil stabilizer drift. The Weed Control Program (**BIO-11**) shall include measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by Hillmer and Liedtke (2003) and Kegley et al. (2010).

e. Erosion and Sediment Control Measures. Erosion and sediment control measures shall avoid adverse impacts to ESAs and shall not use invasive or non-native plants in seed mixes, introduce pest plants through contaminated seed or straw, etc. These measures shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL&WATER-1**.

f. Avoid Special-Status Plant Occurrences. Areas for spoils, equipment, vehicles, and materials storage areas; parking; equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from the boundaries of any ESAs.

g. Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities.

**Section B: Conformance with BLM Plant Protection Policies**

It is BLM policy to salvage yucca and cactus plants (excluding cholla species, genus *Cylindropuntia*) and transplant them to undisturbed sites within project Rights of Way. Staff recommends conformance with policy, as follows:

a. The project owner shall inventory all plants subject to BLM policies on all NLM lands within the Project Disturbance Area that would be removed or damaged by proposed project construction.

b. The project owner shall prepare a Protected Plant Salvage Plan in conformance with BLM standards for review and approval by the CPM in consultation with BLM. The plan shall include detailed descriptions of proposed methods to salvage plants; transport them; store them temporarily (as needed); maintain them in temporary storage (i.e., irrigation, shade protection, etc.); proposed transplantation locations and methods for permanent relocation; proposed irrigation and maintenance methods at transplantation sites; and a monitoring plan to verify survivorship and establishment of translocated plants for a minimum of five years.

c. Prior to initiating any ground-disturbing activities on the project site, the project owner shall implement the Protected Plant Replacement measures as approved by the CPM, in consultation with BLM's State Botanist.

The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification **BIO-7**.

**Verification:** Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval

in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.

The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends, and description of the remedial action, if warranted and planned for the upcoming year.

**Section A**. No less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit grading plans and construction drawings depicting the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition. The project owner shall coordinate with the CPM and BLM's Wildlife Biologist to revise and finalize boundaries of the ESAs.

No less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit to the CPM for review and approval, in consultation with the BLM State Botanist, the name and resume of the project's Designated Botanist. If a Designated Botanist needs to be replaced, the specified information of the proposed replacement must be submitted to BLM's Wildlife Biologist and the CPM as soon as possible prior to the termination or release of the Designated Biologist. In an emergency, the project owner shall immediately notify the BLM's Wildlife Biologist and the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Botanist is proposed to BLM's Wildlife Biologist and the CPM and for consideration.

No less than 30 days prior to ground-disturbing activities the Project owner shall submit a Special Status Plant Impact Avoidance and Minimization Plan to the CPM for review and approval, in consultation with the BLM State Botanist. Implementation of the impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.

The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all ESAs to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends, and description of the remedial action, if warranted and planned for the upcoming year. The project owner shall coordinate with the CPM and BLM to revise and finalize monitoring reports and all reports described in this section, and shall specifically report any difficulties in

meeting the protection goals and cooperatively develop adaptive measures as needed.

**Section B**. The project owner shall coordinate with the CPM and BLM's Wildlife Biologist to revise and finalize all plans and reports named in this section. Verification and reporting shall be as described in **BIO-10** and shall be included in reports described therein. Within 90 days after completion of each year of project construction, the project owner shall provide to the CPM verification of the numbers or acreage of plants covered in this Condition (i.e., species named in BLM and County policies) which have been removed or salvaged over the course of the year. Annual revegetation reports described in **BIO-10** verification shall include summaries of salvage and planting operations and monitoring results. Compliance reports shall include summaries of written and photographic records of the plan implementation described above. Compliance reports shall be submitted annually for a period not less than 5 years to document irrigation, maintenance, and monitoring results, including plant survival.

**PRE-CONSTRUCTION NEST SURVEYS AND IMPACT AVOIDANCE MEASURES FOR MIGRATORY BIRDS**

**BIO-13** Pre-construction nest surveys for bird species other than burrowing owls shall be conducted if construction activities will occur during the breeding period (from February 1 through August 31). Burrowing owl surveys are addressed in **BIO-19**. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Surveys shall be conducted in accordance with the following guidelines. Nothing in this condition requires the project owner to conduct nesting bird surveys by entering private lands adjacent to the project site when the project owner has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission. In this situation only, the project owner may substitute binocular surveys for protocol field surveys.

1. Surveys shall cover all potential nesting habitat in the project site and within 500 feet of the boundaries of the plant site and linear facilities;
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within the 10 days preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed one week in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests are detected during the survey, a 500-foot no-disturbance buffer zone shall be implemented. If active raptor nests or bat maternity roosts are detected during the survey, a 1200-foot

no-disturbance buffer zone shall be implemented. A monitoring plan shall be prepared and implemented to ensure no disturbance takes place within the buffer areas. This protected area surrounding the nest may be adjusted by the Designated Biologist in consultation with CDFG, USFWS, Western, and the CPM. Nest locations shall be mapped using GPS technology and submitted, along with a weekly report stating the survey results, to the CPM; and

4. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed. Activities that might, in the opinion of the Designated Biologist and in consultation with the CPM, disturb nesting activities shall be prohibited within the buffer zone until such a determination is made.

**Verification:** Prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor(s); and a list of species observed. If active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest(s) and shall depict the boundaries of the no-disturbance buffer zone around the nest(s).

**DESERT TORTOISE CLEARANCE SURVEYS AND EXCLUSION FENCING**

**BIO-14** The project owner shall undertake appropriate measures to manage the construction site(s) and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the USFWS' 2009 *Desert Tortoise Field Manual* <http://www.fws.gov/ventura/speciesinfo/protocols_guidelines> or more current guidance provided by CDFG and USFWS. The project owner shall also implement all terms and conditions described in the Biological Opinion for the project to be prepared by USFWS. These measures include, but are not limited to, the following:

1. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, permanent desert tortoise exclusion fencing shall be installed at the solar generator site along the permanent perimeter security fence and permanent access road from the security gate southward. Temporary exclusion fencing shall be installed along any additional construction site associated with the project, including the 26-acre construction laydown areas, stormwater diversion channels, and proposed generator tie-line alignment work sites. Permanent desert tortoise exclusion fencing shall also be installed at the interconnector substation site prior to construction activities at that site. The only exception to the requirement for exclusion fencing shall be for temporary construction sites where a qualified desert tortoise monitor is on-

site throughout all construction activities (e.g., transmission line construction sites). The proposed alignments for all desert tortoise exclusion fencing shall be flagged and surveyed for desert tortoise within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) using techniques approved by the USFWS and CDFG and may be conducted in any season with USFWS and CDFG approval. Biological Monitors may assist the Designated Biologist under his or her supervision with the approval of the CPM, USFWS, and CDFG. These fence clearance surveys shall provide 100 percent coverage of all areas to be disturbed and an additional buffer approximately 90 feet wide centered on the fence alignment (i.e., 45 feet along each side of the fence line). Survey transects shall be no greater than 15 feet apart. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*. Any desert tortoise located during fence clearance surveys shall be handled only by the Designated Biologist(s) in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*.

a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. During construction, temporary tortoise exclusion fencing shall also be placed on access roads in tortoise habitat unless otherwise approved by the CPM, Western, BLM, USFWS, and CDFG. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.

b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS' 2009 *Desert Tortoise Field Manual* (Chapter 8 – Desert Tortoise Exclusion Fence).

c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. Cattle grating designed to safely exclude desert tortoise may be installed at the gated entries to discourage tortoises from gaining entry, to be determined by the CPM in consultation with CDFG and USFWS.

d. Fence Inspections. Following installation of all desert tortoise exclusion fencing (i.e., both permanent and temporary fencing), the fencing shall be regularly inspected. If tortoises were moved

out of harm's way during fence construction, permanent and temporary fencing in that area shall be inspected at least two times a day for a minimum of 7 days after moving the animal to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during and within 24 hours following all major rains. Major rains are defined as a storm(s) for which surface flow is detectable within the fenced drainages. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises from entering the site, and permanently repaired within 48 hours of observing damage. Monthly and post-rainfall inspections of permanent site fencing shall continue throughout the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rains. All temporary fencing shall be repaired immediately upon discovery and the Designated Biologist shall inspect the area to determine whether the damage may have permitted tortoise entry.

2. Desert Tortoise Clearance Surveys within the Plant Site. Following construction of the tortoise exclusion fencing, the solar field and adjacent fenced areas (including permanent and temporarily fenced areas) shall be cleared of tortoises by the Designated Biologist, who may be assisted by the Biological Monitors. Clearance surveys shall be conducted in accordance with the USFWS 2009 *Desert Tortoise Field Manual* (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of at least two surveys covering 100 percent of the project area by walking transects no more than 15 feet apart. Surveys shall be repeated until two consecutive 100%-coverage surveys are completed without finding live tortoises. Transect routes on each separate survey shall be walked in different directions to allow opposing angles of observation. Clearance surveys of the power plant site may only be conducted when tortoises are most active (April through May or September through October). Surveys outside of these time periods require approval by USFWS and CDFG. Any tortoise located during clearance surveys of the solar field site or construction areas along the transmission line route shall be relocated and monitored in accordance with the Desert Tortoise Translocation Plan (Condition of Certification **BIO-15**).

   a. Burrow Searches. During clearance surveys all desert tortoise burrows, and any burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*. To prevent reentry by a tortoise or

other wildlife, all burrows shall be collapsed once absence has been determined. Tortoises taken from burrows and from elsewhere on the solar field site or construction areas along the transmission line route shall be translocated as described in the Desert Tortoise Translocation Plan.

b. Burrow Excavation/Handling. All potential desert tortoise burrows located during clearance surveys shall be excavated by hand, tortoises removed, and burrows collapsed or blocked to prevent occupation by desert tortoises. All desert tortoise handling and removal, and burrow excavations, including nests, shall be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the USFWS' 2009 *Desert Tortoise Field Manual.*

3. Monitoring Following Clearing. Following the desert tortoise clearance and removal from the power plant site and utility corridor, workers and heavy equipment shall be allowed to enter the project site to perform clearing, grubbing, leveling, and trenching. A Designated Biologist shall monitor clearing and grading activities to find and move any tortoises which may have been missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be translocated as described in the Desert Tortoise Translocation Plan to an area approved by the Designated Biologist.

4. Relocation of Other Special-Status Species. Any special-status mammal or reptile species incidentally encountered during desert tortoise clearance surveys or monitoring (2 and 3, above), excluding American badger or desert kit fox, shall be captured and relocated to a safe, suitable area beyond the construction impact zone. If American badger or desert kit fox are encountered during the clearance surveys, they will be avoided and allowed to escape from the site as described below (Condition of Certification **BIO-20**). Any captured animal shall be maintained in a shaded, sheltered, cool (<85 degrees F) environment until relocation. If capture is not safe or feasible (e.g., for a badger) appropriate measures will be taken to encourage the animal to leave the site (including temporary exclusion fence removal, if monitored closely, per incident-specific direction from the CPM and cooperating agencies). The Designated Biologist shall coordinate with staff and CDFG biologists in the transport and relocation of any special-status animals encountered during project surveys, construction, or operation. A written report documenting any animals relocated shall be provided to the CPM within 30 days of relocation.

5. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition

and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert tortoise. Desert tortoises moved from within project areas shall be monitored in accordance with the Desert Tortoise Translocation Plan.

**Verification:** All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented by the project owner. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to the CPM, Western, BLM, USFWS, and CDFG describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises or other animals, and any other information needed to demonstrate compliance with the measures described above.

**DESERT TORTOISE TRANSLOCATION PLAN**

**BIO-15** The project owner shall prepare and implement a final Desert Tortoise Translocation Plan (Plan) in conformance with standards and guidelines described in *Translocation of Desert Tortoises (Mojave Population) From Project Sites: Plan Development Guidance* (USFWS August 2010), any more current guidance or recommendations as available from CDFG or USFWS, and meets the approval of the CPM in consultation with Western, BLM, USFWS, and CDFG. The goal of the Plan shall be to safely exclude desert tortoises from within the fenced project area and translocate them to suitable habitat capable of supporting them, while minimizing stress and potential for disease transmission. The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the applicant and shall include all revisions deemed necessary by USFWS, CDFG, and the CPM, in consultation with Western and BLM. The Plan shall include but not be limited to, a list of the authorized handlers, protocols for disease testing and assessing tortoise health, proposed translocation locations and procedures, schedule of translocations, a habitat assessment of translocation lands, monitoring of translocated tortoise(s), reporting, and contingency planning (e.g., handling an injured or diseased tortoise).

**Verification:** Within 30 days of publication of the Energy Commission License Decision the project owner shall provide the CPM with the final version of a Desert Tortoise Translocation Plan that is consistent with all terms and conditions of the Biological Opinion and Incidental Take Permits, both yet to be issued. The Plan shall not be accepted as “final” until it has been reviewed and approved by the CPM, USFWS, and CDFG in consultation with Western and BLM. Any

modifications to the approved final Plan shall be made only with written approval by the CPM, USFWS, and CDFG in consultation with Western and BLM.

Within 30 days after initiation of translocation activities, the Designated Biologist shall provide to the CPM for review and approval in consultation with Western, USFWS, BLM, and CDFG, a written report identifying which items of the final Desert Tortoise Translocation Plan have been completed, and a summary of any modifications to measures made during implementation of the Plan. Written monthly progress reports shall be provided to the CPM for the duration of the Plan implementation. Progress reports shall be made available to Western, BLM, CDFG, and USFWS upon request.

**DESERT TORTOISE COMPENSATORY MITIGATION**

**BIO-16** The project owner shall provide compensatory mitigation acreage of 1,522 acres of desert tortoise habitat lands, adjusted to reflect the final project footprint, as specified in this condition. All or a portion of this compensation land may consist of land currently held by the project owner, pending analysis of its suitability (see Selection Criteria, below), as discussed in the analysis of impacts to desert tortoise, in the SA/DEIS. In addition, the project owner shall provide funding for initial improvement and long-term maintenance, enhancement, and management of the compensation lands for protection and enhancement of desert tortoise populations, and comply with other related requirements of this condition. This acreage was calculated as follows: Impacts to the solar generator site shall be compensated at a 1:1 ratio. Impacts along the generator tie-line and at the interconnector substation shall be compensated at a 3:1 ratio (see [Applicant's Opening Testimony, Part 2, October 22 2010]). These impact acreages are to be adjusted to reflect the final project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Project, including all linear project components, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the desert tortoise.

Costs of these requirements are estimated to be $3,888,055.50 based on the acquisition of 1,522 (see **Biological Resources Table 6** in the SA/DEIS for a list of acquisition and management costs and Exhibit 211 **Revised Biological Resources Table 10**, for calculations of total estimated habitat compensation costs).

As many as 37 acres (based on staff's estimate of generator tie-line and interconnector substation acreage on public land) of the compensation lands requirement may be satisfied by applicant's compliance with the desert tortoise habitat acquisition or enhancement requirements of BLM, to be calculated as an acre-for-acre offset in the Energy Commission requirement for mitigation provided to satisfy BLM's requirements. For purposes of this paragraph, credit will be

given for BLM-required mitigation without regard to whether BLM uses the mitigation funds for habitat acquisition or for enhancement projects to benefit the species.

The project owner shall provide financial assurances as described below in the amount of $3,888,055.50. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the Project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is $4,002,559.17. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the Project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 1,522 acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in **Biological Resources Table~~s~~ 6** in the SA/DEIS and Exhibit 211 **Revised Biological Resources Table 10**). Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

**COMPENSATORY MITIGATION LAND ACQUISITION**

1. Method of Acquisition. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction shall be complete only upon completion of all terms and conditions described in this Condition of Certification.

    a. The project owner shall transfer title and/or conservation easement of compensation lands to a state or federal land management agency or to a third-party non-profit land management organization, as approved by the CPM in consultation with BLM, CDFG, and USFWS; staff recommends transfer in fee title to the lands to CDFG under terms approved by CDFG. Alternatively, a CDFG-approved non-profit organization qualified pursuant to California Government Code Section 65965 may hold the fee title or a conservation easement over the lands. In the event an approved non-profit holds title, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG; in the event an

approved non-profit holds a conservation easement over the lands, CDFG shall be named third party beneficiary; or

b. The Project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in **Biological Resources Tables~~s~~ 6** in the SA/DEIS and Exhibit 211 **Revised Biological Resources Table 10** (adjusted to reflect final project footprint and any applicable REAT adjustments to costs).

2. Selection Criteria for Compensation Lands. Pending a review of the selection criteria below, staff has tentatively determined, in consultation with Western, CDFG, BLM, and USFWS, that applicant-owned land contiguous to the solar generator site would meet criteria as mitigation lands to partially satisfy this Condition of Certification. Any additional or alternate compensation lands selected for acquisition to meet Energy Commission and CESA requirements shall be equal to or better than the quality and function of the habitat impacted and shall:

   a. be within the Colorado Desert Recovery Unit, with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;

   b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;

   c. be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

   d. be contiguous and biologically connected to lands currently occupied by desert tortoise, ideally with populations that are stable, recovering, or likely to recover;

   e. not have a history of intensive recreational use or other disturbance that might cause future erosional damage or other habitat damage, and make habitat recovery and restoration infeasible;

   f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; and

   g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and

h. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of land without these rights.

3. Review and Approval of Compensation Lands Prior to Acquisition. The project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above and must be approved by the CPM. The CPM will share the proposal with and consult with Western, CDFG, BLM and the USFWS before deciding whether to approve or disapprove the proposed acquisition.

4. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM, in consultation with Western, CDFG, BLM and the USFWS, have approved the proposed compensation lands:

   a. Preliminary Report: The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM, in consultation with Western, CDFG, BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.

   b. Title/Conveyance: The Project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM in consultation with CDFG. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM in consultation with CDFG. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM,

in consultation with CDFG, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM, in consultation with CDFG, of the terms of any transfer of fee title or conservation easement to the compensation lands.

c. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM, in consultation with CDFG, before it can be used to establish funding levels or management activities for the compensation lands.

5. Compensation Lands Acquisition Costs: The Project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include but shall not be limited to the items listed below. Management costs including site cleanup measures are described separately, in the following section.

   a. Level 1 Environmental Site Assessment;

   b. Appraisal;

   c. Title and document review costs;

   d. Expenses incurred from other state, federal, or local agency reviews;

   e. Closing and escrow costs;

   f. Overhead costs related to providing compensation lands to CDFG or an approved third party;

   g. Biological survey(s) to determine mitigation value of the land; and

   h. Agency costs to accept the land (e.g., writing and recording of conservation easements; title transfer).

**COMPENSATORY MITIGATION LAND IMPROVEMENT**

1. Land Improvement Requirements: The Project owner shall fund activities that the CPM, in consultation with Western, CDFG, USFWS and BLM, requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include surveys of boundaries and property lines, installation of signs, trash removal and other site cleanup measures, construction and repair of fences, invasive plant removal, removal

of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at $250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.

**COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT**

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for desert tortoise. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.

2. Long-term Management Plan. The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM, in consultation with Western, CDFG, BLM and USFWS.

3. Long-Term Maintenance and Management Funding. The Project owner shall provide money to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be $1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the Project owner shall provide initial payment of $2,206,900.00, calculated at $1,450 an acre for 1,522 acres, into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the Project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of

long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than $1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the Project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with the project owner and CDFG before deciding whether to approve an entity to hold the project's long-term maintenance and management funds on any lands. The CPM, in consultation with the project owner and CDFG, may designate another state agency or non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity.

If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision.

The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFG designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFG, or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFG designates NFWF or another entity to manage the long-term maintenance and management fee for CDFG.

iii. Pooling Funds. A CPM- approved non-profit organization qualified to hold long-term maintenance and management fees

solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFG and CPM.

iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFG or an approved third party for reasonable expenses incurred during title, easement, and documentation review; expenses incurred from other State or State-approved federal agency reviews; and overhead related to providing compensation lands.

**COMPENSATORY MITIGATION LAND SECURITY**

1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of desert tortoise compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval, in consultation with CDFG, BLM and the USFWS, of the form of the Security.

   The security amount shall be based on the estimates provided in **Biological Resources Table~~s~~ 6** in the SA/DEIS and Exhibit 211 **Revised Biological Resources Table 10**. This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

   The Project owner shall provide verification that financial assurances have been established to the CPM with copies of the document(s) to BLM, CDFG and the USFWS, to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing activities described in Section A of this condition.

   In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the Project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of $3,888,055.50 (or $4,002,559.17 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 2 of this condition, below). The Security is calculated in part from the items that follow but adjusted as specified below (consult **Biological Resources Tables 6** in the SA/DEIS and Exhibit 211 **Revised Biological Resources Table 10** for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

i. land acquisition costs for compensation land, calculated at $500/acre;

ii. Site assessments, appraisals, biological surveys, transaction closing and escrow costs, calculated as $18,000 total per parcel (presuming 160 acres per parcel);

iii. Initial site clean-up, restoration, or enhancement, calculated at $250/acre;

iv. Third-party and agency administrative transaction costs and overhead, calculated as percentages of land cost;

v. Long-term management and maintenance fund, calculated at $1,450 per acre; and

vi. NFWF fees to establish a project-specific account; manage the sub-account for acquisition and initial site work; and manage the sub-account for long term management and maintenance.

2. The project owner may elect to comply with some or all of the requirements in this condition by providing funds to implement the requirements into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs of implementing the requirement (as set forth in the Security section of this condition, paragraph 1, above). If the actual cost of the acquisition, initial protection and habitat improvements, long-term funding or other cost is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, the long-term funding requirements as established in an approved PAR or PAR-like analysis, or the other actual costs that are estimated in the table. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall be returned to the project owner.

3. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the project.

5. The project owner may request the CPM to provide it with all available information about any funds held by the Energy Commission, CDFG, or NFWF as project security, or funds held in a NFWF sub-account for this project, or other project-specific account held by a third party. The CPM shall also fully cooperate with any independent audit that the project owner may choose to perform on any of these funds.

**Verification:** The project owner shall provide the CPM with written notice of intent to start ground disturbance at least 30 days prior to the start of ground-disturbing activities on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the Project owner shall provide verification to the CPM and CDFG that an approved Security has been established in accordance with this condition of certification no later than 30 days prior to beginning Project ground-disturbing activities. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with Western, CDFG, BLM and the USFWS, of the form of the Security. The project owner, or an approved third party, shall complete and provide written verification to the CPM, Western, CDFG, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities.

No later than 12 months after the start of ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcels intended for purchase or transfer, and shall obtain approval from the CPM, in consultation with Western, CDFG, BLM and USFWS, prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM, Western, CDFG, BLM and USFWS of such completion, no later than 18 months after the issuance of the Energy Commission Decision. If NFWF or another approved third party is being used for all or part of the acquisition, the project owner shall ensure that funds

needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFG to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed, and written verification provided to the CPM, no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM, Western, CDFG, BLM and USFWS with a management plan for the compensation lands within180 days of the land or easement purchase, as determined by the date on the title. The CPM, in consultation with Western, CDFG, BLM and the USFWS, shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. If this analysis shows that more lands were disturbed than was anticipated in this condition, the project owner shall provide the Energy Commission with additional compensation lands and funding commensurate with the added impacts and applicable mitigation ratios set forth in this condition. A final analysis of all project related ground disturbance may not result in a reduction of compensation requirements if the deadlines established under this condition for transfer of compensation lands and funding have passed prior to completion of the analysis.

### RAVEN MONITORING, MANAGEMENT, AND CONTROL PLAN

**BIO-17** The project owner shall prepare and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that shall be consistent with the most current USFWS-approved raven management guidelines and that meets the approval of the CPM in consultation with Western, BLM, USFWS, and CDFG. The draft Raven Plan submitted by the applicant (Appendix B of CH2MHill 2010c) shall provide the basis for

the final plan, subject to review, revisions and approval from the CPM in consultation with Western, BLM, USFWS, and CDFG. The purpose of the plan shall be to avoid any Project-related increases in raven numbers or activity during construction, operation, and decommissioning. The Plan shall address all project components and their potential effects on raven numbers and activity, including but not limited to the solar generator site, temporary logistics and lay down areas, generator tie-line alignment, and distribution line. The threshold for implementation of raven control measures shall be any increases in raven numbers from baseline conditions, as detected by monitoring to be implemented pursuant to the Plan. Regardless of raven monitoring results, the project owner shall be responsible for all other aspects of raven management described in the Plan, including avoidance and minimization of project-related trash, water sources, or perch/roost sites that could contribute to increased raven numbers, throughout the life of the project. In addition, to offset the cumulative contributions of the Project to desert tortoise from increased raven numbers, the Project owner shall also contribute to the USFWS Regional Raven Management Program. The Project owner shall do all of the following:

1. Prepare and Implement a Raven Management Plan that shall include, but shall not be limited to the following components:
    a. Identify conditions potentially associated with the Project that might provide raven subsidies or attractants;
    b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
    c. Specify a program to monitor raven presence in the Project vicinity and detect any increase in numbers or activity;
    d. Specify raven activity thresholds for implementation of control measures;
    e. Describe control practices for ravens to be implemented as needed based on that monitoring results;
    f. Address monitoring and nest removal during construction and for the life of the Project; and
    g. Describe reporting schedules and requirements; for the first year of reporting the project owner shall provide quarterly reports describing implementation of the Plan; thereafter the reports shall be submitted annually for the life of the project.
2. Contribute to the USFWS Regional Raven Management Program. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The amount shall be a one-time payment of $105 per acre of long-term or permanent disturbance (totaling

$152,040.00 for disturbance area of 1,448 acres, to be adjusted according to final project footprint).

No later than 30 days prior to the start of construction, the project owner shall provide written verification to the CPM that NFWF has received and accepted payment into the project's sub-account of the REAT Account to support the USFWS Regional Raven Management Program.

No later than 30 days prior to any construction-related ground disturbance activities, the Project owner shall provide the CPM, USFWS, and CDFG with the final version of a Raven Management Plan. All modifications to the approved Raven Management Plan shall be made only with approval of the CPM in consultation with Western, BLM, USFWS and CDFG.

Within 30 days after completion of Project construction, the Project owner shall provide to the CPM for review and approval, a written report identifying which items of the Raven Management Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

On January 31st of each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.

**GOLDEN EAGLE PRE-CONSTRUCTION SURVEYS**

**BIO-18** The Project owner shall implement the following measures to avoid or minimize Project-related construction impacts to golden eagles.

1. Annual Inventory During Construction. For each year during which construction will occur an inventory shall be conducted to determine if golden eagle territories occur in the area surrounding the solar generator site and generator tie-line alignment. Specific distances from the project facilities to be covered during field surveys shall be no less than one mile and shall be determined in consultation among the CPM, USFWS, CDFG, BLM and Western and stated in the Avian and Bat Protection Plan (see **Condition of Certification BIO-25**). Survey methods for the inventory shall be as described in the *Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations* (Pagel et al. 2010) or more current guidance from the USFWS.

2. Inventory Data: Data collected during the inventory shall include at least the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; digital photographs; and substrate upon which nest is placed.

3. Determination of Unoccupied Territory Status: A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles only after completing at least two full aerial surveys in a single breeding season. In circumstances where ground observation occurs rather than aerial surveys, at least two ground observation periods lasting at least four hours are necessary to designate an inventoried habitat or territory as unoccupied as long as all potential nest sites and alternate nests are visible and monitored. These observation periods shall be at least 30 days apart for an inventory, and at least 30 days apart for monitoring of known territories.

4. Monitoring and Adaptive Management Plan: If an occupied nest (as defined by Pagel et al. 2010) is detected in the area surrounding the solar generator site or generator tie-line alignment, the Project owner shall prepare and implement a Golden Eagle Monitoring and Management Plan for the duration of construction to ensure that Project construction activities do not result in injury or disturbance to golden eagles. The monitoring methods shall be consistent with those described in the *Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations* (Pagel et al. 2010) or more current guidance from the USFWS. The Monitoring and Management Plan shall be prepared in consultation with the USFWS. Triggers for adaptive management shall include any evidence of Project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of golden eagle disturbance.

**Verification:** No fewer than 30 days from completion of the golden eagle inventory the Project owner shall submit a report to the CPM, Western, CDFG, BLM, and USFWS documenting the results of the inventory.

If an occupied nest is detected in the area surrounding the solar generator site or generator tie-line alignment, then at least 30 days prior to the start of any pre-construction site mobilization the project owner shall provide the CPM, Western, BLM, CDFG, and USFWS with the final version of the golden eagle monitoring and management plan. This final plan shall have been reviewed and approved by the CPM, USFWS, and Western in consultation with BLM, and CDFG. If no occupied nests are detected during the inventory and a plan is not warranted, a letter from USFWS documenting this determination shall be submitted to the CPM and Western at least 10 days prior to the start of any pre-construction site mobilization.

**BURROWING OWL IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION MEASURES**

**BIO-19** The project owner shall implement the following measures to avoid and offset impacts to burrowing owls. Nothing in this condition requires the project owner to conduct burrowing owl surveys by entering private lands adjacent to the project site when the project owner has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission. In this situation only, the project owner may substitute binocular surveys for protocol field surveys.

1. Pre-Construction Surveys. Concurrent with desert tortoise clearance surveys, the Designated Biologist shall conduct pre-construction surveys for burrowing owls no more than 30 days prior to the start of ground disturbing activities in any part of the project area. Surveys shall be conducted within the project site and along all linear facilities in accordance with CDFG guidelines (CBOC 1993). Surveys shall also be completed within 500 feet of all project disturbances.

2. Implement Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented:

   a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.

   b. Monitoring: If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1 – August 31st) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall implement measures to minimize or avoid such disturbance.

3. Passive Relocation of Burrowing Owls. If active burrowing owl burrows are detected within the Project Area, the Project owner shall prepare and implement a Burrowing Owl Relocation and Mitigation Plan, in addition to the avoidance measures described above. The final Burrowing Owl Relocation and Mitigation Plan shall be based on the applicant's draft plan (CH2MHill 2010h) revised to incorporate pending review and recommendations by the

CPM in consultation with Western ,USFWS, BLM and CDFG, and shall:

a. Identify and describe suitable burrow replacement sites within 1 mile of the Project Disturbance Area, and describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or any burrowing owls already present in the relocation area; burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and be characterized by minimal human disturbance and access. Relative cover of non-native plants within the proposed relocation sites shall not exceed the relative cover of non-native plants in the adjacent habitats;

b. Provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFG guidelines (CDFG 1995) and shall be approved by the CPM in consultation with Western, CDFG, BLM and USFWS; if artificial burrows are required, they shall be located on applicant-owned lands outside of the project boundary where construction/ development would not occur, and at sufficient distance from the project site to minimize noise and other disturbance;

c. Provide detailed methods and guidance for passive relocation of burrowing owls occurring during non-breeding season within the Project Disturbance Area. Occupied burrows may not be disturbed during the nesting season (February 1 to August 31) to avoid “take” under the MBTA and Fish and Game codes; and

d. Describe monitoring and management of the replacement burrow site(s), and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goals of:

   i. maintaining the functionality of the burrows for a minimum of two years; and

   ii. Minimizing the occurrence of weeds (species considered “moderate” or “high” threat to California wildlands as defined by CAL-IPC [2006] and noxious weeds rated “A” or “B” by the California Department of Food and Agriculture and any federal-rated pest plants [CDFA 2009]) at less than 10 percent cover of the shrub and herb layers.

4. <u>Surveys of Relocation Area</u>. The Designated Biologist shall survey the relocation area(s) containing the artificial burrows installed in

accordance with Item 3 above during the nesting and wintering seasons to assess use of the artificial burrows, using methods consistent with Phase II and Phase III California Burrowing Owl Consortium Guideline protocols (CBOC 1993). Surveys shall start upon completion of artificial burrow construction and shall continue for a period of five years. If survey results indicate burrowing owls are not using the relocation area, remedial actions shall be developed and implemented in consultation with the CPM, Western, BLM, CDFG, and USFWS to correct conditions at the site that might be preventing owls from using it. A report describing survey results and remedial actions taken shall be submitted to the CPM, Western, BLM, CDFG, and USFWS no later than January 31st of each year for five years.

5. Acquisition and protection of compensatory mitigation lands for burrowing owls. The Project owner shall provide, in fee or in easement, for the management and protection in perpetuity of 19.5 acres of land for each single burrowing owl or breeding pair or burrowing owls that is displaced by construction of the Project. This compensation acreage of 19.5 acres per single bird or pair of nesting owls assumes that there is no evidence that the compensation lands are occupied by burrowing owls. If burrowing owls are observed to occupy the compensation lands, then only 9.75 acres per single bird or pair is required, per CDFG (1995) guidelines. If the compensation lands are contiguous to currently occupied habitat, then the replacement ratio will be 13.0 acres per pair or single bird.

   Compensation land acreage and cost estimates described here are based on the applicant's report that as many as five single burrowing owls or breeding pairs may occur on the solar generator site and one or two single owls or breeding pairs may occur along the generator tie-line alignment. At 19.5 acres of compensation land per single owl or nesting pair, the project owner shall be responsible for dedicating and protecting 136.5 acres of burrowing owl habitat. This estimated acreage shall be adjusted based upon pre-construction survey data and the occurrence of burrowing owls on proposed compensation lands (above).

   The project owner shall transfer fee title or a conservation easement on the compensation lands to CDFG under terms approved by CDFG. Alternatively, a non-profit organization qualified to manage compensation lands (pursuant to California Government Code section 65965) and approved by CDFG and the CPM may hold fee title or a conservation easement over the habitat mitigation lands. If the approved non-profit organization holds title, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG. If the approved non-profit holds a

conservation easement, CDFG shall be named a third party beneficiary. If a Security is provided, the project owner or an approved third party shall complete the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities. Acquisition funding shall be based on the adjusted land values at the time of construction. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described in Section 3.i. of Condition of Certification **BIO-16**.

In addition, the Project owner shall provide funding for the enhancement and long-term management of these compensation lands. The acquisition or easement and subsequent management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFG, Western, BLM, and USFWS prior to land acquisition or management activities. Management funding shall be based on the adjusted transaction and management expenses at the time of construction to acquire and manage habitat.

a. Criteria for Burrowing Owl Compensation Lands. The terms and conditions of this acquisition or easement shall be as described in Paragraph 1 of **BIO-16** (Desert Tortoise Compensatory Mitigation), with the additional criteria to include: 1) the burrowing owl compensation land must provide suitable habitat for burrowing owls, and 2) the compensation lands must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owls (generally approximately 5 miles). The burrowing owl compensation lands may be included with the desert tortoise compensation lands only if these two burrowing owl criteria are met. If the burrowing owl compensation land is separate from the acquisition required for desert tortoise compensation lands, the Project owner shall fulfill the requirements described below in this condition.

b. Security. If the burrowing owl habitat compensation land is separate from the acreage required for desert tortoise compensation lands, then the Project owner or an approved third party shall complete acquisition of the proposed compensation lands prior to initiating ground-disturbing Project activities. Alternatively, financial assurance can be provided by the Project owner to the CPM with copies of the document(s) to Western, CDFG, BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the

**Verification:** If pre-construction surveys detect burrowing owls or active burrows outside the project disturbance area but within 500 feet of proposed construction activities, the Designated Biologist shall provide to the CPM, CDFG, USFWS, BLM, and Western a Burrowing Owl Monitoring and Mitigation Plan at least 10 days prior to the start of any project-related site disturbance activities. The project owner shall report monthly to the CPM, CDFG, USFWS, BLM, and Western for the duration of construction on the implementation of burrowing owl avoidance and minimization measures described in the Burrowing Owl Monitoring and Mitigation Plan. Within 30 days after completion of construction the project owner shall provide to the CPM, CDFG, USFWS, BLM, and Western a written construction termination report identifying how mitigation measures described in the plan have been completed.

If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, the Designated Biologist shall provide to the CPM, Western, BLM, CDFG and USFWS documentation indicating that non-disturbance buffer fencing has been installed at least 10 days prior to the start of any construction-related ground disturbance activities. The Project owner shall report monthly to the CPM, Western, CDFG, BLM and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the Project owner shall provide to the CPM, Western, BLM, CDFG and USFWS a written construction termination report identifying how mitigation measures described in the plan have been completed.

If pre-construction surveys detect burrowing owls within the Project Disturbance Area, the Project owner shall notify the CPM, Western, BLM, CDFG and USFWS no less than 10 days of completing the surveys that a relocation of owls is

necessary. The Project owner shall do all of the following if relocation of one or more burrowing owls is required:

a. Within 30 days of completion of the burrowing owl pre-construction surveys, submit to the CPM, Western, CDFG and USFWS a Draft Burrowing Owl Relocation and Mitigation Plan.

b. No less than 90 days prior to purchase or dedication of the burrowing owl compensation lands, the Project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM, Western, CDFG, and USFWS describing the parcel intended for purchase or dedication. At the same time the Project owner shall submit a PAR or PAR-like analysis for the parcels for review and approval by the CPM, CDFG and USFWS.

c. Within 90 days of the purchase or dedication, as determined by the date on the title, the Project owner shall provide the CPM with a management plan for review and approval, in consultation with Western, CDFG, BLM and USFWS, for the compensation lands and associated funds.

d. No later than 30 days prior to the start of construction-related ground disturbing activities, the Project owner shall provide written verification of Security in accordance with this condition of certification.

e. No later than 18 months after the start of construction-related ground disturbance activities, the Project owner shall provide written verification to the CPM, Western, BLM, CDFG and USFWS that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

f. On January 31st of each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, USFWS, BLM and CDFG that describes the results of monitoring and management of the replacement burrow area. The annual report shall provide an assessment of the status of the replacement burrow area with respect to burrow function and weed infestation, and shall include recommendations for actions the following year for maintaining the burrows as functional burrowing owl nesting sites and minimizing the occurrence of weeds.

**AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES**

**BIO-20** Prior to ground disturbance the project owner shall conduct pre-construction surveys for American badgers and desert kit fox. These surveys may be conducted concurrently with the desert tortoise pre-construction surveys (Condition of Certification **BIO-14**, above). Surveys shall be conducted as described below:

1. Biological Monitors shall perform pre-construction surveys for badger and kit fox dens throughout the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active.

2. Inactive dens within the proposed security and perimeter fences, or that would be directly impacted by any construction activities, shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox. Potentially active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand.
3. If present, occupied badger or kit fox dens shall be flagged; monitored daily to determine whether the den is occupied by a female with young (i.e., a maternity den) and ground-disturbing activities avoided within 100 feet of the den as long as it remains occupied. Maternity dens shall be avoided during the pup-rearing season (15 February through 1 July) and a minimum 200-foot disturbance-free buffer established. Buffers may be modified with the concurrence of CDFG and the CPM. Maternity dens shall be flagged for avoidance, identified on construction maps, and a biological monitor shall be present during any construction activity within 500 feet of the maternity den.
4. If avoidance of an occupied non-maternity den is not feasible, badgers or kit foxes shall be passively relocated by slowly excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more that 4 inches at a time) and allowing the animal to disperse from the site (e.g., by providing a temporary monitored opening in the tortoise exclusion fence and directing the animal toward the opening with temporary plastic construction fencing). Female kit foxes or badgers with young would not be directed off-site until the young are ready to leave the dens. Any forced dispersal of badgers or kit foxes shall occur only after consultation with the CDFG and approval by the CPM. A written report documenting the animal's removal or forced dispersal shall be provided to the CPM within 30 days of relocation. In the event that passive relocation techniques fail for badgers, the Applicant will contact CDFG to explore other relocation options, which may include trapping.

**Verification:** The project owner shall submit a report to the CPM and CDFG within 30 days of completion of badger and kit fox surveys. The report shall describe survey methods, results, further mitigation measures (if any) to be implemented, and shall specify reporting and verification requirements (e.g., CDFG approval for forced dispersal plans) for those measures. Results of any follow-up measures shall be reported to the CPM in monthly and annual compliance reports and on any reporting schedule required or recommended by CDFG.

## FENCE LOCATIONS: LOGISTICS, LAY-DOWN AREA, AND ACCESS ROAD

**BIO-21** To allow east-west wildlife passage alongside the highway and to minimize road mortality during project construction, the project owner shall design and build the facility to provide a minimum 100-foot unfenced wildlife passage area south of SR-62 and north of the solar field and any contiguous project components that would interrupt wildlife passage. These include temporary and permanent project components, including but not limited to logistics and lay-down areas, administrative area, cultural resources interpretive site, permanent or temporary fencing, security gate, and any other project component, excluding unfenced linear facilities such as access roads or electrical distribution lines. With the exception of minimal disturbance necessary for linear project features, this wildlife passage area shall consist of undisturbed or revegetated desert shrubland.

**Verification:** The project owner shall submit final plan drawings to the CPM and Western no less than 30 days prior to scheduled commencement of ground-disturbing activities, to indicate thelocation of the wildlife passage area. No fence construction or other ground-disturbing activities shall proceed within the designated wildlife passage area without written authorization of the CPM.

## STREAMBED IMPACT MINIMIZATION AND COMPENSATION MEASURES

**BIO-22** The project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the State and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

1. Eliminate Proposed Storm Water Detention Basins: The project owner shall eliminate the proposed detention basins from the project design. The owner shall design and construct the perimeter road at existing grade in the southern portion of the project site to allow runoff to cross the road freely, as shown in the applicant's Response to CEC Staff Workshop Query 12 (SR 2010a). The project owner may adopt the road design as submitted (SR 2010a) or provide an alternate design to minimize potential for road damage during heavy rains (e.g., the owner may elect to pave the road or install periodic low-water crossings that would not impede runoff).

2. Finalize Acreages of Impacts to State Waters: Staff estimates that 82.8 acres of state-jurisdictional waters would be directly or indirectly impacted by the project. Upon completion of final engineering, the project owner shall review and quantify the project's permanent and long-term impacts to state-jurisdictional waters. The calculated acreage of permanent and long-term impacts shall include all ephemeral drainages impacted by construction within or adjacent to the fenced boundary of the solar field site, including the proposed logistics and lay-down areas and

diversion channels, as well as impacts to drainages resulting from the construction or widening of access for new or existing transmission line access road; transmission line tower access; logistics, staging, and lay-down areas; road turnouts; pull sites; interconnection substation; and any other project-related disturbance to jurisdictional waters.

3. Acquire Off-Site State Waters: Permanent and long-term impacts to waters of the State shall be mitigated by compensation at a 1:1 ratio. The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least the same acreage of State jurisdictional waters as would be impacted by construction of the project, as determined in Item 1 above. The parcel or parcels comprising the off-site State waters shall include similar vegetation and habitat types as those mapped in the project footprint. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO-16**. Mitigation for impacts to State waters shall occur within the surrounding watersheds, as close to the project site as possible. State waters occurring on desert tortoise compensation lands (Condition of Certification **BIO-16**) may be used to fulfill the requirements of this condition. Additional off-site State waters shall be acquired if desert tortoise compensation lands do not contain the minimum acreage of State waters as required for compliance with this Condition of Certification.

4. Preparation and Implementation of Habitat Management Plan for Off-site Compensation Land: The project owner shall prepare and implement a Management Plan that describes site-specific enhancement measures for the acquired compensation lands, as described in Condition of Certification **BIO-16**. The Management Plan, as developed for Condition of Certification **BIO-16**, shall include site-specific enhancement measures for all drainages on compensation lands that will be used to fulfill the requirements of this Condition of Certification. Any additional lands beyond those required for compliance with Condition of Certification **BIO-16** that may be required for compliance with this Condition of Certification shall also be included in the Management Plan. The management plan shall be submitted for the CPM'S review in consultation with CDFG, Western, and BLM.

5. Code of Regulations: The project owner shall provide a copy of the Streambed Impact Minimization and Compensation Measures from the Energy Commission Decision and Western and BLM Records of Decision to all contractors, subcontractors, and the project owner's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel or personnel from another

agency upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the project owner and the CPM, if the CPM in consultation with CDFG determines that the project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:

a. The information provided by the project owner regarding streambed alteration is incomplete or inaccurate;

b. New information becomes available that was not known to it in preparing the terms and conditions; or

c. The project or project activities as described in future environmental documentation or in decision documents prepared by the Energy Commission, Western or BLM have changed.

6. Best Management Practices: The project owner shall also comply with the following conditions to protect drainages near the Project Disturbance Area:

   a. The project owner shall not operate vehicles or equipment in ponded or flowing water except as described in this condition.

   b. With the exception of the detention basin(s) and drainage control system installed for the project, the installation of bridges, culverts, or other structures shall be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts shall be placed at or below stream channel grade.

   c. When any activity requires moving of equipment across a flowing drainage, such operations shall be conducted without substantially increasing stream turbidity.

   d. Vehicles driven across ephemeral drainages when water is present shall be completely clean of petroleum residue and water levels shall be below the vehicles' axles.

   e. The project owner shall minimize road building, construction activities, and vegetation clearing within ephemeral drainages to the extent feasible for all project components both within and outside the perimeter fence.

   f. The project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter off-site state-jurisdictional waters or be placed in locations that may be subjected to high storm flows.

   g. The project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey

these laws, and it shall be the responsibility of the project owner to ensure compliance.

h. Spoil sites shall be located and protected as necessary to prevent spoils from eroding into any off-site state-jurisdictional waters. No spoils shall be placed in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.

i. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering off-site state-jurisdictional waters. These materials, if placed within or where they may enter a drainage by the project owner or any party working under contract or with the permission of the project owner, shall be removed immediately.

j. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, off-site state-jurisdictional waters .

k. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any category 3, 4, or 5 streambed or any streambed greater~~d~~ than 10 feet wide.

l. No equipment maintenance shall occur within 150 feet of any category 3, 4, or 5 streambed or any streambed greated than 10 feet wide and no petroleum products or other pollutants from the equipment shall be allowed to enter these areas or enter any off-site state-jurisdictional waters under any flow.

m. Stationary equipment such as motors, pumps, generators, and welders, located within or adjacent to a drainage, shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as booms, absorbent pads, and skimmers shall be on site prior to the start of construction.

n. The cleanup of all spills shall begin immediately. The CPM, Western, CDFG, and BLM shall be notified immediately by the project owner of any spills and shall be consulted regarding clean-up procedures.

7. Non-Native Vegetation Removal. The project owner shall remove any non-native vegetation (Consistent with the Weed Management Plan, Condition of Certification **BIO-11**) from any drainage on the project site that requires the placement of a bridge, culvert, or other structure. Removal shall be done at least twice annually (Spring/Summer) throughout the life of the project.

8. Reporting of Special-Status Species: Consistent with Condition of Certification **BIO-2**, if any special-status species are observed on or in proximity to the project site, or during project surveys, the project owner shall submit California Natural Diversity Data Base (CNDDB) forms and maps to the CNDDB within five working days of the sightings and provide the regional CDFG office with copies of the CNDDB forms and survey maps. The CNDDB form is available online at: www.dfg.ca.gov/whdab/pdfs/natspec.pdf. This information shall be mailed within five days to: California Department of Fish and Game, Natural Diversity Data Base, 1807 13th Street, Suite 202, Sacramento, CA 95814, (916) 324-3812. A copy of this information shall also be mailed within five days to the CPM, Western, USFWS, CDFG, and BLM.

9. Avoidance (North of Desert Center Alternative): If the North of Desert Center Alternative is selected, project design and implementation shall avoid direct or indirect impacts to the primary wash on the site and a 100-foot buffer area surrounding the wash, including associated native vegetation.

10. Notification: The project owner shall notify the CPM, Western, BLM, and CDFG, in writing, at least five days prior to initiation of project activities in jurisdictional areas and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM, Western, BLM, and CDFG of any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts, if the conditions at the site of the proposed project change in a manner which changes risk to biological resources that may be substantially adversely affected by the proposed project. The notifying report shall be provided to the CPM, Western, BLM, and CDFG no later than 7 days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project; the biological and physical characteristics of a project area; or the laws or regulations pertinent to the project, as described below. A copy of the notifying change of conditions report shall be included in the annual reports.

    a. Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the project area, whether native or non-native, not previously known to occur in the area; or 2)

the presence of biological resources within or adjacent to the project area, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

b. Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.

c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

**Verification:** Within 30 days of the completion of final engineering, the project owner shall notify the CPM, Western, BLM, and CDFG of the total acreage of impacts to jurisdictional waters. No fewer than 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall implement the construction-related mitigation measures described above, shall verify that appropriate compensation lands have been identified, and shall submit a draft Habitat Management Plan for the identified compensation lands. No fewer than 30 days prior to the start of work potentially affecting waters of the State, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM, Western, BLM, and CDFG that the above best management practices will be implemented and provide a discussion of planned work in waters of the State in Compliance Reports for the duration of the project.

Within 30 days after completion of the first year of project construction, the project owner shall provide to the CPM, Western, BLM, and CDFG for review and approval a report identifying that appropriate compensatory mitigation lands have been obtained, that the Habitat Management Plan has been reviewed and approved by all responsible agencies, that implementation as specified in the Plan has been initiated, verification of ongoing enhancement techniques, and a summary of all modifications made to the existing channels.

Verification of non-native vegetation removal from drainages on-site, and reporting of special-status species shall be included in monthly and annual compliance reports (Condition of Certification **BIO-2**). Verification of implementation and completion of the compensation land Habitat Management Plan shall be as specified in that Plan.

## COUCH'S SPADEFOOT SURVEYS AND BREEDING HABITAT AVOIDANCE

**BIO-23** The Project Owner shall implement focused surveys to delineate any potential Couch's spadefoot breeding habitat along the length~~s~~ of the generator tie-line alignment and delineate these areas for avoidance in consultation with Western, CDFG, and BLM. These surveys shall be conducted prior to the initiation of ground disturbance for transmission line construction work and shall be conducted by a biologist knowledgeable with Couch's spadefoot biology and habitat. No disturbance shall take place within suitable breeding ponds while water is present. If suitable breeding ponds, adult spadefoots, eggs, or larvae/tadpoles are found, a 200 foot buffer shall be placed around these areas and shall remain in place until the larva/tadpoles complete metamorphosis and retreat to upland areas or until the pools are completely dry.

Impacts to all potential breeding habitat for Couch's spadefoot shall be avoided to the extent feasible. If work within this habitat cannot be avoided, work shall be conducted only while any potential breeding pools are completely dry.

**Verification:** No less than 30 days prior to initiating ground disturbing activities along either transmission line alignment, the project biologist shall provide a written report detailing the survey results and compliance with avoidance measures to the CPM for review in consultation with Western, CDFG, and BLM.

## EVAPORATION POND DESIGN, MONITORING, AND MANAGEMENT PLAN

**BIO-24** The project owner shall cover the evaporation ponds prior to any discharge with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting with mesh sizes other than 1.5-inches may be installed if approved by the CPM in consultation with CDFG and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and shall be designed such that the netting shall never contact the water.

The project owner shall also design and implement an Evaporation Pond Design, Monitoring, and Management Plan (Evaporation Pond Plan) that meets the approval of the CPM, USFWS, CDFG, and Western. The goal of the Evaporation Pond Plan shall be to avoid the potential for bird and wildlife mortality associated with the evaporation ponds. The Evaporation Pond Plan shall include:

1. A discussion of the objectives of the Evaporation Pond Plan;

2. A description of project design features such as side slope specifications, freeboard and depth requirements, covering, and fencing;
3. A discussion on the placement of the evaporation ponds as to reduce the potential of collision or electrocution of wildlife near the transmission line;
4. Monitoring of the ponds, which shall include:
    a. Monthly Monitoring. The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. Surveys shall be of sufficient duration and intensity to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the project site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within one day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within two days of the discovery to the CPM, Western, CDFG, and USFWS.
    b. Dead or Entangled Birds. If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, Western, CDFG, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.
    c. Quarterly Monitoring. If after 12 consecutive monthly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist, monitoring can be reduced to quarterly visits.
    d. Biannual Monitoring. If after 12 consecutive quarterly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist, and with approval from the CPM, USFWS and CDFG, future surveys may be reduced to two surveys per year, during spring and fall migration.

5. Management actions such as bird deterrence/hazing and water level management and triggers for those management actions; and
6. Reporting requirements.

**Verification:** No less than 30 days prior to operation of the evaporation ponds the project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. At least 30 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM, Western, USFWS, and CDFG with the final version of the Evaporation Pond Plan that has been reviewed and approved by USFWS, CDFG, and staff. The CPM shall determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Evaporation Pond Plan must be made only after consultation with the CPM, Western, USFWS, and CDFG. The project owner shall notify the CPM no less than 5 working days before implementing any CPM-approved modifications to the Evaporation Pond Plan.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the Evaporation Pond Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and as-built drawings of the evaporation ponds.

For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, Western, CDFG, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any bird or wildlife mortality or entanglements detected during the site visits or at any other time, and shall describe actions taken to remedy these problems. The annual report shall be submitted to the CPM, Western, CDFG, and USFWS no later than January 31st of every year for the life of the project.

### AVIAN AND BAT PROTECTION PLAN / MONITORING OPERATIONAL IMPACTS OF SOLAR COLLECTION FACILITY ON BIRDS AND BATS

**BIO-25** Avian and Bat Protection Plan: The project owner shall prepare and implement an Avian and Bat Protection Plan adopting all applicable guidelines recommended by the USFWS (2010e) in coordination with the Heliostat Positioning Plan (Condition of Certification **TRANS-5**) to minimize death and injury of birds or bats from (1) collisions with facility features including the heliostat structures, central tower, and generator tie-line towers or transmission lines and (2) focused light and heat at and near the central tower or at "standby points" while the heliostats are focused away from the tower. The Avian and Bat Protection Plan shall include modifications to proposed plant operation to avoid or minimize focusing heliostats at standby points and, instead, move heliostats into a stowed position or another alternative configuration when the power plant is in standby mode. The Avian and Bat

Protection Plan shall identify additional adaptive management measures to minimize collisions and incinerations. The Avian and Bat Protection Plan shall also provide documentation that the project is in compliance with the Bald and Golden Eagle Protection Act (Title 16, United States Code, Section 668) and shall provide specific construction activity and scheduling guidelines to avoid disturbance to golden eagle nesting territories (see **Condition of Certification BIO-18**). The Avian and Bat Protection Plan shall provide a reporting schedule for all actions taken during project construction or operation. Upon USFWS approval, it shall be reviewed and approved by the CPM in consultation with Western, CDFG, and BLM. Upon review and approval, it shall be incorporated into the project's BRMIMP and implemented.

Bird and Bat Monitoring Study: The project owner shall prepare and implement a Bird and Bat Monitoring Study to monitor the death and injury of birds and bats from collisions with project facilities including heliostats and solar receiver tower, and burning caused by flying through focused sunlight around the solar receiver tower or standby points. The study design shall be approved by the CPM in consultation with Western, CDFG and USFWS, and shall be incorporated into the project's BRMIMP and implemented by the Designated Biologist in coordination with the project owner, CPM, Western, CDFG, BLM, and USFWS. The Bird and Bat Monitoring Study shall include detailed specifications on data and carcass collection protocol, to include identification of each carcass to species whever possible and a proposed schedule of carcass searches to be based upon a valid sampling rationale. All bird or bat carcasses shall be retained in a freezer on-site, with all collection data written on an attached data form, pending disposition to CDFG or a certified museum (e.g., San Bernardino County Museum; Western Foundation of Vertebrate Zoology or California Academy of Sciences) pending recommendation of the wildlife agencies. For any special-status species carcasses, the Biological Monitor shall contact CDFG and USFWS (for golden eagle or any federally-listed species) within one working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall report the special-status species record as described in Conditions of Certification **BIO-2, BIO-7,** and **BIO-22**.

. The study shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.

Adaptive management and mitigation strategies that may be implemented in the event that the Bird and Bat Monitoring Study identifies the need for additional mitigation could include the use of visual or auditory deterrents, or the acquisition and conservation of offsite habitat of similar type and quality as was present at the RSEP site prior to project development.

**Verification:** No more than 60 days following the docketing of the Energy Commission Final Decision or publication of Western's Record of Decision, whichever comes first, the project owner shall submit for approval by the CPM, in consultation with Western, BLM, and CDFG a final Avian and Bat Protection Plan which has already been reviewed and approved by USFWS. The Plan shall include documentation that the project is in compliance with the Bald and Golden Eagle Protection Act (Title 16, United States Code Section 668). This documentation shall include a written or electronic transmittal from the USFWS indicating its approval of the Avian and Bat Protection Plan, the status of any permit that may be required, and any follow-up actions required by the applicant. Modifications to the Avian and Bat Protection Plan shall be made only after approval from the CPM, in consultation with Western, BLM, USFWS, and CDFG.

Implementation and results of the Avian and Bat Protection Plan shall be described in periodic reports, scheduled according to the reporting schedule set forth in the approved Plan. The project owner shall submit reports to the CPM for review and approval, in consultation with Western, CDFG, BLM, and USFWS.

No more than 30 days following the publication of the Energy Commission Decision, the project owner shall submit to the CPM, Western, USFWS, and CDFG a draft Bird and Bat Monitoring Study. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the Bird and Bat Monitoring Study, as reviewed and approved by the CPM in consultation with Western, CDFG and USFWS. Modifications to the Bird and Bat Monitoring Study shall be made only with the approval of the CPM in consultation with Western, CDFG and USFWS.

For at least two years following the beginning of operation the project owner shall submit quarterly reports to the CPM, Western, CDFG, and USFWS describing the dates, durations, and results of monitoring. The quarterly reports shall provide detailed descriptions of any project-related bird or wildlife deaths or injuries detected during the monitoring study or at any other time.

Following the completion of the fourth quarter of monitoring each year, the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any project-related bird and/or bat fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed. The Annual Report shall be provided to the CPM, Western, CDFG, and USFWS.

Quarterly reporting shall continue until the CPM, in consultation with Western, CDFG and USFWS determine whether further monitoring is needed, and whether mitigation (e.g., development and/or implementation of bird deterrent technology, etc.) and/or adaptive management measures are necessary. After the Bird and Bat Monitoring Study is determined by the CPM to be complete, the project owner or contractor shall prepare a paper that describes the study design and monitoring results to be submitted to a peer-reviewed scientific journal. A copy of the manuscript and proof of submittal shall be provided to the CPM within one year of concluding the monitoring study.

## IN-LIEU FEE MITIGATION OPTION

**BIO-26** The Project owner may choose to satisfy its mitigation obligations identified in this Decision by paying an in lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, provided that the project's in-lieu fee provision is found by the Commission to be in compliance with CEQA and CESA requirements. If the in-lieu fee proposal is found by the Commission to be in compliance, and the Project Owner chooses to satisfy its mitigation obligations through the in-lieu fee, the Project Owner shall provide proof of the in-lieu fee payment to the CPM.

**Verification**: If electing to use this provision, the Project Owner shall notify the Commission and all parties to the proceeding that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements. If the project owner elects to use this provision prior to posting security required by the conditions of certification, the Project Owner shall provide proof of the in-lieu fee payment to the CPM prior to any ground disturbance. If the Project owner elects to use this provision after posting such security, the Project owner shall provide proof of the in lieu fee payment prior to the time required for habitat compensation lands to be surrendered in accordance with the Condition of Certification

## B. SOIL AND WATER RESOURCES

This section addresses the soil and water resources associated with the Rice Solar Power project (RSEP), including the Project's potential to induce erosion and sedimentation, modify drainage and flooding conditions, adversely affect groundwater supplies, and degrade water quality. The analysis also considers potential cumulative impacts to soil and water resources related to future foreseeable projects and site decommissioning. Mitigation measures are included in the Conditions of Certification to ensure that the project will have no significant impacts on the environment and will comply with all applicable laws, ordinances, regulations, and standards (LORS).

In accordance with the California Environmental Quality Act (CEQA) Guidelines and performance standards, this discussion evaluates each of the following items:

- Whether construction or operation would lead to accelerated wind or water erosion and sedimentation;

- Whether the project would exacerbate flood conditions in the vicinity of the project;

- Whether the project's water use would cause a substantial, or potentially substantial, adverse change in the quantity or quality of groundwater or surface water; and

- Whether project construction or operation would lead to degradation of surface or groundwater quality. [CEQA Guidelines, Appendix G (14, Cal Code Regs., §§ 15000 – 15387; Ex. 200, p. 6.9-9.).]

We also evaluated the project's compliance with the LORS and policies presented in **Appendix A** to this Decision. These LORS reflect a comprehensive regulatory system, with adopted standards and established practices designed to prevent or minimize adverse impacts to soil and water resources.

The evidence supporting the record is contained in 10/29/10 RT 21, Exs. 1,§§ 5.11, 5.15, 3, 4 [110-146], 5 [Soil and Water Resources], 9 [Soil and Water Resources], 12 [121], 14 [Soil and Water Resources], 21 [Soil and Water Resources], 38 [Soil and Water Resources], 48 [Soil and Water Resources], 200, § 6.9.

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Regional Setting

The RSEP will be located near the town of Rice in the eastern portion of California's Colorado Desert, along the northern edge of Riverside County. The proposed project's transmission line construction will be within a portion of federal land administered by the Bureau of Land Management (BLM).

The RSEP project will be located on the site of the former Rice Army Airfield, which was abandoned between 1954 and 1958. The project footprint is expected to total 1,410 acres.

The RSEP will be developed on a shallow alluvial fan below the Turtle Mountains in Rice Valley. The 355-square mile Rice Valley extends across the Riverside and San Bernardino County line and is bound by the Big and Little Maria Mountains in the south and the Riverside Mountains in the east. The Rice Valley is hydraulically connected to both the Ward Valley to the northwest and the Vidal Valley to the northeast. Precipitation in the surrounding mountains provides the Rice Valley with water. Surface water runoff of mountain precipitation flows through washes and infiltrates into the alluvium-filled valley. The Rice Valley is topographically closed and is within an area of internal drainage, with no perennial streams. No permanent residents inhabit Rice Valley.

The project is within the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB). Under the CRBRWCQB's Water Quality Control Plan, the project site is within the Rice hydrologic unit in the Hayfield Planning Area (HPA). The State Water Plan further identifies the project as being within the Rice Detailed Analysis Unit of the Chuckwalla Planning Area (CPA). The boundaries for Rice hydrologic unit of the HPA and the CPA are identical.

The RSEP site is located in the north central portion of the Rice Valley Groundwater Basin. This basin has relatively little groundwater recharge and little existing groundwater use. The Rice Valley Groundwater Basin is neither adjudicated nor managed by a water master or special district. The project can exercise overlying water rights for its water supply by obtaining a well installation permit from the Riverside County Department of Health Services. (Exs. 1, pp. 5.15.-1, 5.15-2, 5.15-7 -5.15-8; 200, p. 6.9-10.)

Groundwater is the primary natural water supply to the Rice Valley region. Two known water-bearing zones were identified by the applicant, the upper unconfined aquifer, less than 400 feet below ground surface (bgs), and the lower confined aquifer, more than 600 feet bgs. (Ex. 200, p. 6.9-13.) Transmissivity within the lower alluvial water-bearing unit, estimated from well tests, is approximately 5,000 gallons per day per foot (gpd/ft), drawing up to 89 percent from 625 to 785 feet bgs (WP, 2009). The storage capacity on the California side groundwater basin is estimated to be between 125,000 and 2,280,000 acre-feet (af). Various reports indicate that groundwater level trends in the basin are stable and that the basin is not in overdraft and groundwater storage has remained stable for the period of record. (Ex. 200, pp. 6.9-13 - 6.9-14.)

**Soil and Water Resources Figure 1** below shows the project site in relation to regional surface water resources **Soil and Water Resources Figure 2** below shows the project site in relation to regional groundwater resources.

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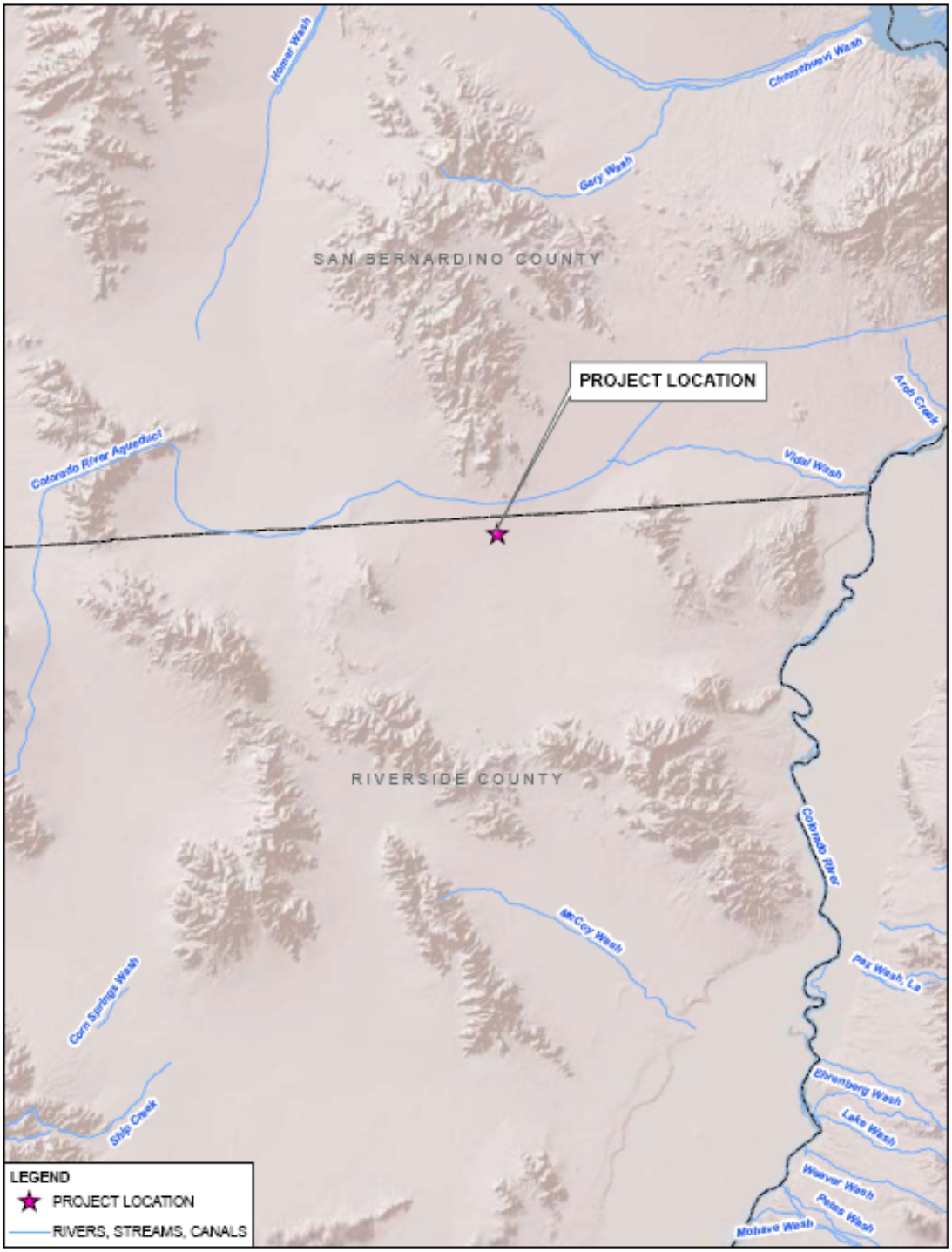
**Soil and Water Resources Figure 1**
**Surface Water Resources**




Notes:
1. U.S Geological Survey along with U.S Environmental Protection Agency, 2006.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

0 4 8
Miles

FIGURE 5.15-1
SURFACE WATER RESOURCES
RICE SOLAR ENERGY PROJECT
*RIVERSIDE COUNTY, CALIFORNIA*

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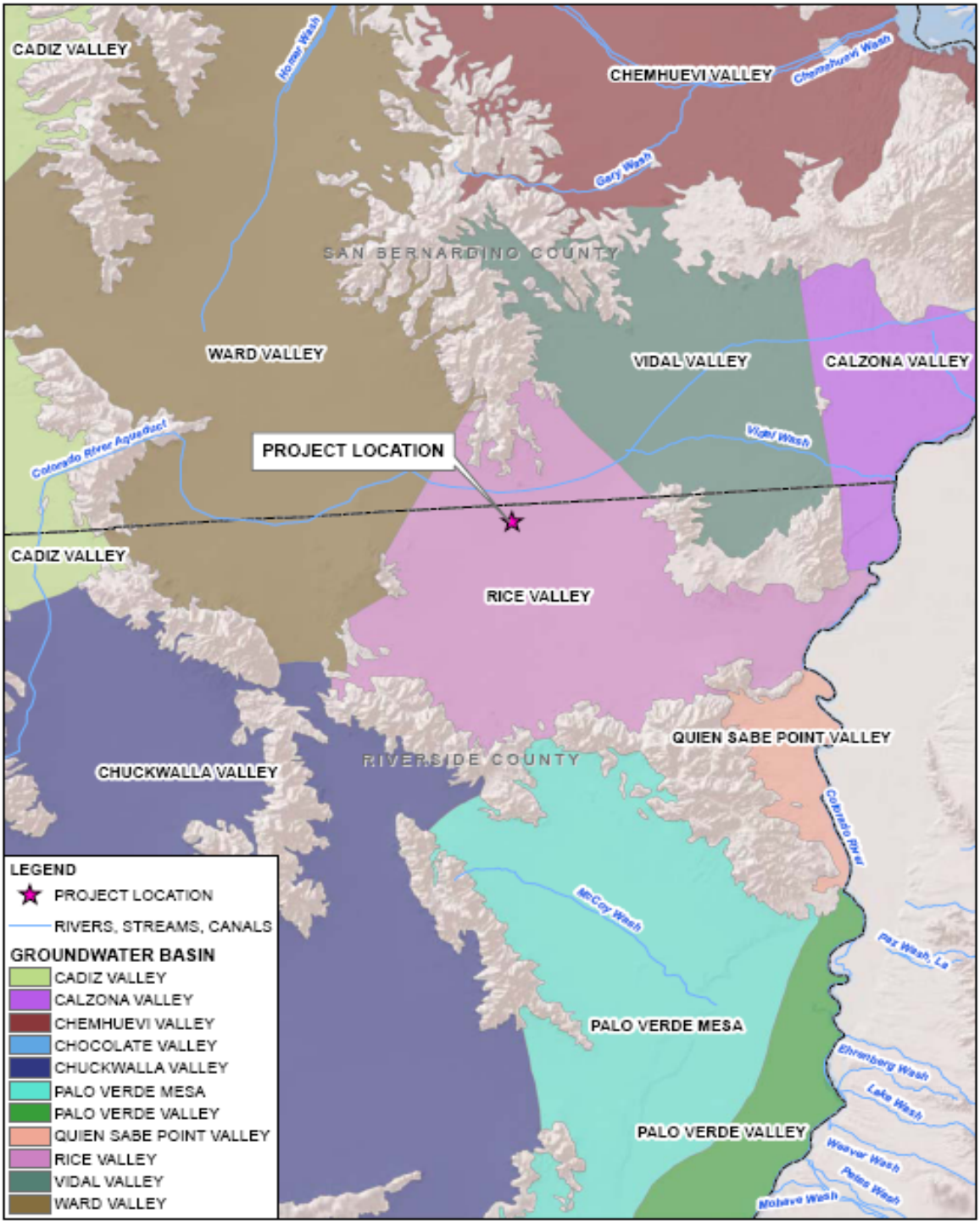
**Soil and Water Resources Figure 2**
**Regional Groundwater Resources**




Notes:
1. The Department of Water Resources, Groundwater Basin Map, 2004

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 5.15-2
GROUNDWATER RESOURCES
RICE SOLAR ENERGY PROJECT
*RIVERSIDE COUNTY, CALIFORNIA*

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2. Storm Water and Drainage

The RSEP will be sited within a previously modified drainage shed and will be constructed in the same location as the former Rice Army Airfield. Directly north of the proposed location and north of SR 62 is a railroad currently owned by the Arizona and California Railroad Company. Water is channeled beneath the railroad tracks by diversion dikes built to capture runoff from the Turtle Mountains. The nearby Colorado Aqueduct is immediately up gradient of the railroad and has its own set of dikes that capture all runoff up-gradient of SR 62 and channel it across the road to the south and on to the project site. (Ex. 200, p. 6.9-12.)

The existing storm water flow across the proposed project is generally from north to south and flows toward the Rice Valley dry playa. Storm water is conveyed across the site through an extensive network of ephemeral drainages with an average slope length of two percent. During major storm events, the ephemeral washes can flow for periods of a few hours to 24-hours with the possibility of flash floods and mass wasting.

The Applicant determined that the potential storm water capture area for the project is 4,568 acres. Peak flows were calculated based on the 100-year, 24-hour event. (Ex. 200, p. 6.9-16.)

The Applicant prepared a draft drainage plan as shown in **Soil and Water Resources Figure 3.**

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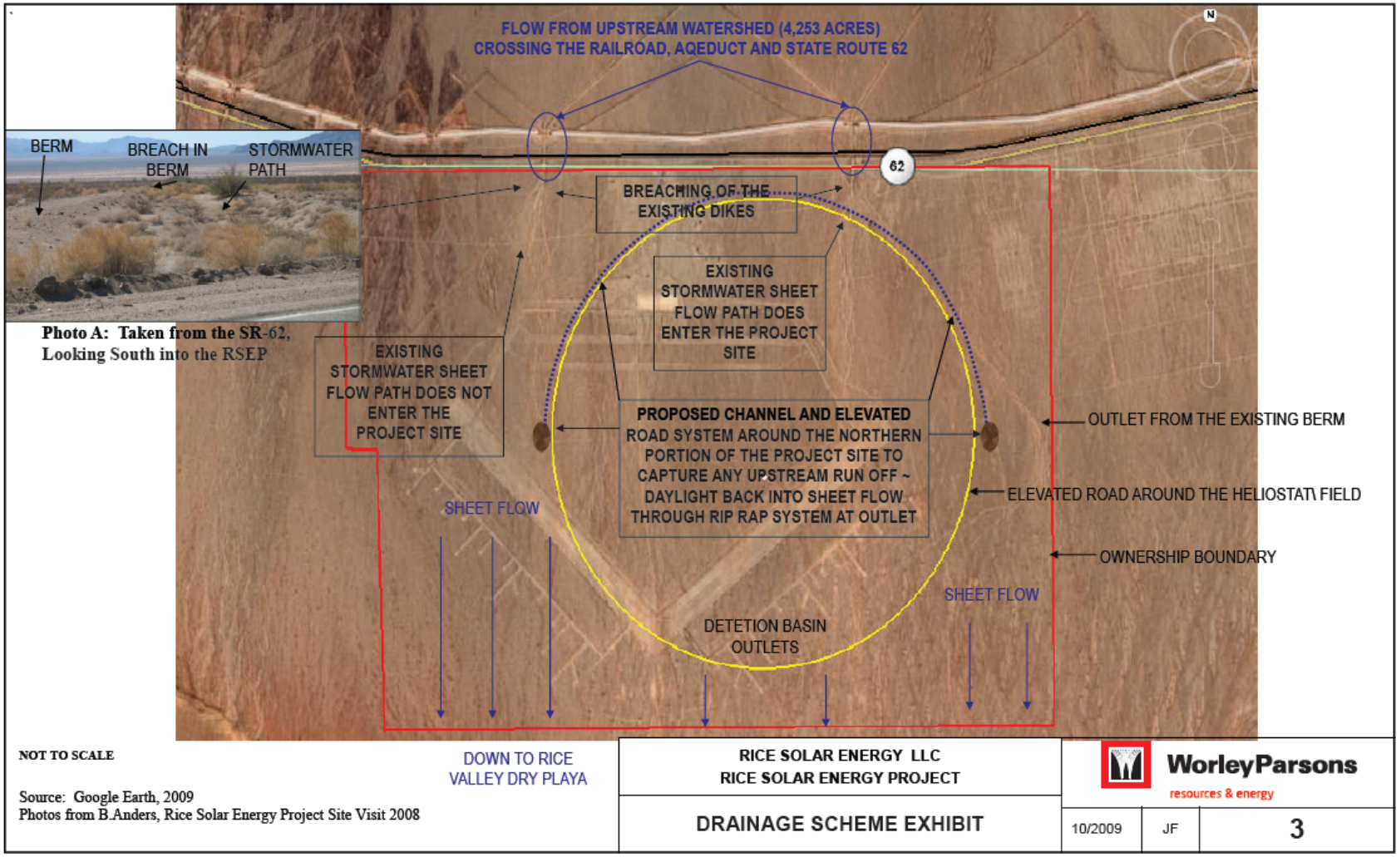
## SOIL AND WATER RESOURCES - FIGURE 3
## Rice Solar Energy Project - Proposed Drainage Plan



In summary, under this plan, runoff received from the north of SR 62 will be diverted outward and away from the site's eastern boundary by re-establishing the 1940s-era diversion dike. On-site runoff would only be contained in areas where rainwater could be exposed to contaminants. The heliostat field runoff will discharge freely with minimal concentration. Runoff generated between SR-62 and the site will be conveyed around the site's perimeter by a natural bottom channel. (Ex. 200, p. 6.9-11.)

The RSEP originally included a detention basin to accommodate on-site drainage. Staff required it to be removed from consideration in order to maintain a less than significant impact to "water of the state." The Applicant agreed and the requirement is embodied in Condition of Certification **BIO-22**.

On-site runoff would drain as it would naturally from north to south on the RSEP site.

Furthermore, the Applicant's Drainage Erosion and Sediment Control Plan (DESCP) includes Best Management Practices (BMPs) that will reduce the potential for on-site contaminants coming into contact with storm water. Thus, the Applicant's proposed on-site drainage management design would protect upstream and downstream resources and any potential impacts will be mitigated to less than significant levels with implementation of Staff -proposed Condition of Certification **SOIL&WATER-1**, which was created in consultation with the State Water Resources Control Board (SWRCB). Under this Condition, the project owner must obtain (before site mobilization) Compliance Program Manager (CPM) approval for a site specific DESCP that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan must address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities.

Regarding off-site drainage, the Applicant proposes to use two earthen-bottomed and soil cemented drainage channels to intercept storm water run-on from the northern site boundaries and convey it around the project through the channels. Staff determined that the proposed drainage diversion allows a historically similar volume of water and sediment conveyance to and around the site perimeter. Storm water entering the diversions from upstream areas is already saturated with sediment and has limited ability to acquire more sediment. Thus, sediment loss or gain would be minor. The evidence also establishes that the proposed diversions will adequately convey run-on around the project and will return flow to

its upstream volume and flow rate prior to discharge, without affecting upstream or downstream resources. (Ex. 200, pp. 6.9 18 - 6.9-19.)

We find that off-site impacts will not result in significant impacts with implementation of **SOIL&WATER-1** and **-3**. **SOIL&WATER-1** is discussed above. **SOIL&WATER-3** requires the project owner to develop and implement a Channel Maintenance Program) that provides long-term guidance to implement routine channel maintenance projects and to comply with **SOIL&WATER-1** in a feasible and environmentally-sensitive manner.

Finally, the evidence establishes that there are no nearby waterways that have the potential to be inundated by on-site of off-site stormwater flow; therefore, there will be no discharge of stormwater to any nearby waterways, and no impacts on waterways from stormwater runoff and drainage will occur. (Ex. 1, p. 5.15-17.)

3. Soil Erosion Due to Water and Wind

Construction activities can adversely impact soil resources by increasing soil erosion, soil compaction, loss of soil productivity, and disturbance of soils crucial for supporting vegetation and water dependant habitats. Activities that expose and disturb the soil leave soil particles vulnerable to detachment by wind and water.

Soil erosion results in the loss of topsoil and increased sediment loading to nearby receiving waters. (Ex. 200, p. 6.9-19.) The magnitude, extent, and duration of those impacts depends on several factors, including the proximity of the RSEP site to surface water and dunes, the soil types affected, and the method, duration, and time of year of construction activities. (Ex. 200, pp. 6.9-13, 6.9-19.)

The Applicant used the Revised Universal Soil Loss Equation, version 2 (RUSLE2) to estimate potential soil loss on site during both construction and operations. The evidence describes the Applicant's site soil classification process and indicates that the site soils are primarily classified as hydrologic group A soils, which are expected to have rapid permeability rates and lower rates of runoff.

The Applicant's analysis shows that in its undisturbed state, the project area could lose approximately 21 tons/acre/year due to water erosion. During the

proposed 30-month construction period, soil loss could be reduced to approximately 1.12 tons/acre/year if the project applies effective sediment and erosion control BMPs during construction. The project could achieve even lower rates of erosion during the operation phase by containing of on-site storm water. (Ex. 200, pp. 6.9-19 – 6.9-20.)

Staff's worst-case scenario evaluation of wind erosion rates predicts that under existing conditions, the wind erosion rate is 315 tons/acre/year and is 342 tons/acre/year during construction. Regular applications of dust palliatives and water would reduce wind erosion and related soil loss to 264 tons/acre/year. These losses will be further reduced to 13 tons/acre/year during operations with implementation of the Applicant's proposed Best Management Practices and the Conditions of Certification. (Ex. 200, p. 6.9-20, Table 4.)

The Applicant's draft project grading plan and Storm Water Pollution Prevention Plan (SWPPP) includes BMPs for construction- and operation-related wind and water erosion. The elements of the SWPPP are also contained in the Applicant's proposed DESCP. The DESCP includes temporary and permanent BMPs. These measures include applying water or soil binders to the roads in active construction and laydown areas; controlling speed on unpaved surfaces; installing stabilized entrances/exits; use of earthen berms, silt fences, or fiber rolls to control sedimentation; and preserving existing vegetation. During grading work, soil will be stabilized by maintaining sufficient water content to make it resistant to weathering and erosion by wind and water. (Exs. 12; 200, pp. 6.9-17, 6.9-20 - 6.9-21.)

Additional BMPs will be described in the Applicant's final DESCP as required by Condition of Certification **SOIL&WATER-1**. (Ex. 200, p. 6.9-21.) We find that implementation of **SOIL&WATER-1** will help conserve soil resources, protect downstream properties and resources, and protect air quality, and reduce construction and operation-related water and wind erosion impacts to less than significant levels. We also note that **Air Quality** Condition of Certification **AQ-SC3** requires an Air Quality Construction Mitigation Plan to prevent significant impacts from fugitive dust and wind erosion during construction. These prevention measures include: employing an on-site mitigation manager, limiting vehicle speed to 10 miles per hour during construction; requiring all unpaved roads, disturbed areas, and linear construction sites to be watered as frequently as necessary during grading and stabilized thereafter with a non-toxic soil stabilizer or soil weighting agent to comply with the dust mitigation objectives;

and establish performance standards for controlling fugitive dust and requirements for response should they be exceeded. (Ex. 200, p. 6.9-19.)

4. Water Supply

Process Water. The Applicant intends to pump groundwater from one of two on-site wells for plant operation needs. (Exs. 1, p. 5.15-8.) The water will be treated (see discussion below) and used for steam-cycle makeup, heliostat washing, testing the molten salt during commissioning, boiler makeup, and domestic needs. (Ex. 1, p. 5.15-8.)

One well will be the primary water source and the other will be a secondary source. The primary well is currently installed. The secondary well will be drilled early in the construction phase. Two wells already exist at the project site: they are referred to as Rice 1 and Rice 2. Rice 1 is in the upper alluvium and is not suitable as a water source because of low yield and high TDS. Rice 2 is in the lower alluvial aquifer and with modifications, can be developed into an adequate water supply together with the newly constructed well. Rice 2 will likely be the secondary well. (Ex. 1, pp. 5.15-8, 5.15-11 and Appendix 5.)

The Applicant's analyses estimate that the amount of process water used by RSEP will be no more than 180 acre-feet per year (AFY), assuming a 37 percent operating capacity factor. (Ex. 1, p. 5.15-8.) The project's projected operation water needs are more particularly identified in **Soil and Water Resources Table 2** below.

**SOIL & WATER Table 2**
**Estimated Annual Operational Water Demands**

| Water Use | Water Source | Approximate Annual Use (AF) |
|---|---|---|
| Heliostat washing | Groundwater Wells | 31 |
| Steam cycle makeup | Groundwater Wells | 31 |
| Potable water | Groundwater Wells | 3 |
| WSAC, other service | Groundwater Wells | 38 |
| Margin | Groundwater Wells | 15 |
| **Avg. Annual Consumption** | -- | **118** |

Source: (SR 2009a).
Note: Based on 3,286 hours of operation per year.

Construction Water. Groundwater from the onsite well will also be used during the 30-month construction period. The grading and heavy site disturbance phase

of construction (approximately 12 months) will use approximately 35 acre-feet per month. Water use will be approximately 24 acre-feet per month during the remainder of the construction period. This equates to a rate of approximately 637 acre-feet per year (AFY) during the first 10 months of construction and about 253 AFY during the remainder of the construction period. (Exs. 1, pp. 5.15-16, 5.15-19; 200, pp. 6.9-21 - 6.9-22.)

**Soil and Water Table 3** below summarizes the rate of water use during construction.

**SOIL & WATER Table 3**
**Estimated Daily and Annual Construction Water Demands**

| Project Phase | Average Annual Construction Water Demand (AFY) | Water Supply Source |
|---|---|---|
| Months 0 - 12 | 420 | Onsite Groundwater Wells |
| Months 13 - 30 | 240 | |

Source: (SR 2009a).
Note: Additional water could be used during construction for hydrostatic testing of the proposed project's piping.

Drinking Water. The RSEP will provide employees with drinking water during construction and operation from the on-site well. The well water must be treated to comply with the California Safe Drinking Water Act requirements. (Ex. 200, p. 6.9-23.)

The RSEP would qualify as a Public Supply System by serving more than 25 people for more than 60 days. The facility would also qualify as a nontransient noncommunity water system, serving 25 persons for over 6 months per year. (*Id*.) Although the Riverside County Department of Environmental Health has delegated authority to regulate RSEP's provision of water, we concur with Staff's recommendation that the project owner obtain a permit to operate a non-transient, non-community water system with the County of Riverside at least 60 days before beginning construction. The requirements are contained in **SOIL&WATER-9**. Implementation of this Condition will ensure that the project satisfies all provisions of Title 22, Section 3, to provide a suitable domestic water supply. (*Id*.)

a. Impacts on Groundwater Quality

Water quality can be impacted by migration of low quality or contaminated water towards pumping wells and by sustained pumping of the groundwater basin. By providing a measure of water salinity, total dissolved solids (TDS) is a primary indicator of the natural quality of groundwater and is a measure of acceptance for the use of groundwater as a drinking water source. Water with TDS concentrations greater than 3,000 mg/l is generally considered undrinkable. In California, the recommended Secondary MCL or 'Consumer Acceptance Contaminant Level' for TDS is 500 mg/l, and upper and short term ranges can be 1,000 and 1,500 mg/l, respectively (DWR 2004).

The natural groundwater quality in the Rice Valley groundwater basin varies widely, but can be characterized as sodium chloride-sulfate or sodium chloride-bicarbonate.

The Applicant conducted a site-specific investigation of two wells, one screened in the upper alluvial aquifer, Rice #1, and the other in the lower confined aquifer, Rice #2. Based on the groundwater investigation, TDS in the project vicinity ranges from 662 to 3,540 milligrams per liter (mg/L). The upper alluvial aquifer contains water with TDS of approximately 3,000 mg/L as indicated from samples of Rice #1. The lower alluvial aquifer contains water with TDS of approximately 900 mg/L as indicated from pump tests of Rice #2.

Based on the pump tests described in the AFC, the project would likely draw water from the lower alluvial aquifer of 885 mg/L TDS, or lower throughout the operational life of the project. A summary of the expected water quality from onsite production wells is contained below in **Soil and Water Table 4.**

**SOIL & WATER Table 4**
**Expected Groundwater Quality**

| Parameter | Concentration |
|---|---|
| Total Dissolved Solids (TDS) | 880 mg/L |
| Hardness as $CaCO_3$ | 142 mg/L |
| Copper | <0.011 mg/L |
| Iron | <0.064 mg/L |
| Chlorides | 508 mg/L |
| Specific Conductance | 2,010 µS/cm |
| pH | 8.3 |

Source: (SR 2009a).
Note: mg/L = milligrams per liter; µS/cm = microsiemens per centimeter.

Based on the Applicant's pumping results, Staff assessed the extent of communication between the aquifers and of project pumping impacts. Staff determined that the pumping would create an increased downward gradient from the upper alluvium towards the lower confined aquifer. However, Staff also concluded that the confining unit is sufficiently thick (150-300 feet) and of low enough hydraulic conductivity that induced flow of lesser quality water into the lower alluvial unit is negligible in volume. Assuming the aquatard has a storativity less than that of the lower aquifer (0.0001 assumed by applicant), Staff estimated that the volume induced through the confining layer would be less than 5 AF/y. Further, assuming the accuracy of Staff's estimate of the volume of stored water in the lower confined aquifer, at approximately 2,280,000 AF, Staff ultimately concluded that the proportion of water flow induced from the upper confining layer even if high in TDS would not cause significant degradation to the lower aquifer.

Thus, the evidence indicates that project pumping will not result in significant adverse impacts to groundwater quality. However, the limited available data about the groundwater basin, the nature and extent of the regional aquifer system, the extent of the confining layer, and the unknown distribution of water quality, project pumping could induce flow of an unknown quality from an unknown source outside the Rice groundwater basin. We therefore require the Applicant to monitor the water quality to in the on-site extraction wells, and collect water samples semi-annually and report the results annually to the Energy Commission as specified in Condition of Certification **SOIL&WATER-6**.

b. Impacts on Wells

We evaluate potential changes in groundwater levels from project pumping to determine whether drawdown or a decrease in groundwater levels would result from project pumping even though there is no known pumping in Rice Valley.
The evidence indicates that there are no wells within 0.5 miles of the project site. Thus, the Applicant identified all wells within five miles of the project. None are currently being pumped.

Both the Applicant and Staff ran models to determine the drawdown in groundwater levels. Their respective modeling analyses were based on very limited groundwater level data for the Rice Basin and different underlying assumptions about the aquatard separating the surface and deep aquifers.

The Applicant estimates projected offsite drawdown at the end of the 30-month construction period to range from about two to three feet near the project site boundary and to decrease to less than one foot at a distance of one to three miles from the site. It further estimates projected drawdown after five and 30 years to be one foot near the site boundary and decreasing farther away.

With respect to the 12 wells identified in the project vicinity, seven are screened only in the upper alluvium. (Ex. 1, p. 5.15-20.) The Applicant expects the drawdown impact on these shallow wells from project pumping to be negligible. The five other wells are of unknown depth and could potentially be screened in the lower alluvial aquifer. The Applicant estimates that the potential drawdown effect on these wells, assuming they are screened in the lower alluvium, will be approximately one foot or less during construction and less than 0.5 feet during operation. (Ex. 1, p. 5.15-20.) According the Applicant, this amount of drawdown will not result in wells becoming unusable or significantly diminishing in capacity, and would not cause significant increases in well electrical use or maintenance requirements.

Staff's modeling resulted in estimates that roughly double the Applicant's estimates (approximately 3.53 ft vs. about 1.8 ft). Staff concluded that the predicted drawdown would not have a significant impact on other groundwater users in the basin. Staff's methodology and assumptions are detailed in the record. Thus, the evidence establishes that project pumping is not likely to result in significant impacts to Rice Valley wells.

Although there is no potential for significant impacts due to lower groundwater levels, we concur with Staff's determination that given the limited data available for analysis of groundwater impacts it is important that we take steps to protect limited and precious desert groundwater resources for further and future beneficial uses. We therefore adopt Staff-proposed Condition of Certification **SOIL&WATER-6,** which requires the project owner to monitor groundwater levels and evaluate whether there is any significant change in levels due to project pumping as predicted by the model and whether there would be affects to future use.

c. Impacts to the Basin Balance

Estimating groundwater recharge is critical to estimating the balance of groundwater available for development in a given basin without causing significant impacts to basin storage. However, as explained by the evidence of

record, there is little known about the Rice Valley groundwater budget. In fact, DWR classifies the basin as "Type C," meaning it has a poorly understood groundwater budget.

Based on limited and sometimes conflicting resources, the Applicant and Staff conducted independent modeling to estimate groundwater recharge in the Rice Valley. As shown by the values presented below in **Soil and Water Resources Table 5**, the Applicant and Staff reached different conclusions. However, as evidenced by extensive discussion and analysis in the record regarding methodologies and assumptions, the Applicant's and Staff's differing estimates are reasonable and well supported by opportunities for underflow-outflow at the northeastern and southeastern basin boundaries. Staff evaluation relies in part on the Applicant's data.

**SOIL & WATER Table 5**
**Groundwater Recharge Estimates Summary**

| Method | Estimate Basis | Source | Estimated Groundwater Recharge (AFY) |
|---|---|---|---|
| Modified Hely and Peck[1] | Rainfall | Applicant | 1,160 |
| Unknown | Underflow* | DWR | 500 |
| Regional Data/Percentage[2] | Rainfall | CEC Staff | 468 |
| Modified DWR[3] | Underflow* | Applicant | 394 |
| Modified Maxey-Eakin[4] | Rainfall | CEC Staff | 159 |

Sources: 1. AFC, 2010; 2. Bedinger et al., 1989; 3. (SR 2009a); 4. Donovan and Katzer, 2000, Metzger et al., 1973.
*Documentation of estimation method is unavailable.

We elect to base our evaluation here on Staff's estimates as they contemplate a worst-case scenario for groundwater recharge, by assuming that the lower bound averages for annual precipitation in each zone and by assuming minimal percentage of precipitation goes to recharge of the confined aquifer. Staff estimated groundwater recharge in the Rice Valley based on available studies of recharge in the Sonoran Desert Region and the Basin and Range geologic province. Staff used two methodologies, which are explained by the evidence. Under one methodology, 159 AFY is Staff's lower bound estimate for possible recharge to Rice Valley. Under the other, the resulting upper bound estimate is 468 AFY.

**Soil and Water Resources Table 6** below presents Staff's estimates of existing basin balance conditions and conditions during RSEP construction and operation.

**SOIL & WATER Table 6**
**Rice Valley Groundwater Basin Balance**

| Basin Inflows and Outflows | Pre-Development Basin Balance | Post Development Basin Balance | |
|---|---|---|---|
| | | Construction | Operation |
| Inflows (AFY) | | | |
| Recharge[1] | 159 to 468 | 159 to 468 | 159 to 468 |
| Outflows (construction, AFY) | | | |
| Groundwater Pumping | | | |
| Earth Moving | 0 | 0 - 350 | - |
| Dust Control | 0 | 170 | - |
| Backfill | 0 | 24 | - |
| 25% Contingency | 0 | 59 | - |
| Outflows (operation, AFY) | | | |
| Groundwater Pumping | | | |
| Heliostat Wash | 0 | - | 31 |
| Steam cycle makeup | 0 | - | 31 |
| Potable water | 0 | - | 3 |
| WSAC and other service | 0 | - | 38 |
| Contingency | 0 | - | 15 |
| *Total Groundwater Pumping (AFY, average)* | 0 | 300[2] | 118[2] |
| Basin Balance (AFY) | 159 to 468 | - 141 to 168 | 41 to 350 |

Notes: 1. Recharge estimates encompass a range determined by Staff.
2. All pumping volumes are from the AFC.

The storage capacity on the California side of the valley of the Rice Valley groundwater basin is estimated to be between 125,000 and 2,280,000 acre-feet (AF). (Ex. 200, p. 6.9-14.) The evidence further establishes that aquifer storage is the only possible source for any extracted water. Given the total volume pumped by the plant for the lifetime of the project would be about 5,250 AF and the lowest estimates that could be found of the total storage volume of the Rice Aquifer, the Applicant's use of total basin storage would be minimal and not cause an adverse impact on the stored volume of the aquifer. (Ex. 200, p. 6.9-28.)

Even though we find that the project will not result in significant adverse impacts to the groundwater basin balance, we are concerned about the lack of information available about Rice Valley and how this dearth impacts the range of reasonable estimates for recharge to groundwater. To ensure that the RSEP's water use is consistent with the volume of groundwater use analyzed by Staff, we adopt Condition of Certification **SOIL&WATER-5**. This Condition limits the project's use of groundwater for all construction activities to an average rate of 420 acre-feet per year of construction and use of groundwater for all operations activities to 150 acre-feet per year. And, given that there are variations in the

natural environment that could affect the results predicted by a groundwater model we adopt Condition of Certification **SOIL&WATER-6**, which requires the project to establish a groundwater monitoring network and monitor and document groundwater use, groundwater levels, and groundwater level trends. This condition of certification would provide a baseline of groundwater elevations and groundwater elevation trend to identify potential future changes to groundwater elevations owing to the project's pumping.

5. Water Treatment

Groundwater will be treated onsite through a multiple step process including multimedia filters utilizing a coagulant, reverse osmosis, and electro-deionization. (Ex. 200, p. 6.9-14.)

6. Wastewater

Both domestic/sanitary wastes and industrial process wastewater would be generated by construction and operation of the proposed RSEP. During construction, sanitary wastes would be managed using portable toilets and showers, with collected wastes trucked offsite for disposal. A temporary septic tank and leach field may also be used near the construction trailers and crew parking and housing areas. (Ex. 200, pp. 6.9-15, 6.9-33 – 6.9-34.)

During operation, the RSEP would manage domestic/sanitary wastes through the use of two separate septic systems: one located near the facility's main entrance that would service the administration building and workshop; and one located within the facility power block that would be connected to the control and operations building.

The use of septic tanks and leach fields for onsite treatment and disposal of domestic wastes is an established practice. However, improper construction and operation of these systems may adversely impact nearby surface and ground waters. To ensure protection of human health and the environment from improper disposal of sewage, Riverside County adopted Ordinance 650 (Chapter 8.124 of the Riverside County Code) establishing specific requirements for the discharge of sewage within the unincorporated areas of the County. Included in the requirements are soil percolation standards; minimum separation/set back distances to prevent impacts to groundwater and nearby water wells; and septic tank and leach field design, sizing and construction standards to ensure adequate capacity and proper treatment and disposal of the wastewaters. The

County Code also requires persons constructing septic systems to apply for a permit for the construction and operation of the system. (Ex. 200, p. 6.9-34.)

The evidence, including the Applicants Conceptual Septic System design and Layout Memorandum, establish that no significant adverse impacts to soil and water resources are anticipated from construction and operation of the project septic systems. (Ex. 200, p. 6.9-34.) However, consistent with the Commission in-lieu permit provisions, we adopt Staff-proposed Condition of Certification **SOIL&WATER-8**, which explicitly require compliance with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (California Code of Regulations Title 24, Part 5) for all project sanitary waste disposal facilities, such as septic systems and leach fields. Adoption of Condition of Certification **SOIL&WATER-8** will ensure compliance with LORS and, through the protectiveness provided by the County regulatory standards, will reduce potential impacts from project septic systems to a less than significant level.

Industrial process wastewaters generated during facility operation and water collected in equipment drains within the power block would be discharged to three five-acre, lined evaporation ponds located at the southern end of the project site, just outside the heliostat field. A system of floor drains, hub drains, sumps, and piping would collect containment area wash down and storm water from facility areas within the power block. Water from these areas would be collected and then routed to a wastewater collection system with an oil/water separator. Effluent from the oil/water separator would then be discharged to the evaporation ponds. (Ex. 200, pp. 6.9-15, 6.9-32.)

The wastewater discharged to the evaporation ponds is anticipated to be non-hazardous; however, it would contain pollutants that could potentially exceed water quality objectives or affect the beneficial uses of ground water, if released. Therefore, the wastewater is classified as a “designated waste” in accordance with California Code of Regulations, Title 27, Chapter 3, Subchapter 2, Article 2, Section 20210. (*Id*.) Such discharges are regulated by the State and Regional Water Boards. The Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) has jurisdiction over the area where the RSEP will be located. Normally the CRBRWQCB would evaluate the proposed discharge and issue Waste Discharge Requirements (WDRs) setting forth the conditions under which the discharge would be allowed. However, under the Warren-Alquist Act (Pub. Resources Code § 25500), the Energy Commission performs this function for power plant siting certification proceedings.

Staff coordinated environmental review of the RSEP project (including a draft Report of Waste Discharge) with the State Water Board and CRBRWQCB. Water Board staff reviewed the project ROWD and the proposed waste discharge for compliance with waste management and water quality protection standards, and provided to the Energy Commission draft waste discharge requirements for the project evaporation ponds. These requirements are included as Appendices A and B to this Section.

As specified in Appendix A, WDRs for the evaporation ponds, including information describing the environment and waters potentially impacted by the discharge, the anticipated waste streams, the proposed design of the ponds, and the discharge specifications, prohibitions, and provisions deemed necessary by the CRBRWQCB. The WDRs include requirements for implementation of a monitoring and reporting program (including development of a groundwater monitoring network). They also include a requirement for establishment of a bond or other financial assurance mechanism to be used by the Energy Commission for cleanup and remediation of any wastewater releases in the event that the project owner fails to perform that duty for whatever reason.

Appendix B includes the required Monitoring and Reporting Program for the evaporation ponds. It establishes how and when the project would monitor the discharge and operation of the ponds to both document and prevent unauthorized releases of wastewater.

We find that the requirements set forth in Appendices A and B establish a comprehensive set of standards, specifications, and prohibitions that are designed to protect the waters of the state from any potential adverse impacts associated with onsite management of project wastewaters. We therefore, require their implementation by compliance with Condition of Certification **SOIL & WATER-2**.

7. Flooding Potential

The RSEP footprint, including the utility lines, is within an area designated by the Federal Emergency management Authority (FEMA) as Zone D. Zone D designations are used for areas where there are possible but undetermined flood hazards. In areas designated Zone D, FEMA has not conducted flood hazards analyses.

Furthermore, project implementation will not result in any structures that will impede or redirect flood flows or cause inundation by seiche, tsunami, or mudflow. (Exs. 1, pp. 5.15-8, 5.15-22, 200, p. 6.9-12.)

Thus, we find that the project has no potential flooding impacts to water resources.

8. Cumulative Impacts

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, § 15064(h), 15065I, 15130, and 15355.)

If cumulative impacts to soil and water resources were to occur as a result of the proposed project, they would occur within the Rice Valley Groundwater Basin or within the Rice Valley Watershed or Sub-Watershed. But, the evidence shows that there are currently no facilities or projects within 15 miles of the vicinity that could significantly impact soil or water resources. Nor are there any reasonably foreseeable projects within the vicinity to cause an impact to soil or water resources. As discussed above, with implementation of the Conditions of Certification, the RSEP will not contribute significantly to the environmental condition of soil and water resources due to existing projects in the area. More particularly, the RSEP would have little or no adverse impact on water quality, availability, or stormwater runoff and erosion. The use of BMPs to control stormwater drainage during all phases of the project will ensure that the RSEP will have no significant adverse impact on water quality during construction or operation. (Exs. 1, 5.15-22, 200, p. 6.9-40.)

We therefore find that RSEP will have no cumulatively considerable impacts on soil and water resources.

10. Compliance with LORS

RSEP's compliance with LORS ensures the most appropriate use and management of both soil and water resources. The requirements of these LORS (identified in **Appendix A** to this Decision) are intended to protect human health and the environment. We find that the project's implementation of the Conditions of Certification will ensure LORS compliance.

## FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The RSEP will not significantly increase or decrease erosion rates within its watershed, if Condition of Certification **SOIL&WATER-1** and **-3** are implemented as proposed during construction and operation. Staff sought input and guidance from the State Water Resources Control Board (SWRCB) to develop these Conditions.

2. With implementation of BMPs as detailed in the DESCP (see Condition of Certification **SOIL&WATER-1**), erosion will be mitigated to a less than significant level.

3. Adherence to the procedures in the Condition of Certification **SOIL & WATER-1** (including the construction DESCP) and related CWA/NPDES permit requirements will avoid significant soil erosion and subsequent sedimentation during construction, conserve soil resources, maintain water quality, and prevent accelerated soil loss.

4. Pursuant to Condition of Certification **SOIL&WATER-5,** the proposed project's use of groundwater for all construction activities shall not exceed an average rate of 420 acre-feet per year of construction and the use of groundwater for all operations activities shall not exceed 150 acre-feet per year.

5. The limited data available for analysis of the Rice Valley Groundwater Basin indicate the proposed use of groundwater would not significantly impact groundwater levels in the basin, the basin balance, or quality of groundwater in the basin. Given the limited data staff has proposed Condition of Certification **SOIL&WATER-6** to establish pre-construction and project related groundwater quality and groundwater elevation levels that can be quantitatively compared against observed and simulated levels from project pumping to ensure there are no impacts to the groundwater basin as a result of project pumping.

6. The proposed method of sanitary wastewater disposal by a septic system and leach field would have no significant impacts provided the requirements of Condition of Certification **SOIL&WATER-8** are met.

7. The SWRCB developed waste discharge requirements for the disposal of industrial wastewater in evaporation ponds. Staff proposes that the Applicant comply with these requirements as proposed in Condition of Certification **SOIL&WATER-2**.

8. The project can exercise overlying water rights for its water supply by obtaining a well installation permit from the Riverside County Department of Health Services.

9. RSEP will have no cumulatively considerable impacts on soil and water resources.

## CONCLUSION OF LAW

1. With implementation of the Conditions of Certification listed below, the RSEP project will comply with all applicable LORS, and will not result in any unmitigated and significant direct, indirect or cumulative adverse impacts related to Soil or Water Resources.

## CONDITIONS OF CERTIFICATION

### DRAINAGE EROSION AND SEDIMENTATION CONTROL PLAN

**SOIL&WATER-1:** Prior to site mobilization, the project owner shall obtain the CPM's approval for a site specific DESCP that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities. The project owner shall complete all engineering plans, reports, and documents necessary for the CPM to conduct a review of the proposed project and provide a written evaluation as to whether the proposed grading, drainage improvements, and flood management activities comply with all requirements presented herein. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and shall contain the following elements:

**Vicinity Map:** A map shall be provided indicating the location of all project elements with depictions of all major geographic features to include watercourses, washes, irrigation and drainage canals, major utilities, and sensitive areas.

**Site Delineation:** The site and all project elements shall be delineated showing boundary lines of all construction areas

and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale

**Drainage:** The DESCP shall include the following elements:

a. Topography. Topography for off-site areas to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist.

b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of on-site ephemeral washes, drainage ditches, and tie-ins to the existing topography.

c. Hydrology. Existing and proposed hydrologic calculations for on-site areas and off-site areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow.

d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the on-site drainage network, diversion facilities and BMPs.

**Watercourses and Critical Areas:** The DESCP shall show the location of all on-site and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood prone areas.

**Clearing and Grading:** The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross-sections, cut/fill depths or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCP shall include a statement of the quantities of material excavated at the site, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a

statement explaining that there would be no clearing and/or grading conducted for each element of the project. Areas of no disturbance shall be properly identified and delineated on the plan maps.

**Soil Wind and Water Erosion Control:** The plan shall address exposed soil treatments to be used during construction and operation of the proposed project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed project site that would not cause adverse effects to vegetation; BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.

**Project Schedule:** The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element construction, and final grading/stabilization). BMP implementation schedules shall be provided for each project element for each phase of construction.

**Best Management Practices:** The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

**Erosion Control Drawings:** The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion-control specialist.

**Agency Comments:** The DESCP shall include copies of recommendations from the County of Riverside and RWQCB, if applicable.

**Monitoring Plan:** Monitoring activities shall include routine measurement of the volume of accumulated sediment and scour in storm water diversions channels. The monitoring plan shall be part of the channel maintenance plan in Condition of Certification SOIL&WATER**-3.**

**Verification:** The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCP shall be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:

1. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESCP to Riverside County and the RWQCB for review and comment. The CPM shall consider comments received from Riverside County and RWQCB and approve the DESCP.
2. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage, erosion, and sediment control measures and the results of monitoring and maintenance activities.
3. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.
4. Provide the CPM with two (2) copies each of all monitoring or compliance reports.

## WASTE DISCHARGE REQUIREMENTS

**SOIL&WATER-2:** The Project Owner shall comply with the requirements specified in Appendices B and C, and any updates to these Waste Discharge Requirements that may be required as the project design is refined. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"), for the discharge to evaporation ponds. It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The Project Owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees,

consistent with Public Resources Code Section 25531, subdivision (c).

**Verification:** No later than sixty (60) days prior to any wastewater discharge, the RSEP project shall provide documentation to the CPM, with copies to the Colorado River Basin RWQCB, demonstrating compliance with the WDRs established in Appendices B and C, including any updates that may be required as the project design is refined. Any changes to the design, construction, or operation of the ponds shall be requested in writing to the CPM, with copies to the Colorado River Basin RWQCB, and approved by the CPM, in consultation with the Colorado River Basin RWQCB, prior to initiation of any changes. The RSEP project shall provide to the CPM, with copies to the Colorado River Basin RWQCB, all monitoring reports required by the WDRs, and fully explain any violations, exceedances, enforcement actions, or corrective actions related to construction or operation of the ponds, treatment units, or storm water system.

**CHANNEL MAINTENANCE PROGRAM**

**SOIL&WATER-3:** The project owner shall develop and implement a Channel Maintenance Program (Program) that provides long-term guidance to implement routine channel maintenance projects and to comply with **SOIL&WATER-1** in a feasible and environmentally-sensitive manner. The Program will be a process and policy document prepared by the project owner, reviewed by the CPM. The Channel Maintenance Program shall include the following:

A. Purpose and Objectives – establishes the main goals of the program, of indefinite length, to maintain channels to meet their original design capacity for flood protection and conveyance, and maintain groundwater recharge.

B. Application and Use - The channel maintenance work area is defined as the RSEP engineered channels, typically extending to the top of bank, include access roads, and any adjacent property that the RSEP owns or holds an easement for access and maintenance. The program would include all channel maintenance as needed to protect the RSEP facilities and downstream property.

C. Channel Maintenance Activities

1. Sediment Removal - sediment is removed if it: (1) reduces the effective flood capacity, to less than the design discharge, (2) prevents appurtenant hydraulic structures from functioning as intended, and (3) becomes a permanent, non-erodible barrier to instream flows.

2. Vegetation Management - manage vegetation in and adjacent to the channels to maintain hydraulic capacity. Vegetation management shall include control of invasive or nonnative vegetation.

3. Bank Protection and Grade Control Repairs – Bank protection and grade control structure repairs involve any action by the project owner to repair eroding banks, incising toes, scoured channel beds, as well as preventative erosion protection. The project owner would implement instream repairs when the problem: (1) causes or could cause significant damage to the RSEP project; adjacent property, or the structural elements of the channels; (2) is a public safety concern; (3) negatively affects groundwater recharge; or (4) negatively affects the mitigation vegetation, habitat, or species of concern.

4. Routine Channel Maintenance - trash removal and associated debris to maintain channel design capacity; repair and installation of fences, gates and signs; grading and other repairs to restore the original contour of access roads and levees (if applicable).

D. Related Programmatic Documentation – the CPM will review and approve the Program documentation.

E. Channel Maintenance Process Overview

1. Program Development and Documentation – This documentation provides the permitting requirements for channel maintenance work in accordance with the conditions of certification for individual routine maintenance of the engineered channel without having to perform separate CEQA review or obtain permits.

2. Maintenance Guidelines - based on two concepts: (1) the maintenance standard and (2) the acceptable maintenance condition, and applies to sediment removal, vegetation management, trash and debris collection, blockage removal, fence repairs, and access road maintenance.

3. Implementation – Sets Maintenance Guidelines for vegetation and sediment management. Maintenance Guidelines for sediment removal provide information on the allowable depth of sediment for the engineered channel that would continue to provide design discharge protection.

4. Reporting – the CPM requires the following reports to be submitted each year as part of the Annual Compliance Report:
    a. Channel Maintenance Work Plan - Describes the planned “major” maintenance activities and extent of work to be accomplished; and
    b. Channel Maintenance Program Annual Report – Specifies which maintenance activities were completed during the year including type of work, location, and measure of the activity (e.g. cubic yards of sediment removed).

**Verification:** At least 60 days prior to the start of any project-related site disturbance activities, the project owner shall coordinate with the CPM to develop the Channel Maintenance Program. The project owner shall submit two copies of the programmatic documentation, describing the proposed Channel Maintenance Program, to the CPM (for review and approval). The project owner shall provide written notification that they plan to adopt and implement the measures identified in the approved Channel Maintenance Program. The project owner shall:

1. Supervise the implementation of a Channel Maintenance Program in accordance with conditions of certification;
2. Ensure that the RSEP Construction and Operations Manager receive training on the Channel Maintenance Program;
3. As part of the RSEP Annual Compliance Report to the CPM, submit a Channel Maintenance Program Annual Report specifying which maintenance activities were completed during the year including type of work, location, and measure of the activity (e.g. cubic yards of sediment removed).

## PROJECT GROUNDWATER WELLS

**SOIL&WATER-4:** Pre-Well Installation. The project owner shall construct and operate up to two on-site groundwater wells that produce water from the Rice Valley Groundwater Basin. The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction requirements. Prior to the start of well construction activities, the project owner shall submit for review and comment a well construction packet in accordance with Riverside County Ordinance 682, containing the documentation, plans, and fees normally required for the county’s well permit, with copies to the CPM. The project shall not construct a well or extract and use groundwater until the CPM provides approval to construct and operate the well.

Post-Well Installation. The project owner shall provide documentation to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed.

Groundwater Well Abandonment. On property controlled by the project owner, the project owner shall protect groundwater resources by abandoning all groundwater wells that are constructed in such a manner that the screen interval of the well intercepts poor quality and better quality aquifer water. Alternatively, wells that are otherwise in good condition may be modified, if feasible, such that the screen interval does not cross connect zones of varying water quality. Groundwater wells shall be abandoned or modified in accordance with all applicable state and local water well abandonment or construction requirements, including the California Department of Water Resources Bulletins 74-81 & 74-90. Prior to the start of well construction activities, the project owner shall submit for review and comment, a well abandonment or modification packet to Riverside County in accordance with Ordinance 682 containing the documentation, plans, and fees normally required for the county's well abandonment permit, with copies to the CPM. The project shall not abandon or modify a well until the CPM provides approval.

**Verification:** The project owner shall ensure the Well Completion Reports are submitted and shall ensure compliance with all State and county water well standards and requirements for the life of the wells. The project owner shall do all of the following:

1. No later than 60 days prior to the use of groundwater for site construction , the project owner shall submit a Groundwater Monitoring and Management Plan to Riverside County for review and comment (see Condition of Certification **SOIL&WATER-6**).
2. No later than sixty (60) days prior to the abandonment and construction of the on-site groundwater wells, the project owner shall submit to the CPM a copy of the water well abandonment and construction packet submitted to the County of Riverside for review and comment.
3. No later than thirty (30) days prior to the construction of the on-site water supply wells, the project owner shall submit a copy of any written comments received from the Riverside County indicating whether the proposed well abandonment and construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program.

4. No later than sixty (60) days after installation of each well at the project site, the project owner shall provide to the CPM copies of the Well Completion Reports submitted to the DWR by the well driller. The project owner shall submit to the CPM, together with the Well Completion Report, a copy of well drilling logs, water quality analyses, and any inspection reports.
5. During well construction and for the operational life of the well, the project owner shall submit two (2) copies to the CPM for review and approval any proposed well construction or operation changes. .
6. No later than fifteen (15) days after completion of the on-site water supply wells, including removal of drilling mud, the project owner shall submit documentation to the CPM confirming that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any on-site drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c).

**CONSTRUCTION AND OPERATIONS WATER USE**

**SOIL&WATER-5:** The proposed project's use of groundwater for all construction activities shall not exceed an average rate of 420 acre-feet per year of construction. The proposed project's use of groundwater for all operations activities shall not exceed 150 acre-feet per year. Water quality used for project construction and operation will be reported in accordance with Condition of Certification **SOIL&WATER-6** to ensure compliance with this condition. Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project water use and to monitor and record in gallons per month the total volume(s) of water supplied to the project from this water source. The metering devices shall be operational for the life of the project.

**Verification**: Beginning six (6) months after the start of construction, the project owner shall prepare a semi-annual summary report of the amount of water used for construction purposes. The summary shall include the monthly water usage in gallons.

At least sixty (60) days prior to the start of construction of the proposed project, the project owner shall submit to the CPM a copy of evidence that metering devices have been installed and are operational.

The project owner shall prepare an annual summary report, which will include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary report will

also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.

**GROUNDWATER LEVEL AND QUALITY MONITORING AND REPORTING PLAN**

**SOIL&WATER-6:** The project owner shall submit a Groundwater Level and Quality Monitoring and Reporting Plan to the CPM for review and approval. The Groundwater Level and Quality Monitoring and Reporting Plan shall provide a description of the methodology for monitoring background and site groundwater levels and quality. Prior to project construction, monitoring shall commence to establish pre-construction base-line groundwater level conditions in the upper and lower aquifer and shall include pre-construction, construction, and project operation water use. The primary objectives for the monitoring is to ensure the project's water use is consistent with predicted drawdown in the lower aquifer**,** establish pre-construction and project related groundwater quality and groundwater elevation levels that can be quantitatively compared against observed and simulated levels near the project pumping well, and to avoid, minimize, or mitigate impacts to the Rice Valley groundwater basin storage.

**Verification:** The project owner shall complete the following:

1. At least six (6) weeks prior to construction, a Groundwater Level and Quality Monitoring and Reporting Plan shall be submitted to the CPM for review and approval before completion of Condition of Certification **SOIL& WATER-4**. The Plan shall include a scaled map showing the site and vicinity, existing well locations, and proposed monitoring locations (both existing wells and new monitoring wells proposed for construction). The map shall also include relevant natural and anthropogenic features (existing and proposed as part of this project). The plan also shall provide: (1) well construction information and borehole lithology for each existing well proposed for use as a monitoring well; (2) description of proposed drilling and well installation methods; (3) proposed monitoring well design; and, (4) schedule for completion of the work.
2. At least four (4) weeks prior to construction, a Well Monitoring Installation and Groundwater Level Network Report shall be submitted to the CPM for review and approval. The report shall include a scaled map showing the final monitoring well network. If applicable, it shall document the drilling methods employed, provide individual well construction as-builds, borehole lithology recorded from the drill cuttings, well development, and well survey results. The well survey shall measure the location and elevation of the top of the well casing and reference point for all water level measurements, and shall include

the coordinate system and datum for the survey measurements. Additionally, the report shall describe the water level monitoring equipment employed in the wells and document their deployment and use.

3. As part of the monitoring well network development, all newly constructed monitoring wells shall be constructed consistent with State and Riverside County specifications.
4. At least four (4) weeks prior to beginning groundwater pumping for project construction, baseline groundwater quality and groundwater level monitoring data shall be reported to the CPM. The report shall include the following:
   - An assessment of pre-project groundwater levels in the upper and lower aquifer, a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and a comparison and assessment of water level data relative to the assumptions and spatial trends simulated by the applicant's groundwater model.
   - An assessment of pre-project groundwater quality with groundwater samples analyzed for TDS, chloride, nitrates, major cations and anions, and oxygen-18 and deuterium isotopes. These analyses, and particularly the stable isotope data, can be useful for identifying partially evaporated water sources and assessing their contributions to the quality of water produced by wells.
   - The data shall be tabulated, summarized, and submitted to the CPM. The data summary shall include the estimated range (minimum and maximum values), average, and median for each constituent analyzed. The data shall also be analyzed using the Mann-Kendall test for trend to assess whether pre-project water quality trends, if any, are statistically significant.
5. During project construction and during project operations, the project owner shall semi-annually monitor the quality of groundwater and changes in groundwater elevations and submit data semi-annually to the CPM. The summary report shall document water level monitoring methods, the water level data, water level plots, and a comparison between pre- and post-project start-up water level trends as itemized below. The report shall also include a summary of actual water use conditions, monthly climatic information (temperature and rainfall), and a comparison and assessment of water level data relative to the assumptions and simulated spatial trends predicted by the applicant's groundwater model.
   - Groundwater samples from all wells in the monitoring well network, which shall include production wells, shall be analyzed and reported semi-annually for TDS, chloride, nitrates, cations and anions, and oxygen-18 and deuterium isotopes. These analyses, and particularly the stable isotope data, can be useful for identifying partially evaporated water sources and assessing their contributions to the quality of water produced by wells.

- Water quality and level trends shall be analyzed using the Mann-Kendall test for trend. Trends in the compliance data shall be compared and contrasted to pre-project trends, if any.
- If no significant trends exist in the compliance data, or the data set is insufficient to assess trends, all water-supply well compliance data shall be pooled and contrast to the pre-project data set. If significant pre-project trends are identified, the compliance data can first be corrected to remove pre-project trends and then contrast to the pre-project data.
- The contrast between pre-project and compliance mean or median concentrations shall be compared using an Analysis of Variance (ANOVA). A parametric ANOVA (for example, an F-test) can be conducted on the two data sets if the residuals between observed and expected values are normally distributed and have equal variance, or the data can be transformed to an approximately normal distribution. If the data cannot be represented by a normal distribution, then a nonparametric ANOVA shall be conducted (for example, the Kruskal-Wallis test). If a statistically significant difference is identified between the two data sets, the monitoring data are inconsistent with random differences between the pre-project and baseline data indicating a significant water quality impact from project pumping may be occurring.
- If compliance data indicate the quality of the production water has changed by a statistically significant amount for three consecutive years and the constituent concentrations exceed Water Quality Objectives, the applicant shall supply the CPM and RWQCB with a report describing the exceedances.

**GROUNDWATER PRODUCTION REPORTING**

**SOIL&WATER-7:** The Project is subject to the requirement of Water Code Sections 4999 et. seq. for reporting of groundwater production in excess of 25 acre feet per year.

**Verification:** The project owner shall file an annual "Notice of Extraction and Diversion of Water" with the SWRCB in accordance with Water Code Sections 4999 et. seq. The Project Owner shall include a copy of the filing in the annual compliance report.

**SEPTIC SYSTEM AND LEACH FIELD REQUIREMENTS**

**SOIL&WATER-8:** The project owner shall comply with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (24 Cal. Code Regs., Part 5) regarding sanitary waste disposal facilities such as septic systems and leach fields. The septic system and leach fields shall be designed, operated, and maintained in a manner

that ensures no deleterious impact to groundwater or surface water. Compliance shall include an engineering report on the septic system and leach field design, operation, maintenance, and loading impact to groundwater. If a temporary septic system and leach field will be used for management of worker housing domestic and sanitary wastes or construction trailer areas, the project owner shall ensure that the system is designed, operated, and destroyed prior to facility operation, in accordance with County of Riverside requirements. Use of the permanent facility septic systems and leach fields for onsite disposal of domestic wastes generated from temporary worker housing or construction trailer areas is prohibited without prior approval from the CPM.

**Verification:** The project owner shall submit all necessary information and the appropriate fee to the County of Riverside to ensure that the project has complied with county sanitary waste disposal facilities requirements. Written assessments prepared by the County of Riverside regarding the project's compliance with these requirements must be submitted to the CPM for review and approval at least thirty (30) days prior to use of the septic systems. Any requests to use the permanent facility septic systems for onsite disposal of domestic wastes generated from temporary worker housing or construction trailer areas must be made at least ninety (90) days in advance of the proposed use and shall be accompanied by a complete technical assessment demonstrating that the proposed use is consistent with the County of Riverside sanitary waste disposal facility requirements and would not cause the system to fail or exceed regulatory standards.

**NON-TRANSIENT, NON-COMMUNITY WATER SYSTEM**

**SOIL&WATER-9:** The Project is subject to the requirement of Title 22, Article 3, Sections 64400.80 through 64445 for a non-transient, non-community water system (serving 25 people or more for more than six months). In addition, the system will require periodic monitoring for various bacteriological, inorganic and organic constituents.

**Verification:** The project owner shall obtain a permit to operate a non-transient, non-community water system with the County of Riverside at least sixty (60) days prior to use of a domestic water supply at the site. In addition, the project owner shall submit to the CPM a monitoring and reporting plan for production wells operated as part of the domestic water supply system prior to plant operations. The plan will include reporting requirements including monthly, quarterly, and annual submissions.

The project owner shall designate a California Certified Water Treatment Plant Operator as well as the technical, managerial, and financial requirements as

prescribed by State law. The project owner will supply updates on an annual basis regarding monitoring requirements, any submittals to the County of Riverside, and proof of annual renewal of the operating permit.

### CLOSURE AND DECOMMISSIONING PLAN

**SOIL&WATER-10:** The project owner will prepare a decommissioning plan for the transmission line and substation that will meet the requirements of the BLM. The project owner shall identify likely decommissioning scenarios and develop specific decommissioning plans for each scenario that will identify actions to be taken to avoid or mitigate long-term impacts related to water and wind erosion after decommissioning. Actions may include such measures as a decommissioning SWPPP, revegetation and restoration of disturbed areas, post-decommissioning maintenance, collection and disposal of project materials and chemicals, and access restrictions.

**Verification:** At least sixty (60) days prior to the start of site mobilization or alternate date as agreed to with BLM, the project owner shall submit decommissioning plans to BLM for comment and the CPM for review and approval. The project owner shall amend these documents as necessary, with approval from the CPM, should the decommissioning scenario change in the future.

# Appendix A

## SOIL AND WATER RESOURCES

## WASTE DISCHARGE REQUIREMENTS – Rice Solar Energy Project Class II Disposal Facility, Riverside County

### Findings

1. Rice Solar Energy, LLC, a wholly owned subsidiary of Solar Reserve, LLC, a Delaware limited liability company with its principal place of business in Santa Monica, California, is hereafter referred to as "Discharger". The Discharger proposes to construct, own, and operate a solar electrical generating plant (hereafter referred to as "facility) on approximately 1,410 acre site in eastern Riverside County, California. The Rice Solar Energy Project (RSEP) uses solar thermal power generating technology incorporating solar tracking heliostats that reflect solar energy to a central receiver that is mounted on a tower. Except during initial melting and conditioning of the salt, no fossil fuels will be utilized in the solar-thermal power generation at the facility.

2. The project site is a privately owned parcel located in eastern Riverside County, California situated south of State Route 62 at milepost 109. The RSEP is within a larger owned parcel of 3,324 acres. Within this larger property, the RSEP is sited within a new square-shaped parcel that will be created by merging four different assessor's parcels, resulting in a single 2,560-acre parcel. The project site will include an administration building, heliostat field with power block, and double-lined evaporation ponds totaling 1,410 acres surrounded by a security fence.

3. The project site is located in a very sparsely settled portion of the Colorado Desert, a sub region of the Sonoran Desert. The nearest residence and permanent settlement to the RSEP is Vidal Junction, which is 14.8 miles northeast at the junction of SR 62 and US Route 95. The nearest residence and permanent settlement to the west of the project site is the Iron Mountain Pumping Plant operated by the Metropolitan Water District of Southern California, where there are several residences. The Iron Mountain Pumping Plant is located 17.8 miles northwest of the RSEP site. The nearest town offering significant services to the RSEP is Parker, Arizona, located approximately 32.5 road miles to the east.

4. The project site is surrounded by private land to the west and north, and uninhabited public lands managed by the Bureau of Land Management (BLM) to the east and south. SR 62 and the Colorado River Aqueduct are located just north of the project site in San Bernardino County. There are sand dunes known as the Rice Valley Dunes to the south of the project site which formerly contained the Rice Valley Dunes Off-Highway Vehicle Recreation area.

5. The Discharger has filed an application for certification under the California Energy Commission's (CEC) standard certification process. Project construction is planned to begin in spring 2011 with an estimated construction period of 30 months. Facility operation is targeted for October 2013.

6. The CEC is the lead agency under the California Environmental Quality Act (CEQA) for all thermal power plants greater than 50 MW. The CEC's power plant licensing process is a CEQA-equivalent process. The RWD indicates that environmental review documents produced by the CEC staff are called the Preliminary Staff Assessment, which is similar to a draft Environmental Impact Report (EIR), and the Final Staff Assessment (FSA) which is like a Final EIR. The CEC licensing process is a 12-month process in which the CEC evaluates the application and formulates its decision on the project proponent's Application for Certification (AFC). The Discharger submitted the project's AFC in October 2009.

7. The Discharger submitted a Report of Waste Discharge/Joint Technical Document (hereafter collectively referred to as the RWD) with the California Energy Commission (CEC) and Colorado River Basin Regional Water Quality Control Board (Regional Board). CEC will coordinate reviews and approvals with the regulatory agencies to ensure that the proposed project meets the California Environmental Quality Act (CEQA) requirements. This includes obtaining waste discharge requirements (WDRs) from staff of the CRBRWQCB The CEC will certify this project and will include these WDRs as conditions of certification in accordance with the Warren-Alquist Act[1].These WDRs are not being proposed by staff of the Regional Board to its Board for consideration and adoption at this time. After the CEC certifies the project, these WDRs may be re-issued by the Board of the Regional Board under Section 13263 of the Water Code without substantive amendments if deemed appropriate for enforcement, annual fee collection, inspection and monitoring, and related purposes, but any action of the Board of the Regional Board to re-issue these WDRs under Section 13263 of the Water Code must be consistent with the Warren-Alquist Act, including without limitation the non-reviewability provision of subdivision (c) of Section 25531 of the Public Resources Code.

[1] The Warren-Alquist State Energy Resources Conservation and Development Act is the authorizing legislation for the California Energy Commission. The Act is codified as Public Resources Code (PRC), Section 25000 et seq.. PRC Section 25500 establishes the Commission's authority to certify all sites and related facilities for thermal power plants with power ratings of 50 megawatts or more. The section further declares that "the issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law."

8. RSEP Process: The RSEP technology will generate power from the sunlight by focusing energy from a field of mirrors known as heliostats to a central receiver. Molten Salt is circulated through tubes in the receiver, which collects energy gathered from the sun. The heated salt is then routed to an insulated storage tank where it is stored with minimum energy loss. The salt has a melting temperature of 450$^{o}$ F. Salt is a heat storage medium that retains thermal energy over time. Once the salt is melted to a liquid form during construction, it will remain heated and in a liquid state throughout the facility's operating life.

   On any given operating day, when sunrise begins, the receiver is filled with 550$^{o}$ F cold salt and is preheated by incremental redirection of small numbers of heliostats onto the receiver panels. As the sun rises above the horizon, the full array of heliostats are directed onto the receiver, and salt temperature begins to rise. Salt flow through the receiver is recirculated back to the cold salt tank until the salt outlet temperature reaches 1,050$^{o}$F. Salt is then continuously transferred from the cold salt tank, through the receiver and into the hot salt tank. The quantity of salt in the cold tank decreases while the quantity in the hot tank increases during solar energy collection.

   As a decoupled process, small amount of cold salt is circulated continuously through the stream generation system to produce steam. The steam is continuously applied to the steam seals on the turbine to keep the turbine warm while it rotates slowly on the turning gear when the steam turbine is not in production. During power generation cycle, a hot salt pump will gradually send hot salt to mix with the cold salt flow through the steam generation system to increase the temperature of the steam generation system. The RSEP will use dry cooling technology for the steam turbine cycle using an air-cooled condenser.

9. The RSEP technology consists of the following elements: 1) 17,500 heliostats or mirrors, each encompasses 672 square feet in area occupying approximately 1,370 acres; 2) A 538-foot-high concrete solar receiver tower with a 100-feet-tall solar receiver and 15-feet-long crane; 3) A liquid salt circulation and storage system capable of storing 70 million pounds of liquid salt (sodium nitrate/potassium nitrate mixture); 4) A 150 Mega Watt condensing steam turbine generator system and equipment; 5) A 20 cell ACC for cooling of the steam turbine exhaust; 6) A 10 mile long generation tie-line to connect with the Parker-Blythe No. 2 transmission line; 7) A new interconnection substation; 8) An onsite switchyard; 9) Two onsite wells for industrial water use and a water treatment system; 10) Three evaporation ponds for waste disposal, approximately 5 acres each;11) Two diesel fire-water pumps and two emergency diesel generator sets for backup emergency power supply; and 12) The existing 12-kV electrical distribution line is extended to have a total length of approximately 1.1 miles long to the facility fence-line.

10. The facility water demand is met by pumping raw water from two onsite water wells. Each well will have sufficient capacity to supply water for the plant needs throughout the expected 30-year operational life of the plant. Groundwater will go through pre-treatment system and then be further purified for use as boiler makeup water and for pressure washing of the heliostats (mirrors). Pretreatment of groundwater is necessary because it contains undesirable levels of TDS unsuitable for heliostat/mirror washing, and for boiler feed water. The Discharger's initial RWD provided project average daily use and estimated maximum annual water requirements. The project water use and discharge estimates were later amended by the Discharger in March 2010 in response to CEC staff data requests on project water conservation measures. The project water balance was revised to allow for reuse of water treatment reject and WSAC blowdown, thereby reducing both the project's water demand and the volume of wastewater discharged to the evaporation ponds. The revised average water use and discharge estimates are as follows:

| Water Use | Average Daily Use (gpm)[2] | Annual Use (AFY)[3] |
|---|---|---|
| Heliostat Wash | 51 | 31 |
| Steam Cycle Makeup | 52 | 31 |
| Potable Water | 5 | 3 |
| Other uses including wet surface air cooler (WSAC), service water, quench water | 62 | 38 |
| Average Use Total | 170 | 103 |
| Margin for other uses | 25 | 15 |
| Total Plant Consumption | 195 | 118 |
| Maximum Annual Use | -- | 150 |
| | | |
| Wastewater Discharge | | |
| Service water | 5 | -- |
| WSAC blowdown | 27 | -- |
| Hydrostatic test water | * | -- |
| Average discharge to evap. Ponds | 32 | ~20 |

11. The RWD, as amended by data responses, indicates that the raw water treatment system will include the following components: 1) Reverse Osmosis (RO) system; and 2) Electro-deionization. The steam-power generation cycle heat rejection system will consist of an air-cooled steam condenser and includes a generator, turbine lube oil system, and pumps. The cooling is achieved through a closed-loop cooling circuit that utilizes fin-fan heat exchangers that are cooled by mechanical draft ambient airflow forced across the finned-tubes to cool the water circulating within. A small quantity of make-

[2] Gallons per minute
[3] Acre-feet per year, based on 3286 hours of operation per year .
* A volume of approximately 6 million gallons will be used during hydrostatic testing. Wastewater discharge facilities shall be operational, and monitoring networks must be installed prior to discharge.

up water will be required to compensate for minor leakage and to maintain system-water-chemistry to prevent corrosion.

**WASTEWATER CHARACTER & PROPOSED DISCHARGE**

12. The Discharger proposes to use double-lined evaporation ponds as part of its waste disposal. The evaporation ponds will receive, store and evaporate wastewater from operations at the project site. The proposed discharge to lined evaporation ponds was initially reported to be derived from five sources: 1) Reaction Chamber and Clarifier waste stream; 2) Steam Cycle Blow down; 3) Treated effluent from the oil water separator; 4) Wet Surface Air Cooler (WSAC) Blow down; and 5) Service Water. However, the Discharger revised the project water use in response to CEC staff data requests and now proposes to reuse the RO/reaction chamber waste and stream cycle blow down. Consequently, the proposed discharge would instead be derived just from the WSAC blow down, service water, and treated effluent from the oil/water separator. The estimated flow rate and volume of wastewater discharge is tabulated above in Finding No. 10.

13. The RWD indicates that plant drains will collect containment area wash down and drainage from facility equipment drains. Wastewater from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and then routed to a wastewater collection system. Drains that would contain water mixed with oil and grease will first pass through and oil/water separator unit. Ultimately, wastewater from the wastewater collection system will be piped to three 5-acre lined evaporation ponds for disposal.

14. The RWD states that wastewater discharge into the evaporation ponds is non hazardous; however, it does contain pollutants which could exceed water quality objectives if released, or that could be expected to affect the beneficial uses of ground water. Therefore, the wastewater is classified as a “designated waste.” This classification is consistent with CCR Title 27, Chapter 3, Subchapter 2, Article 2 Section 20210.

15. The RWD indicates that approximately 31 acre-feet per year of heliostat/mirror wash water will be used by the project. Any wash water from mirror washing that does not infiltrate into the soil around the heliostats would be allowed to sheet flow along the site’s current drainage pattern to the south end of the heliostat field.

16. The RWD states that during facility construction the average water use over the 30-month construction period will be approximately 780 acre-feet. The water will be required for soil moisture conditioning during earthmoving operations and for dust control.

17. Sanitary waste will be generated from the onsite toilets and showers. The wastewater disposal will be to two (2) separate septic tank leach-field systems. The Riverside County Department of Environmental Health would

normally issue a permit for construction of the septic-tank leach-field system and regulate the discharge. However, pursuant to provisions of the Warren-Alquist Act, the CEC's certification would act as an "in-lieu" permit for the Riverside County sewage permit by incorporating the regulatory requirements and conditions of those permits into the Commission's certification.

18. Solid waste such as oily rags, broken and rusted metal and machine parts, empty containers, and broken materials generated at the facility will be trucked off site for recycling, or disposed off to a designated waste disposal facility.

19. The RWD indicates that during the 30-year operating life of the facility, about 1-ft of sludge may accumulate at the bottom of the evaporation ponds, which consists of precipitated solids from the evaporated wastewater. Over 30 years, the sludge accumulation is estimated to be about 4,600 tons.

**HYDROLOGY, SOILS & BENEFICIAL USES**

20. The project site is located in the Rice Hydrological Unit (716.00) of the Hayfield Planning Area. The Hayfield Planning Area covers approximately 1,860 square miles of desert with barren mountains and valleys, with the Chuckwalla Mountains on the south boundary and the McCoy Mountains on the east boundary. Beneficial uses for the Rice Hydrologic Unit include municipal and domestic supply

21. The project site is located within the Rice Valley and has a slope of less than 2%. Runoff occurs primarily during thunderstorms and the surface runoff from the mountains drains towards the center of the valley, except in the eastern part of the valley, where Big Wash drains to the Colorado River.

22. The RWD indicates that the Rice Valley area is in the Sonoran Desert / Mojave Desert physiographic province of California. The Sonoran Desert / Mojave Desert region is dominated by broad alluvial basins that are mostly aggrading surfaces receiving non-marine continental deposits from adjacent uplands.

23. The RWD indicates that subsurface soils at the project site consist of dense silty sands and poorly graded sands interpreted from onsite drilled borings. Specifically, the onsite soils are classified as typical durorthids, loamy-skeletal mixed, hyperthermic and shallow, and typical torripsamments, mixed, hyperthermic. Boring depths ranged from approximately 10 to 85 feet below ground surface (bgs). Expansive soils were not encountered in any site borings.

24. The project site is located in the north central portion of the Rice Valley Groundwater Basin, a desert basin with relatively limited groundwater recharge and little existing groundwater use. The RWD indicates that site specific investigations were conducted and it was found that the alluvium can

be divided into two units, the upper alluvium and the lower alluvial aquifer. The saturated upper alluvium occurs from approximately 80 feet bgs to 600 feet bgs and the lower alluvial aquifer occurs from approximately 600 feet bgs to 810 feet bgs. The upper alluvium is comprised of clays and sands with finer grained materials dominating. The lower alluvial aquifer is comprised of sands, gravels and clays with coarser grained materials dominating.

25. The RWD states that depth to ground water ranged between 150 to 153 feet bgs. Groundwater beneath the project site is approximately 285 feet bgs, and flows northeast in the direction of the Vidal Valley Groundwater Basin. Five wells in the basin tested for groundwater quality showed total dissolved solids (TDS) levels range between 662 mg/L to 3,540 mg/L. The average TDS concentration is about 1,900 mg/L. At one well, fluoride content was 1.8 mg/L and boron content was 2.8 mg/L, which may indicate a local impairment of the groundwater.

26. The RWD reflects that recharge within the basin is mainly from infiltration of runoff through alluvial deposits and by mountain front recharge with negligible amount of areal recharge from precipitation. Natural recharge is estimated to be 500 acre-feet per year and represents mountain front recharge. Additional recharge could be from subsurface inflow from the Ward Valley Groundwater Basin but is not quantified.

27. The project site is located in an arid desert climate, low annual precipitation, strong seasonal winds and mostly clear skies. Average annual evaporation in the project area, based on published data at the Indio Fire Station about eighty five miles southwest of the site is 105 inches.

28. Average annual precipitation ranges from 3 inches to 8 inches west of the Rice Valley (source: SWRCB, 2006; DWR, 2004). The RWD indicates that average annual precipitation in the project area, based on the gauging station at Blythe is 3.55 inches.

29. Surface water runoff from the mountains drains towards the center of the valley, except in the eastern part of the valley, where Big Wash drains to the Colorado River. The RWD indicates that there are no perennial streams in the vicinity of project site, and most of the moisture from rain is lost through evapotranspiration. The Colorado River aqueduct flows in an east-west direction within 1,000 feet north of the project site. The aqueduct is a concrete lined manmade controlled feature, and does not affect the natural hydrology of Rice Valley.

30. The off-site storm water flows originate from an area north of SR-62 (i.e., the Arizona-California Railroad, and the Colorado River Aqueduct). Small dikes have been constructed to control the flow of water across these features. The dikes direct the offsite flows from the north to specific channels/culverts over

the aqueduct, under the railroad and then across SR-62 through small dips in the roadway.

31. The project site, including the utility lines, lies entirely within an area designated by FEMA as Zone D, where there are possible but undetermined flood hazards. The RWD indicates that evaporation ponds will be protected from offsite and onsite flows by the perimeter road. Storm water will be managed around the evaporation ponds to prevent inundation or washout due to floods in a 100 year storm event.

32. The RWD indicates that, based on site's earthquake history, the site could be subject to minor to moderate ground accelerations. Based on National Seismic Hazard Maps 2002 (USGS, 2008a) the peak bedrock acceleration at the site is 0.14 g for a 2,475 year recurrence interval or 2% probability of exceedance in 50 years. The San Andreas Fault is the controlling fault impacting the potential ground motion at the Project site.

33. The Water Quality Control Plan Colorado River Basin- Region 7, (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies, for Basin Waters. These requirements implement the Basin Plan.

34. Federal regulations for storm water discharge were promulgated by the United States Environmental Protection Agency (USEPA) on 16 November 1990 (Title 40 CFR Parts 122, 123, and 124). The regulations require specific categories of activities (construction and industrial) and facilities that discharge storm water to waters of the United States to obtain a National Pollutant Discharge Elimination System permit (NPDES), and to implement Best Conventional Pollutant Technology to reduce or eliminate industrial storm water pollution. The Rice Solar Energy Project, however, would be excluded from the requirement to obtain both the construction and the industrial NPDES storm water permits because it would not discharge storm water to waters of the United States.

35. The conditional discharge as described herein is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16. Degradation of groundwater immediately beneath the WMUs is unlikely to occur if the proposed project complies with the terms and conditions of these WDRs and MRP. The proposed project appears to be consistent with maximum benefit to the people of the State, as the land use at this location is not expected to change and best practical treatment or control can be achieved through a combination of the described treatment processes, WMU design and construction, and ground water quality monitoring.

**WASTE MANAGEMENT UNIT DESIGN & CONSTRUCTION**

36. The Discharger proposes to construct three Class II Surface Impoundment Waste Management Units (WMU) to handle designated liquid waste

generated at the facility as described in Finding Nos. 12, 13, and 14. he three 5-acre evaporation ponds will have a proposed average design depth of 6 feet across each pond to ensure: one foot of sludge build up; three feet of operational depth; and two feet of freeboard.

37. The RWD indicates that containment design for the evaporation ponds from surface of the evaporation ponds downwards will consists of the following: 1) a primary 60 mil high density polyethylene (HDPE) liner; 2) a leak detection and removal system comprising a geonet and collection sump; 3) a secondary HDPE liner (minimum of 40 mil); and 4) a base layer consisting of either a geosynthetic clay liner (GCL) or 2 feet of onsite material with a hydraulic conductivity of less than $1 \times 10^{-6}$ cm/sec of which at least 30%, by weight, shall pass through a No. 200 Standard sieve. If this material is unavailable, then a geosynthetic clay liner (GCL) or approved equivalent is the alternative design for the base layer. The GCL option is proposed as an engineered alternative.

38. The RWD states that a ramp will be constructed to provide access for equipment and maintenance to each pond. At the ramp location, there will be a protective layer above the primary HDPE liner.

39. The RWD indicates that side slopes around the evaporation ponds will contain the same liner system as the base of the ponds, except that leak collection pipes will not be located on the pond side slopes. The berms shall be covered with a minimum 6-inch thickness of road base or approved equivalent. The top of the berms will be a minimum of 2 feet above the surrounding existing grade to prevent potential inflow of storm water.

40. The RWD indicates that the leak detection system between the upper and lower liners will consists of a geonet drainage media and a trench containing piping and sand bedding. The sand bedding in the trench, including the perforated piping system, will have to be carefully placed on top of the underlying 40 mil HDPE liner. The geonet will be placed across the top of the sand-filled trench to avoid strain on the material.

41. The RWD indicates that the moisture detection system below the liner system will consists of continuous carrier pipes installed at the sides and low point of each pond (one carrier pipe per pond) at a depth of approximately 5 feet below the secondary liner. The carrier pipes will be terminated at the surface on each side of the pond and will be equipped with a pull cable system for conveyance of a neutron probe for moisture detection.

42. The RWD indicates that excavation and berm construction will use standard cut and fill techniques. The sub grade will be moisture conditioned to 2% above the optimum moisture content, compacted to at least 90% relative compaction as determined by American Society for Testing and Materials

(ASTM) D1557, and proof-rolled using a smooth drum roller prior to placement of the GCL or the 2 feet of low permeable onsite material.

43. The RWD further states that the quality assurance program will be implemented consistent with the State Water Resources Control Board's Construction Quality Assurance (CQA) Requirements. CQA testing will be performed on the sub-grade, GCL, HDPE liners, granular/free draining native soil, and hard surface materials.

## IMPROVEMENTS OVER EXISTING TITLE 27 PRESCRIPTIVE STANDARDS

44. Under this Order, the Title 27 prescriptive standard, set forth in Title 27 of the California Code of Regulations, Section 20415(e)(8)(E)2, to use what would, in modern phraseology, be called a pass-2-of-3 retesting approach for statistical compliance testing has been replaced by the far more statistically powerful pass-1-of-3 retesting approach suggested in the USEPA's **Unified Guidance** ("UG," 2009). (All subsequent regulatory citations shall be to Title 27.) Likewise, the prescriptive standard to take all retest samples within 30 days of a preliminary release indication (Section 20415(e)(8)(E)3) has been replace by the UG-supported improvement of allowing roughly 90 days to separate successive samples (for a given monitoring parameter at a given well), in order to avoid serial correlation that would likely invalidate the retest. These improvements are implemented as allowed under Section 20080(a)(1) and constitute the means for assuring that the monitoring program meets Title 27's performance standard for a Detection Monitoring Program (Section 20420(b)), i.e., that the water quality monitoring systems required to be installed "are appropriate for detecting, at the earliest possible time, a release from the Unit…."

## MONITORING AND REPORTING PROGRAM (MRP) TO PHASE IN

45. It is not possible to initiate monitoring for a release until after the groundwater flow direction, and groundwater monitoring points and background monitoring points have been established, and each monitored waste constituent (Monitoring Parameter {MonPar}) has, at each Monitoring Point (MonPt), an approved Concentration Limit (suite of background reference data) and an approved data analysis method to apply to that Concentration Limit in order to obtain the retest-triggering concentration ("Threshold Value"), against which each new datum will be compared, for that MonPar at that MonPt (i.e., for that "MonPt/MonPar pair"). Therefore, as noted at the start of the attached Monitoring and Reporting Program (MRP), most of the MRP does not come into effect until the Discharger has completed this preparatory work.

    Therefore, the first six-monthly Reporting Period during which the MRP will become fully in-effect (i.e., the Discharger initiates compliance monitoring and testing for all MonPt/MonPar pairs), will start around 2.5 years after the Monitoring Points and Background Monitoring Points are installed. This delay in initiating compliance analysis monitoring should cause no absence of water

quality protection, given that a release from one of the three impoundments would, most likely, take several years to reach the down gradient wells and be detected. Nevertheless, it is not possible to conduct an effective monitoring program absent the completion of the above-described preparatory work.

## A. DISCHARGE SPECIFICATIONS

1. The Discharger shall inform the Energy Commission's Compliance Project Manager (CPM) and the Regional Board immediately upon its determination that this Order fails to implement any applicable requirement of Title 27.

2. Wastes must be only discharged into, and confined to, approved WMUs specifically designed for their containment, as described in Finding Nos. 36 and 37.

3. The Discharger must follow the Water Quality Protection Standard (WQPS) for detection monitoring established by the Regional Board. The following are parts of the WQPS, as established by the Regional Board.

   a. The Discharger must test for the monitoring parameters[4] (MonPars) in the attached Monitoring and Reporting Program (MRP) and revisions thereto. The MRP is an integral part of the proposed WDRs and must be implemented.

   b. **Concentration Limits [see also Provisions C.6 through C.10] –** for each monitoring point, the concentration limit for each monitoring parameter shall be its background value, as represented by a set of at least eight background data points collected from an appropriate up gradient "interpoint" background monitoring point (or an "intrapoint" concentration limit using data collected from that compliance-testing monitoring point before there is any evidence of a release there).

   c. The monitoring wells, including those located along the Point of Compliance[5] (which follows the down gradient boundary of the WMU) will be determined when the Discharger submits its ground water monitoring work plan for approval by the CPM, in consultation with the Regional Board Executive Officer, in accordance with Discharge Specification A.6 of these WDRs. The up gradient and down gradient wells (i.e., background monitoring points and monitoring points, respectively) and their location must be specified in the work plan. These monitoring points, and the

[4] At this site, every Constituent of Concern (COC) is also a monitoring parameter (MonPar), so the two terms are equivalent.

[5] The "Point of Compliance" is a conceptual curvilinear vertical surface that extends down into the uppermost aquifer. Its surface trace follows along the down gradient side(s) of the WMU. At least one of the down gradient monitoring wells must be placed along the Point of Compliance, and the Point of Compliance, once determined, must show up on the site map in each monitoring report.

location of the surface trace of the Point of Compliance, will be approved based on calculated groundwater gradient at the site. A revised MRP may be required if the groundwater gradient changes. All proposed changes to the monitoring program, including any additional or replacement monitoring points, would need approval in advance of implementation.

4. The Discharger must report test results to the CPM, with copies to the Regional Board, for monitoring parameters listed in the MRP and future revisions thereto. Monitoring parameters and COCs are subject to the most appropriate statistical or non-statistical test under the MRP, and any revised MRP approved by the CPM, in consultation with the Regional Board. Typically, such testing involves applying the approved statistical or nonstatistical test to the appropriate background data set ("Concentration Limit" for a given constituent at a given monitoring point) to determine a "Threshold Value" (a concentration above which a release is indicated, triggering a retest for validation), which is then compared with the then-current concentration of that constituent at that Monitoring Point.

5. Discharges to a WMU must cease immediately, and the Discharger must empty the WMU by conveying its waste to a functioning WMU, if there is any containment system failure of that unit, including, but not limited to, any detectable flow of the Unit's contained liquid waste into the leak-detection system (between the upper and lower liners), until such time as the cause of the failure has been remedied to restore complete containment to the WMU. The Discharger must inform the CPM and Regional Board immediately upon discovering the failure and convey to them promptly information concerning all remedial actions taken to remedy the condition.

6. Containment of waste shall be limited to the areas designated for such activity. Any revision or modification of the waste containment area, or change in operation that alters the nature and constituents of the waste produced, must be submitted in writing to the CPM, with copies to the Regional Board Executive Officer, for review. The CPM, in consultation with the Regional Board Executive Officer, must approve the proposed change before the change in operation or modification of the designated area is implemented.

7. At any WMU where the groundwater separation is less than five feet below the base of the waste, the Discharger shall construct a groundwater drainage system capable of maintaining this minimum allowable separation. The design's separation from groundwater must be based upon the separation between the pond's uppermost liner and the highest anticipated groundwater elevation.

8. Wastewater to be discharged from the project, as defined in Finding Nos. 12 and 13, must not overflow the ponds. Liquids must maintain a minimum freeboard of two feet at all times.

9. The Discharger must install in all surface impoundments/WMUs (as in this case) a permanent marker delineating the brim of the WMU. The marker is to be maintained as a reference point for measuring the freeboard.

10. Prior to removal of solids accumulated in the evaporation ponds, an analysis of the material must be conducted to verify that it is not a hazardous waste and the material must be disposed of in a manner consistent with that analysis and applicable laws and regulations. After removing the residual solids, prior to resuming use of that impoundment, the Discharger must inspect all portions of the impoundment's uppermost geomembrane to identify, and repair, any breaches in it (including any damage to underlying liner system components), and must submit a report to the CPM, with a copy to the Regional Board, that is signed by a suitably-licensed professional, detailing the location and nature of any such repair and certifying the pond's readiness for continued use.

11. The lined waste disposal ponds must be designed, constructed, operated, and maintained to prevent inundation or washout due to floods using the 24-hour/100-year design storm in water balance calculations.

12. Prior to the use of any new chemicals for control of microbes, pH, scale, and corrosion of equipments or pipelines, the Discharger must request review and approval by the CPM, in consultation with the Regional Board Executive Officer, in writing.

13. Waste conveyance systems throughout the facility area must be cleaned at least once every 90 days to prevent the buildup of solids, or when activity at the site creates the potential for release of solid materials from the conveyance systems.

14. Pipe maintenance and de-scaling activities that may include hydroblasting or sandblasting must be performed in a designated area to prevent wastes generated from these activities from impacting the environment.

15. Public contact with wastes must be precluded through means such a fences, signs, or other alternatives acceptable to the CPM, in consultation with the Regional Board Executive Officer.

16. The WMUs/surface impoundments must be managed and maintained to ensure their effectiveness, in particular:

    a. Erosion control measures must be implemented to ensure small coves and irregularities are not created, and

    b. Solid materials must be removed in a manner that does not damage or compromise the integrity of the liners, or any component of the containment systems.

17. Water used in the processes, dust control, and maintenance (i.e., cleanup) must be limited to the least amount necessary.

**B. DISCHARGE PROHIBITIONS**

1. The Discharger is prohibited from discharging, treating or composting the following wastes to the WMUs (evaporation ponds) at the facility:

   a. Municipal solid and liquid waste;
   b. Sludge (including sewage sludge, water treatment sludge, and industrial sludge);
   c. Septage;
   d. Oily and greasy liquid waste;
   e. Radioactive waste;
   f. Infectious or bio-hazardous materials, as defined by Health and Safety Code Section 25020.5;
   g. Hot, burning waste materials or ash; and
   h. Filter cake, if it is hazardous, and, thus, must be disposed of at a Class I Hazardous Waste Landfill.

2. The Class II WMUs (i.e., lined evaporation ponds) must receive only waste streams as identified in Finding Nos. 12 and 13.

3. Discharge of waste streams as mentioned above (Discharge Specifications A.2) to an area other than the evaporation ponds is strictly forbidden.

4. The Discharger must not cause degradation of any groundwater aquifer or water supply.

5. The discharge of waste to land not owned or controlled by the Discharger is prohibited.

6. Use of industrial waste streams generated at the facility for dust control on access roads, the heliostat field, or other locations is prohibited.

7. The discharge of hazardous is prohibited. The discharge of designated waste to an area other than waste management units authorized to receive such waste is prohibited.

8. The treatment or disposal of wastes at this facility must not cause pollution or nuisance, as defined in Section 13050 of the California Water Code.

9. The Discharger must not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value (as represented by its respective Concentration Limit {suite of at least eight

background data points}) at any Monitoring Point in any monitored medium addressed in the attached MRP, which is a part of these WDRs.

## C. PROVISIONS

1. The Monitoring and Reporting Program is necessary to determine compliance with the WDRs and to identify facility impacts, if any, to receiving waters.

2. The Discharger must notify the CPM and the Regional Board Executive Officer at least **10 days** prior to construction of the sub grade, the installation of an unsaturated zone monitoring system, the installation of all soil and synthetic liners for containment and ancillary cover systems, and the construction of the LCRS(s) for any WMUs.

3. Visual observations and detailed geologic mapping of foundation conditions underlying each excavation for a WMU must be made during construction by a California registered geologist. A geologic report and map of the excavation for each WMU must be submitted to the CPM, with a copy to the Regional Board Executive officer, before discharging waste to the WMU.

4. The groundwater detection monitoring system must consist of monitoring wells as approved by the CPM, in consultation with the Regional Board Executive Officer. The Discharger must maintain all onsite groundwater monitoring wells in good working order at all times to ensure compliance with the monitoring provisions of these WDRs. Well maintenance may include, but need not be limited to, periodic well re-development to remove sediments.

5. **One Hundred Eighty days (180)** prior to facility operation, the Discharger must submit for approval by the CPM, in consultation with the Regional Board Executive Officer, assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the WMUs. The financial assurance mechanism must be made payable to the CEC and must address the cost for a third party (i.e., someone other than the Discharger) to complete remediation of the most likely release scenario. In the event of a release, the Discharger is expected to finance the cleanup. But in the event that the Discharger fails to perform that duty, for whatever reason, the financial assurance mechanism will be used by the CEC to provide it with the funds to address the release.

6. **One Hundred Eighty Days (180)** prior to discharge into the WMUs, the Discharger must submit to the CPM, with a copy to the Regional Board Executive Officer, a technical report describing a work plan for the installation of a groundwater-monitoring network. The network must consist of one or more background monitoring wells and two or more down gradient wells capable of yielding representative samples from the uppermost portion of the uppermost aquifer located at the hydraulically down gradient limit(s) of the WMUs. All monitoring wells must meet DWR Well Standards in addition to performance standards prescribed by Section 20415(b)(4).. All well locations

and construction features are subject to the prior approval of the CPM, in consultation with the Regional Board Executive Officer, and must be sufficient to monitor potential impacts of wastes (leaked from any one of the lined evaporation ponds) on the uppermost groundwater aquifer underneath the WMUs.

7. Within **60 days** following work plan approval, the Discharger must implement the program. Within **30 days** following the construction of the approved network, the Discharger must submit copies of drillers' logs and "as built" construction drawings of each groundwater monitoring well, as well as properly surveyed reference point elevations for each well, to the CPM, with a copy to the Regional Board Executive Officer.

8. The Discharger must notify the CPM and the Regional Board Executive Officer at least **10 days** prior to installing groundwater monitoring well(s).

9. The Discharger shall commence monitoring of the background monitoring wells within **30 days** of completion of the approved groundwater monitoring network and must monitor for all specified Constituents of Concern by collecting a sample from each down gradient and background well quarterly for two years and then proposing (to the CPM, with a copy to the Regional Board Executive Officer) the most appropriate Concentration Limit (background location and suite of at least eight data points from that location). The groundwater monitoring program must include consistent sampling and analytical procedures that are designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points.

10. The Discharger's report, under Provision C.9, must characterize background groundwater quality using data from approved background well(s) using methods as prescribed in Section 20415(e)(10) by proposing a Concentration Limit for each MonPt/MonPar pair (for each MonPar at each monitoring point, including a determination of the best background data source[6] and a set of at least eight data points from it. The Discharger's report should also propose (for each MonPt/MonPar pair, considered individually) an appropriate statistical or nonstatistical data analysis method [see Section 20415(e)(7)-(9), the USEPA's **Unified Guidance**[7] (2009), and MRP Parts I.D.1, II.A.4., and III], to be used to determine that MonPt/MonPar pair's respective retest-triggering/confirming concentration (here called the "Threshold Value") which, if exceeded by that pair in a future sample, would provide an initial release indication, subject to validation by retesting. The proposal shall also include a

[6] The Concentration Limit can be either a (preferred) "intrawell" background data set collected from the same well that will be tested in the future or an "interwell" background data set collected from an up gradient well, with the most appropriate being the source that produces the lowest Threshold Value (using an appropriate data analysis method), and, for the interpoint approach only, that has a mean that is comparable to that of the compliance well mean.
[7] The **Unified Guidance** is available for downloading from http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/ .

retesting approach in accordance with MRP Part III, with the Threshold Value for any statistical method lowered to compensate for retesting effects, as described either in the **Unified Guidance** or, for a 95% Gamma Upper Prediction Limit method, in the two papers referenced in the footnote to Part II.A.3. of the MRP.

11. The Discharger must implement the MRP, Attachment C and revisions thereto as specified by the CPM, in consultation with the Regional Board Executive Officer, to detect at the earliest opportunity any unauthorized discharge of waste constituents from the facility, or any impairment of beneficial uses associated with brine or waste discharge from similar identified processes (i.e., boiler blow down, WSAC blow down, etc) to the evaporation ponds.

12. The Discharger should use the constituents listed in the MRP and revisions thereto, as Monitoring Parameters (i.e., all COCs are Monitoring Parameters).

13. The Discharger must submit technical and monitoring program reports, as directed by the CPM, in consultation with the Regional Board Executive Officer. Monitoring reports must be certified to be true and correct, and signed under penalty of perjury, by an authorized official of the company.

14. All monitoring must be conducted pursuant to a compliance testing program the CPM, in consultation with the Regional Board Executive Officer, has determined meets the requirements of Title 27 of the California Code of Regulations.

15. The Discharger must maintain records that contain appropriate supporting documentation of the nonhazardous nature of each waste stream accepted for on-site disposal or treatment. The records must contain certified analytical results of waste streams and a description of the waste stream generating processes, and any other information that may be necessary to demonstrate the nonhazardous nature of the waste being disposed into the lined ponds.

16. The Discharger must retain records of all monitoring information, copies of all reports required by these WDRs, and records of all data for a period of at least five (5) years from the date of the sample, measurement, report or application.

17. Unless otherwise approved by the CPM, in consultation with the Regional Board Executive Officer, all analyses should be conducted at a laboratory certified for such analyses by the California Department of Public Health. All analyses must be conducted in accordance with the latest California Environmental Laboratory Accreditation Program (ELAP) rulings.

18. The laboratory must use the lowest achievable reporting limits for groundwater samples required under the MRP.

19. **Ninety days (90)** prior to terminating discharge operation, the Discharger must submit a work plan, for review and approval by the CPM, in consultation with the Regional Board Executive Officer, to determine the extent (if any) of contamination to natural geologic materials and underlying groundwater by the waste. **One hundred twenty days (120)** following work plan approval, the Discharger must submit a technical contamination assessment report. A California Registered Civil Engineer or Certified Engineering Geologist must prepare the work plan and technical contamination assessment report.

20. Upon ceasing operation at this facility, all waste, liner system components, and natural geologic material contaminated by waste and surplus or unprocessed material, shall be removed from the site and disposed of in accordance with applicable laws and regulations. After removal of all wastes, the Discharger should request in writing an inspection and approval by the CPM and a representative of the Regional Board Executive Officer.

21. **Two years prior** to closure of the facility or any portion thereof, the Discharger must submit, for review and approval by the CPM, in consultation with the Regional Board Executive Officer, a closure plan in accordance with Section 21769.

22. The closure plan must include at least the following:

    ii. Facility location map;
    iii. Topographic maps;
    iv. Existing monitoring and control systems;
    v. Land uses;
    vi. Estimated closure date and schedule;
    vii. General closure description;
    viii. Other special requirements;
    ix. Revised closure cost estimates (if appropriate); and
    x. Any other applicable requirements as specified in CCR Title 27.

23. The Discharger must notify the CPM and the Regional Board Executive Officer at least **180 days** prior to beginning of any partial or final closure activity of the evaporation ponds.

24. The Discharger must maintain the established irrevocable bond for closure in an amount acceptable to the CPM, in consultation with the Regional Board Executive Officer, or provide other means to ensure financial security for closure. The amount of bond may be changed to reflect updated closure cost adjusted for inflation at the discretion of the CPM, in consultation with the Regional Board Executive Officer.

25. In the event of any change in control or ownership of land or waste discharge facility presently owned or controlled by the Discharger, the Discharger must notify the succeeding owner or operator of the existence of these WDRs by

letter, a copy of which must be immediately forwarded to the CPM and the Regional Board.

To assume operation under these WDRs, the succeeding owner or operator must apply in writing to the CPM and the Regional Board Executive Officer requesting transfer of these WDRs. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for maintaining contact with the CPM and the Regional Board, and a statement, as follows. The statement shall comply with the signatory paragraph of Standard Provision and shall state that the new owner or operator assumes full responsibility for compliance with these WDRs. Failure to submit the request will be considered a discharge without requirements, a violation of the California Water Code. Transfer must be approved or disapprove in writing by the CPM, in consultation with the Regional Board Executive Officer.

26. Prior to a modification that results in any material change in the quality or quantity of waste discharge, or a material change in the location of waste discharge, the Discharger must report all pertinent information in writing to the CPM and the Regional Board Executive Officer and obtain revised WDRs for inclusion in the CEC certification.

27. All permanent containment structures, and erosion and drainage control systems, must be certified by a California Registered Civil Engineer or Certified Engineering Geologist to meet prescriptive standards and performance goals.

28. The Discharger must ensure that all site-operating personnel are familiar with the content of these requirements, and that a copy of these WDRs remains available at the facility.

29. The Discharger must allow authorized representative(s) of the CPM and/or Regional Board to:

    a. Enter the premises regulated by these WDRs, or the place where records are kept under the conditions of these WDRs;

    b. Have access to and copy records kept under the condition of these WDRs;

    c. Inspect at reasonable times facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these WDRs; and

    d. Sample or monitor for the purpose of assuring compliance with these WDRs or as authorized by the California Water Code, any substance or parameter at this location.

30. The Discharger must comply with terms and conditions of these WDRs. Any noncompliance constitutes a violation of the WDRs pursuant to the Porter-Cologne Water Quality Act (Water Code Section 13000 et seq.), and is grounds for enforcement action by the CEC or the Regional Board.

31. These WDRs do not convey property rights of any sort, or any exclusive privilege, nor does it authorize injury to private property, or invasion of personal rights, nor infringement of federal, state or local laws or regulations.

32. Pursuant to the California Business and Professions Code Sections 6735, 7835, and 7835.1 all engineering and geologic evaluations and judgments must be performed by or under the direction of California registered professionals.

# Appendix B

## SOIL AND WATER RESOURCES
## MONITORING AND REPORTING PROGRAM – Rice Solar Energy Project, Class II Disposal Facility, Riverside County

***Note:*** *the site's declared Monitoring Parameters (MonPars) under Part II.A.4 and the Reporting Period declaration under Part I.D.1, of this Monitoring and Reporting Program (MRP), together with MRP Part III (for reference purposes) and the waste and surface impoundment sampling of Parts II.B. and II.C., become effective on the day that the CEC certification for this site becomes effective. All MRP requirements are in-effect as of the start of the first six-month-long Reporting Period [see Part I.D.1 of this MRP] following approval of the Discharger's Concentration Limit Report [see WDR Provisions C.10].*

### *PART I -- GENERAL REQUIREMENTS*

### *A. GENERAL*

A Discharger who owns or operates a Class II Surface Impoundment is required to comply with this site-specific Monitoring and Reporting Program (MRP) in order to meet the provisions of Title 27, Division 2, Chapter 3, Subchapter 3, Article 1 of the California Code of Regulations for the purpose of detecting, characterizing, and responding to releases to the groundwater. Because this will be a new facility, there is no existing release. Therefore, the purpose of this MRP is to establish a Detection Monitoring Program that meets the first of the Title 27 purposes ("detecting").

1. This MRP is established pursuant to Provisions C.1 of the Appendix B WDRs. The principal purpose of this self-monitoring program is:

a. To document compliance with Waste Discharge Requirements (WDRs), and prohibitions established by the California Energy Commission, in consultation with the Colorado River Basin Regional Water Quality Control Board (Regional Water Board);

b. To facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge;

c. To conduct water quality analyses designed to detect a release from any of the three regulated surface impoundments at the facility.

*2.* The Energy Commission's Compliance Project Manager (CPM), in consultation with the Regional Water Board Executive Officer, may alter the monitoring parameters and/or the monitoring frequency during the course of this monitoring program if deemed necessary. *Failure to comply with this MRP constitutes noncompliance with the WDRs and the California Water Code, which can result in imposition of civil monetary liability.*

### *B. SAMPLING AND ANALYTICAL METHODS*

Sample collection, storage, and analysis must be performed according to the most recent version of USEPA approved methods. Specific methods of analysis must be identified. f methods other than USEPA-approved methods are used, the exact methodology must be submitted for review and approval by the CPM, in consultation with the Regional Water Board Executive Officer, prior to use. All analyses shall be conducted by a laboratory certified by the California Department of Public Health to perform the required analyses. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the CPM and the Regional Water Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurement. For any left-censored concentration data point (i.e., either a non-detect {ND} value, or trace value), the laboratory should report the Method Detection Limit (MDL) and Practical Quantitation Limit (PQL) for that determination and, if feasible, should include an estimated concentration (e.g., with a “P-value” flag, and with the concentration estimate in parentheses) for any trace value determination.

### *C. RECORDS TO BE MAINTAINED*

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the CPM, in consultation with the Regional Water Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;

2. Date and time of sampling;

3. Date and time that analyses were started and completed, and the initials of the personnel performing each analysis;

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

5. Calculations of results; and

6. Results of analyses, and the MDL and PQL for each analysis.

### *D. REPORTING*

1. <u>Detection Monitoring Reports</u> – For each Monitored Medium, all Monitoring Points and Background Monitoring Points assigned to detection monitoring under Part II.A.7 of this MRP shall be monitored **semiannually** for the **Monitoring Parameters** (**Part II.A.4**). Unlike with most WMUs under Title 27

WDRs, there will be no five-yearly monitoring for those COCs that are not Monitoring Parameters, given that, for this site's WMUs, there are so few waste constituents that each COC is a Monitoring Parameter. The monitoring year's first Reporting Period begins on March 1 and ends on August 31, with the report due by September 15; the second Reporting Period begins on September 1 and ends on February 28, with the report due by March 15.

A "Detection Monitoring Report" shall be submitted to both the CPM and the Regional Water Board in accordance with the schedule contained in the Summary of Self-Monitoring and Reporting Requirements, and shall include the following:

a. A Letter of Transmittal that summarizes the essential points in each report shall accompany each report submittal. The letter of transmittal shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter of transmittal must include:

    i. A discussion of any violations noted since the previous report submittal and a description of the actions taken or planned for correcting those violations. If no violations have occurred since the last submittal, that should be so stated;

    ii. If the Discharger has previously submitted a detailed time schedule or plan for correcting any violations, a progress report on the time schedule and status of the corrective actions being taken; and

    iii. A statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. A Compliance Evaluation Summary shall be included in each Detection Monitoring Report. The compliance evaluation summary shall contain at least:

    i. Velocity and direction of groundwater flow for each monitored groundwater body under and around the surface impoundment based upon the water level elevations taken during the collection of water quality data at the start of the Reporting Period and during a separate mid-Period velocity-and-direction determination. For each of these two determinations, include a description and graphical presentation (e.g., arrow on a map);

    ii. Methods used for water level measurement and pre-sampling purging for each monitoring well addressed by the report including:

a. Method, time, and equipment used for water level measurement;

b. Type of pump used for purging, placement of the pump in the well, pumping rate, and well recovery rate;

c. Methods and results of field testing for pH, temperature, electrical conductivity, and turbidity, including; equipment calibration methods, and method for disposing of purge water

iii. Methods used for sampling each Monitoring Point and Background Monitoring Point, including:

a. A description of the type of pump, or other device used, and its placement for sampling;

b. A detailed description of the sampling procedure: number and description of samples, field blanks, travel blanks, and duplicate samples; types of containers and preservatives used; date and time of sampling; name and qualifications of individual collecting samples, and other relevant observations;

c. A map or aerial photograph showing the locations of Monitoring Points, and Background Monitoring Points;

d. For each Detection Monitoring Report, provide all relevant laboratory information including results of all analyses;

e. An evaluation of the effectiveness of the run-off/run-on control facilities;

f. A summary of reportable spills/leaks occurring during the reporting period; include estimated volume of liquids/solids discharged outside designated containment area, a description of management practices to address spills/leaks, and actions taken to prevent reoccurrence.

2. Annual Summary Report – The Discharger shall submit to the CPM and Regional Water Board, an "Annual Summary Report" for the period the prior and current Reporting Periods; this Annual Summary Report can be combined with the monitoring report for the Reporting Period just ending (see Part I.D.1 of this MRP). The "Annual Summary Report" is due **March 15** of each year, and shall include the following:

a. A graphical presentation of analytical data for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(14)), in the form of a concentration-versus-time plot showing all data, for that MonPt/MonPar pair, obtained for that pair during at least the prior five calendar years. Each such graph can plot the concentration of a given MonPar over time for a given Monitoring Point and Background Monitoring

Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given monitoring parameter, the scale for background plots shall be the same as that used to plot down gradient data. On the basis of any aberrations noted in the plotted data, the CPM, in coordination with the Regional Water Board Executive Officer, may direct the Discharger to carry out a preliminary investigation (Title 27, Section 20080(d)(2)) the results of which will determine whether or not a release is indicated;

b. A tabular presentation of all monitoring analytical data obtained during the previous two Monitoring and Reporting Periods, submitted on hard copy within the annual report as well as digitally on electronic media in a file format acceptable to the CPM, in consultation with the Regional Water Board Executive Officer (Title 27, Section 20420(h)). The submittal of data in hard copy and on diskette CD-ROM constitutes the "... form necessary for..." statistical analysis, in that this facilitates periodic review of the Discharger's declared monitoring and testing results;

c. A comprehensive discussion of the compliance record and any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with WDRs;

d. **Annual Influent sampling report** containing analytical results of quarterly samples collected from the waste collection system prior to disposal to evaporation ponds, and evaporation pond sampling results as specified in Part II B and C of this MRP, respectively.

e. A written summary of the groundwater analyses, indicating changes made since the previous annual report;

f. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27, Section 20365;

g. The following two appendices, updated to reflect conditions at the end of that monitoring year's just-completed (#2-of-2) Reporting Period:

   i. **Appendix A —** a table having a record (row) for each MonPt/MPar pair (i.e., for each Monitoring Parameter at each Monitoring Point) that shows that pair's: then-current concentration limit type (e.g., enter "interpoint" and background MonPt name, if the data is from a background MonPt, or enter "intrapoint," if the data comes from that same MonPt during at least its initial two years); retesting method (either "pass-1-of-3" or "pass-1-of-2"); background data points; Threshold Value ("TV," calculated by applying the data analysis method {declared under Part I.D.2.g.i} to that pair's concentration limit); and compliance status (enter "Detection Mode" if the pair has shown no retest-verified release indication or "Tracking Mode" if there has

been such an indication). This is how this MRP implements Title 27, Section 20390(a); and

ii. **Appendix B —** a table showing, for each then-current data analysis compliance-testing method, a description thereof [including, for statistical methods applied to readily-detectable inorganic waste constituents, the value used for each parameter setting (e.g., alpha = 0.01)], and a list of each MonPt/MonPar pair that uses that method. For “Detection Mode” MonPt/MonPar pairs (i.e., pairs that have not shown a verified release indication) that are evaluated under the California Nonstatistical Data Analysis Method (CNSDAM), the description is "CNSDAM, per the MRP." For a statistical method applied to a MonPt/MonPar pair in Detection Mode, the description is adequate if a person familiar with the method can apply it to that pair's declared concentration limit in the above-required table (Part I.D.2.g.i of this MRP) and come up with the same Threshold Value (TV) as declared for that pair in that table. For any (release-affected) MonPt/MonPar pair in Tracking Mode, the TV is the background mean value (serving as that pairs respective cleanup concentration goal), which shall be plotted as a horizontal line on that pair's respective concentration-versus-time plot (included elsewhere in the Annual report). For any statistical method following the USEPA's 2009 Unified Guidance (UG) the method description can be the method’s name, the UG page range(s) to be following in calculating the TV, and the parameter settings. This is how this MRP implements Title 27, Sections 20415(e)(7) and 20420(e); and

h. If appropriate (every four years) a proposed-and-validated update, under Part II.A.7.b. of this MRP, of the Concentration Limits to include appropriate new background data (from that MonPt/MonPar pair’s declared background data source).

3. <u>Contingency Reporting</u>

The Discharger shall report by telephone any spill that may endanger human health or the environment to the Regional Water Board Executive Officer and the California Emergency Management Agency as soon as: (1) the Discharger has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures. During non-business hours, the Discharger shall leave a message on the Regional Water Board office voice recorder. Any other type of spill, regardless of type or size, is to be reported to the CPM and the Regional Water Board by telephone within 48 hours.

After reporting a spill, a written report shall be filed with the CPM and the Regional Water Board Executive Officer within seven days, containing at a minimum the following:

i. A map showing the location(s) of the discharge/spill;

ii. A description of the nature of the discharge (all pertinent observations and analyses including quantity, duration, etc.); and

iii. Corrective measures underway or proposed.

a. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Monitoring Parameter (MonPar), that a release is tentatively identified, the Discharger shall immediately notify the CPM and the Regional Water Board verbally as to the Monitoring Point(s) and MonPar(s) involved, shall provide written notification by certified mail within seven days of such determination (Title 27, Section 20420(j)(1)), and shall conduct a discrete retest in accordance with Part III.A.3. If the retesting confirms the existence of a release, the Discharger shall carry out the requirements of Part I.D.3.d. In any case, the Discharger shall inform the CPM and the Regional Water Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest and the inclusion of a discussion of the event in the next scheduled Monitoring Report and a notation on it in the Annual Summary Monitoring Report summary section.

b. If either the Discharger or the CPM, in consultation with the Regional Water Board, determines that there is significant physical evidence of a release (Title 27, Section 20385(a)(3)), the Discharger shall immediately notify the CPM and the Regional Water Board of this fact by certified mail (or acknowledge the CPM's determination made in consultation with the Regional Water Board) and shall carry out the requirements of Part I.D.3.d. for all potentially-affected monitored media.

c. If the Discharger concludes that a release has been discovered:

i. If this conclusion is not based upon "direct monitoring" and compliance testing of the MonPars, pursuant to Part II.A.5., then the Discharger shall, within thirty days, sample for all MonPars at all Monitoring Points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the CPM and Regional Water Board, by certified mail, of the concentration of all MonPars at each Monitoring Point. Because this is a scan, rather than an application of the site's statistical-or-nonstatistical data analysis method, merely obtain and report a single concentration datum for each MonPar at each Monitoring Point (Title 27 Section 20420(k)(1));

ii. The Discharger shall, within 90 days of discovering the release (Title 27, Section 20420(k)(5)), submit to the CPM and the Regional Water Board an addendum to the site's Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20425; and

iii. The Discharger shall, within 180 days of discovering the release [Title 27, Section 20420(k)(6)], submit to the CPM and the Regional Water Board a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20430.

d. Any time the Discharger concludes - or the CPM, in consultation with the Regional Water Board Executive Officer directs, the Discharger to conclude - that a release from the surface impoundment has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

i. Initial notification to Affected Persons should be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release; and

ii. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding a material change in the nature or extent of the release has occurred.

4. <u>Leakage Detection System (LDS), and Solids Monitoring</u>

a. Reporting shall be conducted **semi-annually**.

b. Provide volume of solids removed from the holding pond each month for that reporting period, and transported to a waste management facility for disposal. Include name and location of waste management facility.

c. Conduct **quarterly** inspections of Leakage Detection System (LDS), and evaporation ponds.

## *PART II -- MONITORING REQUIREMENTS FOR GROUNDWATER*

### *A. GROUNDWATER SAMPLING and ANALYSIS FOR DETECTION MONITORING*

1. Groundwater Surface Elevation and Field Parameters – Groundwater sampling and analysis shall be conducted semiannually pursuant to California rulings, and include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity, turbidity) at each groundwater sampling location (Title 27, Section 20415(e)(13) & (e)(15)). In addition, the Discharger shall make a mid-Reporting-Period determination of the elevation (at each groundwater sampling location). If a given well is to be sampled (in addition to the groundwater elevation determination), the groundwater elevation shall be obtained prior to purging the well and sample collection. The resulting suite of location-specific groundwater elevation values shall be used to produce the quarterly groundwater flow rate/direction analyses required under Part I.D.1.b.i. Groundwater wells shall have their water surface elevation gauged using an electronic sounder capable of measuring depth to groundwater within 100th of an inch. Following gauging, wells that are to be sampled shall be purged according to EPA groundwater sampling procedures until:

   a. pH, temperature, and conductivity are stabilized within 10%, and
   b. turbidity has been reduced to 10 NTUs or the lowest practical levels achievable.

   The above identified parameters shall be recorded in the field, and submitted in the monitoring report. Sampling equipment shall be decontaminated between wells. Purge water may be discharged to the brine pond; discharge to the ground surface is prohibited.

2. Groundwater Sample Collection – Groundwater samples shall be collected from all groundwater monitoring points and background monitoring points after wells recharge to within at least 80% of their original static water level. Groundwater samples shall be collected with a peristaltic pump that is decontaminated between sampling events. Samples shall be labeled, logged on chain-of-custody forms, and placed in cold storage pending delivery to a State certified analytical laboratory.

3. Five-Day Sample Procurement Limitation – To satisfy data analysis requirements for a given reporting period, samples collected from all Monitoring Points and Background Monitoring Points shall be taken within a span not exceeding five days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Title 27, Section 20415(e)(12)(B)). Therefore, in order to accommodate the pass-1-of-3 retesting approach used under the MRP for statistically-tested Monitoring Parameters (MonPars), and the pass-1-of-2 retesting approach used for VOCs under the nonstatistical test method, the first sample of the Reporting Period, for all COCs at all Monitoring Points and Background Monitoring Points, shall be taken at the very start of the Reporting Period. If the first sample exceeds that MonPt/MonPar pair's respective Threshold Value, then the Discharger

shall take and process a mid-Reporting-Period retest sample (for that MonPt/MonPar pair). If a second retest is needed (pass-1-of-3 approach only), the Discharger will take the sample just prior to the end of that Period and, in that case only, will not take a sample for that MonPt/MonPar pair at the start of the subsequent Report.

Under a pass-1-of-3 retesting approach for a statistically-based test, the Threshold Value shall be calculated in accordance with the USEPA's **Unified Guidance** (2009) or other guidance that lowers the TV to compensate for the effect of retesting[8], and the initial release-indication shall prevail only if both retests confirm the original indication. This MRP applies this improved approach in place of Title 27's prescriptive pass-2-of-3 approach and retest-within-30-days approach (applicable to statistical tests), as allowed pursuant to §20080(a)(1) of that Title.

Under a pass-1-of-2 retesting approach for the nonstatistical method included in this MRP, the initial **release**-indication shall prevail only if the single retest confirms the original indication.

4. Groundwater Monitoring Parameters for Detection Monitoring – Groundwater samples collected from monitoring points and background monitoring points shall be analyzed for the following:

| **Parameter** | **Unit** | **Sample Type** |
|---|---|---|
| Total Dissolved Solids (TDS) | mg/L | Grab |
| EC (Electrical Conductivity) | µmhos/cm | Grab |
| pH | pH units | Grab |
| All Volatile Organic Compounds ever detected above their PQL in wastewater (see MRP Part II.B) | µg/L | Grab |
| CCR Title 22 Heavy Metals, Dissolved (As, Ba, Cd, Pb, Zn, etc) | mg/L | Grab |
| Oil & Grease | mg/L | Grab |
| Total Petroleum Hydrocarbon (TPH-gas & diesel) | µg/L | Grab |

For all Monitoring Points and Background Monitoring Points, the initial sampling event for each of the two semi-annual Reporting Periods shall early in March and September, respectively, of each year in accordance with Parts I.D.1 and II.A.3. of this MRP. Monitoring results obtained during a given Reporting Period shall be reported in the semiannual Detection Monitoring Report for that Reporting Period.

[8] For example, for a 95% Gamma Upper Prediction Limit, see the Table 4 discussion at the back of: **One-Sided Approximate Prediction Intervals for at Least p of m Observations from a Gamma Population at Each of r Locations**, by DK Bhaumik and RD Gibbons [TECHNOMETRICS, February 2006, VOL. 48, NO. 1] and **Simultaneous Gamma Prediction Limits for Ground Water Monitoring**, by RD Gibbons and DK Bhaumik [Ground Water Monitoring & Remediation 26, no. 3 / Summer 2006 / pages 105-116].

5. Data Analysis – Non-statistical and statistical compliance-testing data analysis, whether for an initial sample (for that Reporting Period) or a retest sample, shall be carried out as soon as the data is available, in accordance with Part III of this monitoring program.

6. Monitoring Points and Background Monitoring Points – The Discharger shall sample the Monitoring Points and Background Monitoring Points listed in the approved report submitted under Part C.10 of the WDRs, which report is incorporated by reference in this MRP, in accordance with the sampling schedule given under Parts I.D.1., II.A.3, and II.A.4 of this MRP, by obtaining a single new concentration datum for each MonPt/MonPar pair for each initial test (for that Reporting Period) or retest, and subjecting it to the most appropriate test under Part III. In addition, the Discharger shall sample each background monitoring point at least once each Reporting Period.

7. Initial Background Determination – The initial background data set (Concentration Limit) for each MonPt/MonPar pair is established under the approved report submitted under Part C.10 of the WDRs. However:

   a. **New MonPars or Wells**

      i. Whenever a new waste constituent is added to the MonPars in the Water Quality Protection Standard, the Discharger shall collect at least one (1) sample **quarterly** for two (1) years from each Monitoring Point and Background Monitoring Point in each monitored medium. Nevertheless, for any of these eight data points (for that new MonPar at each sampling location), the Discharger can substitute existing data for that constituent, from the sampling location. As part of the next scheduled Monitoring Report following completion of this data collection effort, the Discharger shall propose a Concentration Limit for that new MonPar at each Monitoring Point, as was done initially under Part C.10 of the WDRs. The new Monitoring Parameter and its Concentration Limits become effective during the Reporting Period following the approval of the Rice Solar Energy Project; and

      ii. Whenever a new Monitoring Point is added, the Discharger shall sample the new monitoring point at least **quarterly** for at least two (2) years, and shall propose an appropriate Concentration Limit for each MonPar there, as done initially under Part C.10 of the WDRs analyzing for all Monitoring Parameters. The new Monitoring Point, and the Concentration Limits for each MonPar there, become effective during the Reporting Period following the approval of the Rice Solar Energy Project.

   b. **Updating Concentration Limits —** The updating of the Concentration Limit for each MonPt/MonPar pair follows a four-year cycle, regardless of whether the Concentration Limit is of the interpoint or intrapoint type. Every four years after this monitoring program becomes effective, the Annual Summary Monitoring

Report will include a proposal to update each Concentration Limit by adding the data from its background data source, if appropriate. For each given MonPt/MonPar pair, the proposal shall create a pool of the eight prospective new data points and the Concentration Limit's most recent background data points and shall run a Sen's-Slope/Mann-Kendall test at 90% confidence, looking only for a significant upward slope (thus, it is really a one-tailed test at 95% confidence). In the absence of a significant slope indication, the Discharger shall declare that result and propose that the new data be added to that MonPt/MonPar pair's Concentration Limit. The revised Concentration Limits become effective during the Reporting Period following approval of the Rice Solar Energy Project.

8. Semiannual Reporting of the Quarterly Determination of Groundwater Flow Rate/Direction [Title 27, Section 20415(e)(13) & (e)(15)] – The groundwater flow rate and direction determinations done twice each Reporting Period under Part I.D.1.b of this MRP.

## *B. WASTE COLLECTION SYSTEM SAMPLING*

Influent samples shall be collected from the waste collection system, which receives combined industrial waste streams generated at the facility. The samples should be representative of the volume and nature of the discharge. Influent sampling should include the following, with the results included in each Annual Summary Monitoring Report and with due attention paid to any non-MonPar constituent present in excess of its respective PQL:

| **Parameter** | **Unit** | **Sample Type** | **Frequency** |
|---|---|---|---|
| Total Dissolved Solids (TDS) | mg/L | Grab | Quarterly |
| EC (Electrical Conductivity) | µmhos/cm | Grab | Quarterly |
| pH | pH units | Grab | Quarterly |
| Volatile Organic Compounds | µg/L | Grab | Annually |
| CCR Title 22 Heavy Metals, Dissolved (As, Ba, Cd, Pb, Zn, etc) | mg/L | Grab | Annually |
| Oil & Grease | mg/L | Grab | Quarterly |
| Total Petroleum Hydrocarbon (TPH-gas & diesel) | µg/L | Grab | Quarterly |

For Volatile Organic Compounds (VOCs), any VOC detected pursuant to this waste testing that is present in excess of its respective PQL concentration becomes a Groundwater MonPar. For any such new VOC MonPar, the Discharger shall meet the data gathering and submittal requirements of MRP Part II.A.7.a.i.

Note that sampling and analysis under this Part and Part II.C. begins as soon as there is waste to sample, even though groundwater compliance testing is not yet in effect, and that, until groundwater compliance testing begins, this information will

constituent the majority of the information in the semi-annual Monitoring Reports and the Annual Summary Monitoring Report.

### *C. EVAPORATION PONDS / SURFACE IMPOUNDMENT SAMPLING*

| **Parameter** | **Unit** | **Sample Type** | **Frequency** |
|---|---|---|---|
| Freeboard | feet | Measurement | Monthly |

The Discharger must inspect the condition of lined evaporation ponds each month and record visual observations (e.g., in data sheets or bound logbook). Notations, which shall be included in each Reporting Period's monitoring report, shall include observations of whether weeds are developing along the bank, whether scum, or debris accumulating on the water surface; whether burrowing animals or insects are present.

### *D. FACILITY MONITORING*

1. Annual Inspection

   The Discharger should conduct an annual rainy season inspection. The inspection must assess the facility drainage control systems, WMUs, retention basin, groundwater monitoring wells, and fencing. Any necessary construction, maintenance, or repairs must be completed within 15 days of the inspection. The Discharger must include its finding and any corrective action taken in the Annual report.

2. Seismic Events

   The Discharger must implement the Post-Earthquake Inspection and Response Plan following any seismic event which causes significant ground motion at the site.

## *PART III -- STATISTICAL AND NON-STATISTICAL ANALYSES*

### *A. STATISTICAL DATA ANALYSIS METHODS*

The Discharger shall use any one of the following statistical data analysis methods for each MonPt/MonPar pair having a Concentration Limit consisting of (all or mostly) numerical concentration values, including estimated concentrations ("J" values), rather than "ND" determinations. The best method for a given MonPt/MonPar pair may not be the same for another MonPar at that MonPt or for that same MonPar at another MonPt, so the proposal [under WDR Part C.10] must be specific to each MonPt/MonPar pair:

1. A parametric Upper Prediction Limit run in accordance with the USEPA's **Unified Guidance**[9] ("**UG**", 2009) manual;
2. A parametric Shewhart Control Chart run in accordance with the USEPA's UG;
3. A parametric 95% Gamma Upper Prediction Limit run in accordance with the two papers (by Gibbons and Bhaumik) listed in the footnote to MRP Part II.A.3; or
4. If none of the above methods are suitable, another method used in accordance with the USEPA's UG.

All statistical methods used for validating ongoing compliance (Detection Mode testing) shall use a pass-1-of-3 plan for retesting [see MRP Part II.A.3], with the retest-triggering concentration (Threshold Value) lowered to compensate for the retesting approach, pursuant to the UG or the Gibbons/Bhaumik papers referenced above.

### *B. NONSTATISTICAL DATA ANALYSIS METHOD (NSDAM)*[10]

1. **Non-Statistical Method For Detection Mode MonPars Seldom Found In Background —** For any given Monitoring Point (MonPt) subject to compliance testing each Reporting Period, the discharger shall use this data analysis method, jointly, for all Monitoring Parameters (MonPars) on that MonPt's "scope list" (see ¶III.B.1.a. for the initial test scope list and ¶III.B.2.b for the modified scope list used during the single retest).
   a. **Scope List —** Create a current "scope list" for that MonPt showing each detection mode MonPar, at that MonPt, that exceeds its respective MDL in less than 10% of its background data set (Concentration Limit).
   b. **Two Triggers —** From the scope list made for that MonPt under ¶III.B.1.a. above, for an initial test [or, for a retest, the modified scope list under ¶III.B.2.b, below], identify each scope-list-MonPar in the current sample from that MonPt that exceeds either its respective MDL or its respective PQL. The discharger shall conclude that these exceeding MonPars provide a preliminary indication [or,

[9] The **Unified Guidance** is available for downloading from http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/ .
[10] For this site, this nonstatistical test applies mainly to the VOC MonPars (i.e., those VOCs that have been detected above their respective PQL in the facility waste stream).

for a retest, provide a measurably significant release indication], at that MonPt, if either:

i. two or more of the MonPars on the MonPt's scope list exceed their respective MDL; or

ii. at least one of the MonPars on the MonPt's scope list equals or exceeds its respective PQL.

2. **Single Discrete Retest (A "Pass-1-of-2" Plan):**

a. In the event that the discharger concludes [pursuant to paragraph III.B.1.ii.b., above] that there is a preliminary indication, then the discharger shall immediately notify the CPM and the Regional Water Board staff by phone or e-mail and obtain a new independent (retest) sample from the indicating MonPar at mid-Reporting-Period.

b. For any given MonPt retest sample, the discharger shall include, in the retest analysis, only the laboratory analytical results for those constituents indicated in that MonPt's original test [under ¶III.B.1.b.], and these indicated constituents shall comprise the MonPt's "modified scope list," for use in the retest. As soon as the retest data are available, the discharger shall apply the same test [under ¶III.B.1.b, above, but using this modified scope list] to analyze the retest sample's data at that compliance MonPt.

c. If the retest sample trips either (or both) of the triggers under ¶ III.B.1.b, then the Discharger shall conclude that there is a measurably significant increase at that MonPt for the constituent(s) indicated in the validating retest sample. Furthermore, given a confirming retest, beginning with the next Reporting Period, the discharger shall monitor the indicated-and-verified constituent(s) in Tracking Mode (instead of Detection Mode) at that MonPt, shall report this conclusion immediately to the CPM and Regional Water Board, shall remove the indicating constituent(s) from the scope list created (under ¶III.B.1.a. of this M&RP) for that MonPt, and shall highlight this release-indication conclusion and these changes in the next scheduled monitoring report and in the facility's operating record.

## C. CULTURAL RESOURCES

This section addresses the cultural resources associated with the Rice Solar Energy Project (RSEP), including potential impacts related to project construction, operation and decommissioning. The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

Cultural resources are categorized as buildings, sites, structures, objects, and districts under California state law (for the purposes of the California Environmental Quality Act (CEQA). Three kinds of cultural resources, classified by their origins, are considered in this assessment: prehistoric, ethnographic, and historic. Three kinds of cultural resources, classified by their origins, are considered in this assessment: prehistoric, ethnographic, and historic.

When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Res. Code, § 5024.1; Cal. Code Regs., tit. 14, § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a “unique” archaeological resource under California Environmental Quality (CEQA) (*see* Pub. Res. Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. The Office of Historic Preservation’s Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

The CEQA Guidelines provide a definition of a historical resource as a “resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR,” or “a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code,” or “any object, building, structure, site, area, place, record, or manuscript which a

lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." [Cal. Code Regs., tit. 14, § 15064.5(a).] Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. [Pub. Res. Code, § 5024.1(d).]

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: it is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, it is associated with the lives of persons significant in our past (Criterion 2); or, that the resource embodies the distinctive characteristics of a type, period, or method of construction, or that it represents the work of a master, or possesses high artistic values (Criterion 3); or, that it has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). (Pub. Res. Code § 5024.1.) In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. [Cal. Code Regs., tit. 14, § 4852(c); Pub. Res. Code § 5020.1 (j) or 5024.1.] Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource

We have revaluated the project in accordance with the requirements of CEQA and applicable laws, ordinances, regulations, and standards (LORS). The LORS are identified in Appendix A to this Decision.

The evidence was undisputed. (10/29/10 RT 21, 124-126; Exs. 1, 3. 4 [78-88], 9 [6, 7], 20, 28, 32, 36, 40, 49; 203 § 6.3,208, 210.)

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Setting

The RSEP power block and solar arrays would cover approximately 1,410 acres of a 2,560-acre project site, immediately south and adjacent to State Route (SR)

62 in unincorporated Riverside County. The RSEP is within the Colorado Desert. The generating facility would be constructed on privately owned land and connected to the Western Area Power Administration's (Western) Parker-Blythe #2 transmission line by a 10.0-mile-long generation tie line. The transmission line would be situated primarily on BLM-managed lands. (Ex. 203, p. 6.3-5.)

The project's power block and solar arrays would be located on the site of the Rice Army Airfield (AAF) and a portion of Camp Rice, a World War II (WWII) desert training base that was part of the infantry and artillery Desert Training Center, California-Arizona Maneuver Area (DTC/C-AMA). It was used by General George S. Patton, Jr., from 1942-1944 to prepare American soldiers for combat in the North African desert. Little remains of Camp Rice or the Rice AAF on the ground, aside from a few foundations, concrete pads, and defunct runways. However, the outline of both the airport and Camp Rice can still be easily discerned from the air. (Ex. 203, p. 6.3-5.)

The project would have minimal to moderate ground disturbance impacts on the site area. Within the heliostat field, vegetation would be removed to near ground level and, overall, would retain the existing terrain without any significant grading for placement of the heliostat pylons or piers. The most significant grading would occur in the power block area and for wastewater evaporation ponds (three ponds at 5 acres each or a total of 15 acres). Trenching for installation of utilities (water, electric, gas, and communication) would occur to a depth of ten feet. Drainage diversion channels would be excavated around the northern half of the perimeter of the project facility, with the perimeter access road acting as a berm to prevent storm water from running onto the RSEP site from upslope areas. Grading and excavation would be necessary for the foundations of the project structures, including the central tower, heliostats, pipe racks, turbine, administration buildings, storage tanks for water and liquid salt, and transmission poles. Estimated foundation depths for the central tower range between 6 and 20 feet, with a diameter of about 115 feet. The donut foundation would have a central depth (immediately beneath the tower) of 20 feet and decreasing to a depth of 8 feet at the outer edges. Foundations for the heliostats would be 10 to 12 feet deep and 33 inches in diameter. Installation of the two project wells would require boring to a depth of about 190 feet.

The site is generally flat, with elevations ranging from about 720 feet (220 meters) above sea level (ASL) at the southern boundary to approximately 820 feet (250 meters) ASL in the north, along SR 62. Native plant revegetation is sparse to moderate and interrupted by the remains of the asphalt, gravel,

concrete pads, foundations, runways, and taxiways. A number of small, dry desert washes traverse the project area, but no large ephemeral washes are present. There are no structures on the site, except for a few decaying foundations stemwalls, and no active use. The proposed project site can best be described as extensively disturbed land that has been unused for about 50 years and is gradually reverting to desert.

2. Regional Geology, Paleoclimate, and Paleoenvironment

The record summarizes literature documenting pertinent characteristics of the region's geology, paleoclimate and paleoenvironment. (Ex. 203, pp. 6.3-7 – 6.3-10.) According to the literature, the RSEP is within the geomorphic province known as the basin and range, situated in the Rice Valley between the Turtle Mountains to the north and the Big Maria and Little Maria Mountains to the south. The geomorphic landscape consists of a broad bajada (a coalescing of neighboring alluvial fans into a single apron of deposits) from the Turtle Mountains, with parallel drainages of rills, gullies, and washes flowing south-southwest toward a dune field southwest of the project area.

The underlying geology consists of alluvial deposits derived from Quaternary dune sands, and recent alluvium composed of sand, silt, clay, and gravel. These range from Pleistocene (1 million years old) to Holocene (8,000 BC to Recent) in age. Holocene alluvium less than 11,000 years old often is similar to older Pleistocene alluvium. It is typified by moderately to poorly bedded sands, silts, and gravels

Quaternary alluvium, composed of eolian sand sheets/dunes, locally derived fill, and disturbed sediment mantles underlies most of the proposed receiver tower/heliostat and transmission line. Alluvial fans extending south from the Turtle Mountains contain fine-grained clasts (coarse gravel and finer clastic sediment). Within the heliostat field, they are uniformly fine-grained sediments.

Plant macrofossils found in packrat middens provide the information on paleoclimate and paleoenvironment for the southern Mojave and northern Sonoran (Colorado) deserts. The periods from the Early Holocene (10,000-6,000 BC) up through prehistory, are described in record. (Ex. 203, p. 6.3-8 – 6.3-10.) Regarding the latter, the evidence establishes that BLM conducted a large-scale cultural resources inventory of the Central Mojave and Colorado Desert Regions in the 1970s.

3. Regional Chronology and Culture History

Pertinent characteristics of key regional time periods are described by the evidence. (Ex. 203, p. 6.3-10 – 6.3-12.) The time periods are as follows:

- The Paleo-Indian Period (about 10,000–8,000 BC) In the Southern California deserts, is characterized by the presence of various types of leaf-shaped, often fluted, lanceolate, and stemmed points, assigned to the Clovis and Western Pluvial Lakes Traditions. It has been suggested that Paleo-Indian peoples were highly mobile, and repeatedly occupied preferred sites. A preference for lowland occupation and increasing use of upland habitats through time is suggested. A possible early emphasis upon hunting large, sometime extinct, terrestrial mammals, and exploiting marsh resources appears to have shifted through time to increased use of seeds and other plant resources along with small game.

- The Lake Mojave complex (about 10,000–8,000 BC) also known as the Western Pluvial Lakes/Western Stemmed Tradition, occurs during the second half of the Early Holocene. It is characterized by Great Basin Stemmed Series projectile points (Lake Mojave and Silver Lake types), abundant bifaces, steep-edged unifaces, crescents, and occasional cobble tools and ground stone tools. These artifacts often occur in undated surface contexts. Assemblage composition and site structure suggest highly mobile foragers, often traveling considerable distances.

- The Deadman Lake complex (7,500–5,200 BC), which appears to be confined to the Twenty-nine Palms area, is characterized by surficial sites located on old alluvial pediments. Artifacts include small-to-medium-size contracting stemmed or lozenge-shaped points, large concentrations of battered cobbles and core tools, and abundant bifaces, simple flake tools, and ground stone tools.

- The Pinto complex (8,000–3,000 BC) spans portions of the Early and Middle Holocene. Toolstone use, based on sites attributed to this complex, focus upon materials other than obsidian and cryptocrystalline silicate (CCS). Pinto Series points are stemmed with indented bases, and display high levels of reworking. Bifacial and unifacial cores/tools are common. Ground stone tools are moderately to very abundant.

- The Gypsum complex (1,000 BC–AD 200), spanning most of the Early Late Holocene, is characterized by the presence of corner-notched Elko Series points, concave-base Humboldt Series points, and well-shouldered contracting-stemmed Gypsum Series points. Numerous bifaces also occur. Manos and metates are relatively common.

- From the Rose Spring Complex (AD 200–AD 1000), well-developed middens have yielded artifact assemblages containing knives, drills, pipes, bone awls, various ground stone tools, marine shell ornaments, and large amounts of obsidian. Obsidian procurement and processing apparently significantly structured settlement-subsistence. During the middle of this period, a major drought (the Medieval Climatic Anomaly) occurred, resulting in hypothesized resource shortages.

- During the Late Prehistoric period (AD 1000–AD 1700), ceramic artifacts began to appear in the Colorado Desert. A complex cultural landscape composed of rock art, trails, and geoglyphs developed during this period. Trade and exchange were elaborated, with an emphasis on links between coastal southern California and the Southwest. In addition to pottery, artifact assemblages include Desert Series projectile points, shell and steatite beads, and a variety of milling tools. Obsidian use declines significantly, with CCS becoming the dominant toolstone. (Ex. 203, pp. 6.3-10 – 6.3-12.)

4. Cultural Chronology

The rich cultural history of the Rice Region is documented in the record, with discussion of the inhabitants, settlement patterns, technological organization, and commerce. (Ex. 203, pp. 6.3-13 – 6.3-18.)

In summary, the Chemehuevi are the most likely Native American group ethnohistorically inhabiting the Ward/Rice Valley region. Adjacent groups included the Serrano, Cahuilla, Mojave, Maricopa, and Halchidhoma. The Rice project area is located within the southern part of Chemehuevi territory. Mohave territory was to the east. The Las Vegas group of Southern Paiute were to the north-northwest. The Serrano were to the west-southwest. (Ex. 203, pp. 6.3-18 – 6.26.)

5. Historical Background of the Rice Valley

Historic Themes. Transportation in the desert region appears to have been initiated in the sixteenth century by Spanish explorers. It was not until about 1846 that trans-desert crossings occurred. During the opening stages of the Mexican-American war, General Stephen Watts Kearny led an advance column of the United States Army into the southern California desert. Next came the discovery of gold in California, which brought travelers by way of the Yuma Crossing. The presence of so many travelers along this route highly impacted the desert. Whereas previous expeditions made the journey in isolation, during the Gold Rush, trails became de facto highways. Companies of miners frequently

encountered one another, or encountered recently vacated campsites. The desert floor also became littered with articles abandoned when they either fell apart or proved too heavy or cumbersome for transport. Broken wagons, furniture, articles of clothing, tools and even weapons left by the side of the road became a bonanza for scavengers. After 1851, travel to California along the southern route through the Colorado Desert declined.

By 1910, when automobiles began replacing buckboards (four-wheeled wagons drawn by a horses or mules) about 1910, there was travel through the desert. The California Department of Engineering, after paving its first auto road in 1912, began issuing maps in 1918. Roads remained unpaved for the most part through the 1920 with the exception of a two-mile wood planked section between Brown's Well and Blythe Junction. A decade later, during the construction of the Colorado River Aqueduct, Parker Dam Road (renamed California State Route 62 in 1970) became part of the paved road network. This road runs along the northern boundary of the project site.

Many rail lines cross the Mojave and Sonoran Deserts including the Union Pacific, the Central Pacific (CP), the Southern Pacific (SP), and the Atchison, Topeka, and Santa Fe (ATSF). Of these railroads, lines formerly part of the ATSF run parallel to and north of the RSEP parcels. The ATSF was initially established in 1860 to run from Atchison and Topeka, Kansas to Santa Fe, New Mexico. After completing this mainline segment, the railroad quickly expanded both east and west.

Between February 1882 and August 1883, the Atlantic and Pacific (AP) Railroad constructed a line between Mojave and Needles, California. Crossing the southern Mojave Desert from west to east, the railroad passed through Barstow, Ludlow, Amboy, Cadiz, and Goffs. From Needles the route proceeded east across north-central Arizona and New Mexico to Albuquerque, New Mexico. Operating control of the Mojave Desert portion of the line immediately passed to the SP. Control of the AP was later vested in the ATSF.

During the rest of the 1880s, the ATSF expanded its presence in California, reaching San Diego and San Francisco. Needles and Mojave became important operational centers. Two decades later, ATSF constructed a line from Phoenix into California. Parker was finally reached on June 17, 1907. During 1916, the 41-mile Palo Verde branch line was built by the California Southern Railroad. It extended from Rice (originally known as Blythe Junction) south to Blythe.

Irrigation and water use in the region involved construction of the Colorado River Aqueduct, which runs immediately north of Rice. In 1928, fearing droughts and future water shortages, 13 Southern California cities (Los Angeles, Burbank, Glendale, Pasadena, San Marino, Beverley Hills, Santa Monica, Torrance, Compton, Long Beach, Fullerton, Anaheim, and Santa Ana) formed the Metropolitan Water District of Southern California (MWD). During November-December 1930, the Parker route for the aqueduct was adopted. On September 29, 1931, by a five-to-one margin, MWD voters approved a $220 million bond issue to construct the Colorado River Aqueduct.

Construction was completed on October 14, 1939. The aqueduct is recognized as one of the engineering marvels of the modern world, and was nominated as a National Historic Engineering Landmark by the American Society of Civil Engineers. .A portion of the aqueduct runs along the northern edge of the RSEP site.

With respect to mineral resources, Riverside County is known mostly for sporadic, small-scale mining of gold, silver, lead, copper, uranium, fluorite, and manganese. As early as 1865, iron ore was being mined in the Eagle Mountain District southwest of the RSEP. The RSEP project area is surrounded by a number of mining districts. They include the Arrow (90 miles northwest of the project), Freeman (located 40 miles northwest of Project Area from the Old Woman Mountains east to the Chemehuevi Mountains), Chemehuevi (northeast of Project Area, approximately 30 miles, within the Whipple Mountains), Copper Basin (also located in the Whipple Mountains), and Sunrise (roughly 15 miles north in the Turtle Mountains) Districts. In addition, several local mountain ranges also have produced significant mineral commodities, including the Arica and Little Maria mountains.

Former Community of Rice. Rice, originally named Blythe Junction, was a small community, adjacent to a subdivision and siding on the AP/ATSF Railroad. Currently, Rice is a vacant site with no standing structures or residents. Along the right-of-way of the Arizona and California Railroad (formerly the ATSF), travelers along Highway 62 have spelled out their names and other forms of graffiti with ballast stones taken from the railroad grade.

Century Camp Cady. With the increase in traffic along southern California desert routes, the U.S. government thought it necessary to establish military outposts to protect travelers from Native American attacks. Major facilities were established at Fort Yuma from 1850-1883, Fort Mojave (1859-1890), and Camp Cady

between 1860 to 1871. Camp Cady was established on April 14, 1860, roughly 130 miles northwest of Rice Army Air Field. This camp was not intended to be permanent, and therefore, Major Carleton only constructed temporary shelters made of grasses for his men. Fort Beale was later established as a sub-post of Camp Cady. This installation was located about 10 miles north of Goffs.

Camp Cady was officially re-activated on April 23, 1865, housing Company C, 4th California Volunteer Infantry for a little over a year until July 6, 1866. Before this time, the only "structures" at the camp were hastily made brush shelters. After 1866, permission was received to construct 35 adobe buildings (Hart 2009). Despite this, the government attempted to close the camp during the same year, but public pressure for continued military protection was too strong. Later in 1866, five soldiers were killed. Threats to the area required continual patrols and wagon train escorts increasing the number of soldiers in the camp to 120 men.

Eventually the need for Camp Cady was less important, and it was moved one-half mile west in 1868 to a location with sufficient area for a parade ground, which was not possible at its former site. In 1868, the number of troops was cut in half as safer, more efficient, travel routes were established elsewhere. Finally in 1871, the camp's buildings were sold to civilians, and used by missionaries.

<u>The Desert Training Center</u> In 1942, during World War II, General George S. Patton established the Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA) in a sparsely populated region located in southeastern California, Arizona, and Nevada. Its purpose was to prepare tank, infantry, and air units for the harsh conditions of North Africa by practicing maneuvers, developing tactics, and field testing equipment. The installation, operated for two years, was originally 10,000 square miles in extent, reaching 28,000 square miles by mid-1943. The facility was the first simulated theater of operations in the United States. Its location was chosen for its unforgiving desert heat, rugged terrain, telephone communications system, accessibility by established railroads and highways, and its proximity to the Colorado River Aqueduct that ensured a reliable water supply.

Throughout its existence the Desert Training Center, renamed the California-Arizona Maneuver Area in October 1943, experienced logistical problems with obtaining supplies and transporting troops, compounded by a chronic lack of service units. As a result, the War Department closed the facility in April 1944, turning it over to the 9th Service Command which policed the area, closed the camps, and collected/salvaged all equipment and materials. Following the end of

World War II, little was left of the post's facilities, except foundations, road grids, and other features.

Camp Rice. Camp Rice was a divisional camp of the DTC/C-AMA, located three miles east of the community of Rice, California, immediately adjacent to Rice Army Air Field (AAF). As with all divisional camps, Camp Rice was constructed as a temporary facility to create a realistic wartime conditions training atmosphere for stationed military personnel. Built during early 1942, the camp housed the 5th Armored Division from August to October 1942. Men of the 6th Armored Division resided there from November 1942 to March 1943.

Rice Army Air Field. Rice Field pre-dated World War II. It began as a municipal airport for the community of Rice constructed sometime after 1932. A decade later, the airport was acquired by the 4th Air Support command and was in military use by October 26, 1942. As part of the combat training, the Army Air Force and the Army Service Force were included, serving as support to Army Ground Forces (AGF).

The Rice AAF had two 5,000-foot runways and numerous dispersal pads. The airfield contained barracks, recreation and mess halls, powerhouses, and support facilities to house 3,000 men. By 1943, 4,000 men were reportedly stationed there. The 836th Engineer Aviation Battalion was temporarily stationed in adjacent Camp Rice to assist in construction/improvement of the airfield before being moved to Camp Young which had better amenities.

After the DTC/C-AMA was closed on April 30, 1944, Rice AAF was assigned to March Field as a sub-base. It ceased operating on August 2, 1944. In 1949, the field was reopened as a civilian airport. The air field was privately owned from 1951 through 1955. Its final abandonment occurred sometime between 1955 and 1958. (Ex. 203, pp. 6.3-26-6.3-35.)

6. Evaluation Methodology – Specifying Areas of Potential Effect (APE)

Archaeological Resources. For archaeological resources, Staff defined the horizontal extent of the APE to include the project property; the CEC mandated minimum 200-foot buffer around the ownership property, the approximately 10-mile long generator tie-line with an associated 100-foot buffer, substation with a 100-foot buffer. Following these CEC mandates, the RSEP horizontal archaeological APE encompasses a total of 4,002-acres (3,772.8 for the ownership property/generator tie-line/switchyard and 228.9 for the buffer area)

and 2,291 acres for the considered, but rejected, possible fiber optic overhead ground-wire replacement (764 acres in the existing right-of-way and 1,527 acres for the buffer area). (Ex. 203, p. 6.3-36.)

The archaeological APE also includes a vertical dimension determined based on the maximum depth that would be reached by all foundation excavations and pipeline trenches.

Built-Environment Resources. For built-environment resources, staff has defined the horizontal extent of the APE to include the project footprint and a surrounding half-mile buffer.

Ethnographic Resources. No ethnographic resources were identified and therefore an APE was not defined. (Ex. 203, pp. 6.3-36 - 6.3-38.)

7. Cultural Resources Inventory

The Applicant conducted a records search for the area (including a California Historical Resources Information System (CHRIS) search) encompassing a 1.0-mile buffer around the proposed RSEP plant site and a 0.5-mile buffer around the transmission line corridor. Seven previous studies had been conducted within the 1-mile radius of the project. Three of these studies were conducted within the proposed RSEP archaeological resources APE. (Ex. 203, pp. 6.3-38, 6.3-39.)

Three previously recorded resources, all of the historic era, are within the RSEP study area. Of these, one (Camp Rice) is located within the archaeological APE.

The three sites include Camp Rice, the Atchison-Topeka-Santa Fe Railroad, and the Colorado River Aqueduct. (Ex. 203, p. 6.3-39.)

The Applicant and Staff conducted archival and library research as part of the analysis of cultural resources. (Ex. 203, pp. 6.3-39 - 6.3-40.)

The evidence also summarizes efforts to confer with local organizations and Native American representatives. The Applicant's agent contacted various local agencies and organizations requesting information for the ownership property and surrounding area but received no responses. The Applicant's agent also contacted the Native American Heritage Commission (NAHC) requesting a list of local Native Americans who might have concerns about the RSEP and a search of the Sacred Lands Files for any known resources that might be affected by

project impacts. The NAHC responded, indicating that that there were no known Native American cultural resources in the area. NAHC provided a list of individuals representing local Native American communities. Only one tribe responded and that was merely to request continued consultation.

The record establishes that Western Area Power Administration representatives also initiated contact with local Native Americans. Among those contacted were individuals from the Ramona Band of Cahuilla Mission Indians, Twenty-Nine Palms Band of Mission Indians, the Chemehuevi Reservation, the Colorado River Indian Tribe Reservation, the AhaMaKav Cultural Society (Fort Mojave Indian Tribe), the Morongo Band of Mission Indians, the San Manuel Band of Mission Indians, and the Torres-Martinez Desert Cahuilla Indians. A tribal meeting and site visit was held on April 8, 2010, with representatives from three tribes (Fort Mojave, Fort Yuman-Quechan, and Twenty-Nine Palms Band) in attendance. These tribes expressed interest in conducting an ethnohistory study for the proposed project area. (Ex. 203, pp. 6.3-40 - 6.3-42.)

8. Field Inventory Investigations

The Applicant conducted surveys of the main project footprint (heliostat field) and gen-tie line (4,002 acres) to identify previously unrecorded cultural resources in both the archaeological and built environment APEs. The survey included a pedestrian archaeological survey and a built-environment windshield survey. No survey of the Parker-Blythe Transmission Line No. 2 was conducted as it had been previously surveyed in 1997. The Applicant also conducted a geoarchaeological study to determine the likelihood of encountering buried cultural deposits. (Ex. 203, p. 6.3-42.)

As a result of the pedestrian survey, two new resources were recorded: an historic road segment along the transmission generator tie-line, and the Rice Army Air Field (AAF). The survey team recorded features at the western periphery of previously recorded Camp Rice, producing a site record update. The team also found 141 archaeological features and 98 artifact concentrations associated with the RAAF/Camp Rice.

The archaeological features include 18 debris features (burned & unburned, piled or placed in pits); 14 earthen features (emplacements, a firing butt, a mound, and berms); 52 pits (unlined, rock lined, wood lined); 5 trenches; 31 concrete slabs (remnants of structures within the RAAF including, but not limited to, kitchens, bathhouses, lavatory, barracks/officer's quarters, dispensary, headquarters,

enlisted mess hall, and airfield operations building); 12 stone features (rock piles, rock alignments, aerial markers); and 9 miscellaneous features such as a drain, sign bases, sidewalk, wells, and wooden posts). (Ex. 203, p. 6.3-43, Cultural Resources Table 5, Appendix A.)

The historic artifact concentrations include refuse scatters or burned debris dumps, composed primarily of fuel cans, miscellaneous metal, paint cans, and food/beverage cans. Twenty-seven of these locations are located within in the receiver tower area.

The geoarchaeological investigations included excavations of two test trenches for presence/absence of paleosols, archaeological artifacts, or other evidence of archaeological deposition. Each trench was excavated to a depth of roughly 10 feet (~3-meters). Two alluvial units, each possessing several horizons, were identified. Trench 1 provided the most complete stratigraphic sequence. The upper portion of Trench 2 was apparently removed during grading/construction of the RAAF and replaced by 16 to 30 cm of recompacted fill and rubble. From these observations, it appears that that the Holocene (the last 10,000 years) is restricted to roughly the top 20 cm. Applicant's archaeologist regarded it unlikely that subsurface archaeological resources exist within the project area. (Ex. 203, pp. 6.3-43 – 6.3-44.)

The field survey for the built-environment APE was conducted congruently with the archaeological resources survey. The Energy Commission mandates a minimum 0.5 mile radius from the plan site and generator tie-line. The only structures over 45 years of age within the vicinity of the RSEP site are State Route 62, the Colorado River Aqueduct, and the Atchison, Topeka, and Santa Fe Railroad, all of which have been previously recorded and are outside the APE. As Rice AAF and Camp Rice structures were dismantled when they were closed, the architectural survey instead relied heavily on the literature review and historic aerials in order to create a complete context for the area. (Exs. 1, pp. 5-7; 203, p. 6.3-44.)

The evidence of record indicates 77 sites are present within the APE including previously recorded resources and two new resources identified by the Applicant team. (Ex. 203, pp. 6.3-43 - 6.3-45.) Two of the resources, the Rice AAF and Camp Rice, contained numerous features and artifact concentrations, including refuse scatters, pits, and rock alignments. **Cultural Resources Table 1** below summarizes these cultural resources.

**Cultural Resources Table 1**
**Summary of Cultural Resources within the Archaeological APE**
**(Previously Identified & Newly Discovered)**

| Site Era | Site Type | Total |
|---|---|---|
| Historic | Small Unnamed Military Camps | 2 |
| | Camp Rice | 1 |
| | Rice Army Air Field | 1 |
| | Mining Camps | 2 |
| | Roads | 1 |
| | Refuse Scatters/Dumps | 6 |
| | Historic Structural Remnants | 1 |
| | | |
| Prehistoric | Ceramic Scatters | 1 |
| | Geoglyphs | 1 |
| | Lithic Scatters/Quarries | 32 |
| | Trail Segments (some with lithics, quarries, geoglyphs, ceramics) | 29 |
| | **Total** | **77** |

Source: Ex. 203, p. 6.3-44 (Cultural Resources Table 7).

The two new resources include the historic Rice AAF and an unnamed, unimproved dirt road.

9. NRHP and CRHR Evaluations

Previously Recorded Resources within the APE.

The only other resource previously recorded within the APE is Camp Rice. It has not been evaluated. (Ex. 203, p. 6.3-46.)

Newly Recorded Resources

As stated above, two new resources were identified during the Applicant's surveys of the RSEP heliostat field and gen-tie line: the historic Rice AAF and an unnamed, unimproved dirt road. New features and artifact concentrations, associated with the previously recorded Camp Rice were also identified.

*Unimproved Dirt Road*. We find that the road, while still having physical integrity, does not appear to be significant. Thus, it appears ineligible for both the NHRP and CRHR. (Ex. 203, p. 6.3-46.)

*Rice AAF and Camp Rice*. This resource is eligible for listing in the NRHP, having sufficient integrity to reflect their important historical association with the DTC/C-AMA. It was a multifaceted facility containing many important elements,

still evidenced by elaborate, improved-surface runways, taxiways, dispersal pads, streets, rock-lined walkways associated with a tent area, and foundations for various temporary structures such as barracks, mess halls, kitchens, lavatories, bathhouses, operations, etc. This resource meets all NRHP Criteria which are essentially the same as the above-described CRHR Criteria 1-4. Camp Rice is also eligible for listing in the NRHP for substantially similar reasons. (Ex. 203, p. 6.3-46.)

*Desert Training Center Cultural Landscape (DTCCL).* The evidence explains that in 1986, the BLM planned to nominate each of the Desert Training Center's seven camps to the NRHP, to develop an interpretive program for the DTC/C-AMA, and to provide historical resources protection through designation as an Area of Critical Concern (ACEC). Furthermore, Bischoff concluded it was a significant resource under all four criteria of the NRHP. (Ex. 203, p. 6.3-47.)

Staff and the federal reviewers (Western and BLM) support the designation of a noncontiguous cultural landscape (historic district) that incorporates historical archaeological sites associated with Gen. Patton's World War II DTC/C-AMA, to be known as the Desert Training Center Cultural Landscape (DTCCL). The NRHP guidance for districts and cultural landscapes requires identifying certain characteristics, including boundaries, one or more periods of significance, thematic associations, and property (resource) types. The boundaries of the DTCCL need to be refined based on the historical record. The period of significance is 1942–1944. The thematic associations include the nation's preparation for World War II, U.S. Military Training, Gen. George S. Patton, Jr., and Gen. Walton Walker. The DTCCL site types include, but are not limited to depots, airfields, ranges, bivouacs, maneuver areas, camps, and hospitals supports nominating this site to the NRHP and recording it as multiple properties consisting of contributing and noncontributing elements to the district. (Ex. 203, pp. 6.3-47, 6.3-60.)

Energy Commission staff, Western, and BLM recommend that DTCCL is eligible for listing on the NRHP under Criteria A through D (CRHR Criteria 1-4). The DTC/C-AMA was the largest and the only such military training facility in American military history. The training that took place here undoubtedly helped to win World War II. Contributors to this landscape associated with the RSEP include the following: Rice AAF, Camp Rice, two other small military training camp sites and a military refuse dump. (See, Ex. 203, Cultural Resources Table 10.)

Potential Impacts

a. Construction

The main facility footprint will adversely and substantially impact nearly all of the features and artifact concentrations recently recorded within the Rice AAF and western periphery of Camp Rice. Because these resources are assumed to be contributing properties to the World War II DTC/C-AMA, the proposed project will also directly impact the DTCCL.

In addition, possible construction impacts may also occur to 23 previously recorded sites recommended eligible for the NRHP along the Parker-Blythe Transmission Line No. 2.

**Cultural Resources Table 2** below lists CRHR and NRHP eligible resources subject to direct project impacts. (Ex. 203. p. 6.3-57.)

**CULTURAL RESOURCES Table 2**
**NRHP and CRHR-Assumed Eligible Cultural Resources Subject to Direct Project Impacts**

| Resource | Resource Descriptions | NRHP/CRHR Eligibility |
|---|---|---|
| DTC/C-AMA Cultural Landscape | Rice AAF/Camp Rice (with associated features and artifact concentrations), as well as Riv-5987, -5988, and -5990 | Assumed Eligible |
| Historic Road | Road-1 | Assumed Eligible |

*Assumed Eligible resources with asterisks are ones that were recommended eligible by Schaeffer et al. (1998) but that have not received concurrence from the Office of Historic Preservation.
Source: Ex 203, p. 6.3-57 (**Cultural Resources Table 10**).

To reduce potential impacts to these resources to less than significant levels, we adopt Conditions of Certification **CUL-2** through **CUL-14**. Each condition is provided below; but the pertinent aspects of each are summarized as follows.

**CUL-2** requires the project owner to obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRSs to manage all monitoring, mitigation, curation, and reporting activities in accordance with the Conditions of Certification. Under **CUL-3,** prior to the start of ground disturbance, the project owner must provide the CRS and Project Historical Archaeologist (PHA) with copies of the AFC, data responses, confidential cultural resources documents,

Staff Assessment (SA/DEIS), and any subsequent revision or supplement to the SA/DEIS. The project owner shall also provide the CRS, PHA, and Compliance Program Manager (CPM) with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas.

**CUL-4** requires the project owner to submit a Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PHA, to the CPM for review and approval. The CRMMP must specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. **CUL-5** requires the project owner to submit the final Cultural Resources Report (CRR) to the CPM for review and approval and to Western's archaeologist for review and comment. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses.

Under **CUL-6,** both prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. **CUL-7** requires the project owner to ensure that the CRS, alternate CRS, or CRMs shall monitor, full time, all ground disturbance, to prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

**CUL-8** requires the owner to grant authority to halt ground disturbance to the CRS, alternate CRS, PHA, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS. And, in the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance must be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts.

Under **CUL-9,** prior to the start of ground disturbance, the project owner must ensure that records for all 298 historic-period features be upgraded. The focus of the recordation upgrade is to recover any additional data associated with these features before they are destroyed during construction. **CUL-10** provides that if stipulations in the RSEP Section 106 Memorandum of Agreement (MOA), should

such a document be prepared and executed, conflict in a mutually exclusive manner with or precisely duplicate the conditions of certification in the Energy Commission Decision, the MOA provisions shall take precedence. **CUL-12** includes additional measures to avoid or reduce impacts.

Specifically regarding impacts to the Rice Army Airfield (Rice AAF), Camp Rice, and the surrounding DTC/C-AMA cultural landscape, we adopt **CUL-11**, **-13**, and **-14**.. Condition **CUL-11** requires the project owner to construct and maintain a Historic Interpretive Roadside Stop, including parking, shaded information kiosk, and trash receptacle.

**CUL-13** requires the project owner to produce a high-definition, broadcast quality documentary of the Rice Army Airfield (Rice AAF), Camp Rice, and the surrounding DTC/C-AMA cultural landscape, focusing on the integration and contributions of the Rice AAF and Camp Rice, to the DTC/C-AMA WWII military training mission, from an aviation perspective.

**CUL-14** requires the following actions by the project owner: 1) provide the design of at least one single page, double-sided tri-fold brochure and an initial production run of at least 1,000 copies to the General Patton Memorial Museum for public distribution, interpreting the significance of Rice AAF and Camp Rice as individual historical features and as contributing features within the DTC/C-AMA cultural landscape and 2) provide a donation in the amount of $25,000 to the General Patton Memorial Museum. The funds from this donation shall be earmarked for development and installation of displays and signage interpreting contributions of the Rice AAF and Camp Rice to the mission of the DTC/C-AMA at the General Patton Memorial Museum.

b. Operation

No direct or indirect operation impacts were identified by the evidence. (Ex. 203, p. 6.3-58.)

c. Project Closure and Decommissioning

Cultural resources within the proposed RSEP main facility footprint are expected to be destroyed during facility construction. Therefore, the closure and decommissioning of the proposed project is unlikely to cause additional impacts to known or previously unknown cultural resources. However, sites within the linear facilities corridor and near the boundary of the proposed project footprint

may still exist after RSEP construction and associated archaeological data recovery. These sites could be impacted by activities associated with project closure and decommissioning. However, no direct or indirect projects were identified by the evidence. (Ex. 203, p. 6.3-58.)

10. Cumulative Impacts

A cumulative impact refers to a project's incremental effects considered over time and together with those of other nearby, past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project. (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, § 15064(h), 15065(a)(3), 15130, and 15355.) Cumulative impacts to cultural resources in the RSEP project vicinity could occur if any other existing or proposed projects, in conjunction with the proposed RSEP, had or would have impacts on cultural resources that, considered together, would be significant. (Ex. 203, p. 6.3-58.)

The evidence establishes that the geographic scope for this project is fairly localized around the RSEP ownership boundary, however, given the nature of the Colorado Desert Valley system, the RSEP project area should not be limited to the Rice Valley, but should also include its northwest continuation into the Ward Valley (that includes Bristol and Cadiz Dry Lake system). The immediate mountain ranges should also be included in this scope: Turtle Mountains, Whipple Mountains, Chemehuevi Mountains, Old Woman Mountains, and Arica Mountains. These mountains represent the mining activities that took place in the immediate area and provide broader historic context for the region.

Four existing projects occur within the immediate vicinity of the RSEP project site: (1) the Rice Valley Grazing Allotment (which roughly borders the western, southern, and eastern boundaries of the RSEP); (2) the Arizona-California Railroad (parallels the northern boundary of the RSEP Project Area); (3) the Colorado River Aqueduct (also parallels the northern RSEP site boundary); and (4) Westerns' Parker Dam-Blythe transmission line #2. (Ex. 203, p. 6.3-59.) The railroad and aqueduct hold particular significance, as they contribute to the development of the area (transportation, mining, etc.). Modification/maintenance of these features may impact the archaeological components of Camp Rice.

Seven other existing projects have been identified within Rice Valley; however, they are well outside of the range of possible impacts to cultural resources for the RSEP proposed project area. Future foreseeable projects in the vicinity of the

site include a solar thermal power plant in the Ward Valley. We do not expect this project, which is over five miles from the RSEP to affect the project but it could affect the cultural environment.

As discussed above, the RESP will affect the Rice AAF and Camp Rice archaeological resource and alter the cultural environment of the area. With implementation of the Conditions of Certification (particularly **CUL-11**, the impact will be reduced to less than significant levels. When RSEP's impacts are combined with impacts from past, present, and reasonably foreseeable projects, the project could potentially contribute to cumulative adverse cultural resources impacts at both the local and regional levels.

However, because the other proposed future projects will likely undergo CEQA and/or NEPA review, we anticipate that they will also be subject to appropriate mitigation measures, and similar conditions would be applied. Sites that could not be avoided would be tested to evaluate significance. Register-eligible sites would be subject to historical documentation or data recovery excavations to mitigate impacts. To mitigate to the extent reasonable the region-wide, substantial cumulative impact to the DTCCL identified in this analysis, we adopt Condition of Certification **CUL-1**. **CUL-1** requires the project owner to contribute to a special fund set up by the Energy Commission and/or Western to finance the DTC/C-AMA Cultural Landscape Documentation and Possible NRHP Nomination Program (DTCCL Program) presented in the RSEP SA/DEIS. The amount of the contribution shall be $22 per disturbed or enclosed acre. (Ex. 203, pp. 6.3-1, 6.3-60 - 67.) The DTCCL Program is described in detail in the record.

11. Compliance with LORS

With the implementation of the Conditions of Certification, we find the project would comply with applicable LORS. (Ex. 203. pp. 6.3-56, 6.3-57, 6.3-73.) Specifically regarding local LORS, the evidence explains that the County of Riverside's General Plan promotes County-wide preservation of cultural resources. The programmatic agreement discussed in **CUL-10** requires specific actions not just to promote but to effect historic preservation and mitigate impacts to all cultural resources in order to ensure NEPA and CEQA compliance. Consequently, if the RSEP implements the recommended conditions of certification, its actions would be consistent with the general historic preservation goals of the County of Riverside. (Ex. 203, p. 6.7-73.)

## FINDINGS OF FACT

Based on the uncontroverted evidence, the Commission makes the following findings and reaches the following conclusions:

1. Both previous studies and the project-related studies identified cultural resources within the Rice Solar Energy Project's Area of Potential Effect.
2. The Sacred Lands files did not indicate the presence of Native American cultural resources within the project area.
3. There are three cultural resource sites identified from previous and new resource investigations within the project's Area of Potential Effect. Two of these resource sites, Rice AAF and Camp Rice, included numerous features and artifact concentrations.
4. The evidence of record indicates that the main facility footprint will adversely and substantially impact nearly all of the features and artifact concentrations recently recorded in the Rice AAF and the western periphery of Camp Rice.
5. Of the resources identified in previous studies, two sites were recommended as eligible for NRHPs. Both Rice AAF and Camp Rice have been identified as being eligible for the NRHPs.
6. The project assessment also recommended the designation of one cultural landscape: Desert Training Center.
7. We adopt Conditions of Certification **CUL-1** through **CUL-14** to reduce impacts to cultural resources to less than significant. (Ex. 203, pp. 6.3-1, 6.3-56, 6.3-57.)
8. The incremental effects on cultural resources of the Rice Solar Energy Project will not be cumulatively considerable when viewed in conjunction with other projects.

## CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification below, the RSEP Project will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.
2. Through implementation of the Conditions of Certification below, the project will have no significant environmental impacts.

## CONDITIONS OF CERTIFICATION

### CUL-1 DESERT TRAINING CENTER CALIFORNIA-ARIZONA MANEUVER AREA CULTURAL LANDSCAPE (DTCCL) PROGRAM

The project owner shall contribute to a special fund set up by the Energy Commission and/or Western to finance the DTC/C-AMA Cultural Landscape Documentation and Possible NRHP Nomination Program (DTCCL Program) presented in the RSEP SA/DEIS.

The amount of the contribution shall be $22 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20 percent of the original contribution. The contribution to the special fund may be made in installments, with the approval of the Compliance Project Manager (CPM), with the first installment to constitute 1/3 of the total original contribution amount.

If a project is not certified, a project owner does not build the project, or for any reason deemed acceptable by the CPM, a project owner does not participate in funding the DTCCL Program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCL Program research activities to match available funding. A project owner that funds the DTCCL Program and then withdraws shall be able to receive a refund of their contributions on a prorated basis.

**Verification:** Within two weeks (14 days) of the receipt of an invoice from the Energy Commission or BLM, the project owner shall contribute the entire amount of the required contribution or the first of three installments, equal to one-third of the total contribution amount, to the established funding vehicle for the Program. The delivery dates for the remaining installments shall be determined by the CPM, based on program requirements.

The project owner shall provide a copy of the notice of successful transfer of funds for any payment or installment to the DTCCL fund to the CPM within 10 days of receipt.

### CUL-2 CULTURAL RESOURCES PERSONNEL

Prior to the start of ground disturbance (includes preconstruction site mobilization and construction grading, boring, and trenching, as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRSs, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities in accordance with the Conditions of Certification (Conditions).

The CRS may obtain the services of Cultural Resources Monitors (CRMs), as needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS implements the cultural resources

conditions providing for data recovery from known historical resources and makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to Compliance Project Manager (CPM) approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including, but not limited to, non-compliance on this or other Energy Commission projects.

**Cultural Resources Specialist**

The resumes for the CRS and alternate(s) shall include information demonstrating, to the satisfaction of the CPM, that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications:

1. A background in anthropology and prehistoric archaeology; 2. At least 10 years of archaeological resource mitigation and field experience, with at least 3 of those years in California; and 3. At least 3 years of experience in a decision-making capacity on cultural resources projects, with at least 1 of those years in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the research specified in **CUL-9**. The Project Historical Archaeologist's (PHA) training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for historical archaeology, as published in Title 36, Code of Federal Regulations, part 61.

The resumes of the CRS, alternate CRS, and PHA shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. The project owner may name and hire the CRS, alternate CRS, and PHA prior to certification.

**Field Crew Members and Cultural Resources Monitors**

CRMs and field crew members, including the Special Interest Monitor (SIM)[1], shall have the following qualifications:

1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or
2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or
3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.

**Verification:**

1. Preferably at least 120 days, but in any event no less than75 days prior to the start of ground disturbance, the project owner shall submit the resumes for the CRS, the alternate CRS(s) if desired, and the PHA to the CPM for review and approval.

2. At least 65 days prior to the start of data recovery on known archaeological sites, the project owner shall confirm in writing to the CPM that the approved CRS (or alternate CRS) and PHA will be available for on-site work and are prepared to implement the cultural resources conditions of certification.

3. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project to the proposed new CRS. If no alternate CRS is available to assume the duties of the CRS, a monitor may temporarily serve in place of a CRS, for a maximum of three days, to allow ground disturbance to continue uninterrupted. If cultural resources are discovered, ground disturbance shall be halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

[1] The SIM may observe without meeting the qualifications identified in this subsection, but recommendations for the treatment of any unanticipated finds will be considered advisory only and will need approval from the CRS or alternate CRS to be implemented. SIMs without sufficient professional qualifications cannot act as or in place of a CRM.

4. At least 20 days prior to data recovery on known archaeological sites, the CRS shall provide a letter to the CPM for review and approval, naming anticipated field crew members for the project, providing resumes or other proof of qualifications, and attesting that the identified field crew members meet the minimum qualifications for cultural resources data recovery required by this Condition.

5. At least 20 days prior to ground disturbance, the CRS shall provide a letter to the CPM for review and approval, naming anticipated CRMs for the project providing resumes or other proof of qualifications, and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition.

6. At least 5 days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide letters to the CPM for review and approval, identifying the new CRMs, providing resumes or other proof of qualifications, and attesting to their qualifications.

**CUL-3 PROJECT DOCUMENTATION FOR CULTURAL RESOURCES PERSONNEL**

Prior to the start of ground disturbance, the project owner shall provide the CRS and PHA with copies of the AFC, data responses, confidential cultural resources documents, Staff Assessment (SA), and any subsequent revised or supplemental SA. The project owner shall also provide the CRS, PHA, and CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1” = 200’) for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, PHA, and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Until ground disturbance is completed, the project construction manager shall provide the CRS and CPM with a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur. The project owner shall notify the CRS and CPM of any changes to the schedule of construction phases.

**Verification:**

1. Preferably at least 115 days, but in any event no less than 60 days prior to the start of ground disturbance, the project owner shall provide the CRS, PHA, and CPM with copies of the AFC, data responses, confidential cultural resources documents, the Staff Assessment (SA), and any revised or supplemental SAs. The project owner shall also provide the CRS, PHA, and CPM with the subject maps and drawings. Staff, in consultation with the CRS, and PHA, will review and approve maps and drawings as suitable for cultural resources monitoring and data recovery activities.
2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS, PHA, and CPM.
3. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS, PHA, and CPM.
4. Weekly, during ground disturbance, a schedule of anticipated following week's project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

## CUL-4 CULTURAL RESOURCES MONITORING AND MITIGATION PLAN

Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PHA, to the CPM for review and approval. The authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, PHA, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM. Prior to certification, the project owner may have the CRS, alternate CRS, and PHA complete and submit the CRMMP to the CPM for review and approval, except for those portions to be contributed by the DTCCL programs.

The CRMMP shall include, but is not limited to, the elements and measures listed below.

1. The following statement shall be included in the Introduction: “Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A.”

2. The duties o the CRS shall be fully discussed, including coordination duties with respect to the completion of the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) documentation and possible NRHP nomination oversight/management duties with respect to site evaluation, data collection, monitoring, and reporting at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction.

3. A general research design shall be developed that:

    a. Charts a timeline of all research activities, including those coordinated under the DTCCL documentation and possible NRHP nomination program;

    b. Recapitulates the existing historic contexts developed in the DTCCL historic context and adds to these the additional context of the non-military, historic- period occupation and use of the Rice Valley, to create a comprehensive historic context for the RSEP vicinity;

    c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological resource types known for Rice Valley, based on the research questions developed under the DTCCL research and on the archaeological and historical literature pertinent to Rice Valley; and

    d. Clearly articulates why it is in the public interest to address the research questions that it poses.

4. Protocols, consistent with the guidance provided in **CUL-9**, shall be specified for the treatment of known and newly discovered prehistoric and historic-period archaeological resource types.

5. Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural resources materials and documentation resulting from evaluation and data

recovery at both known prehistoric and historic-period archaeological sites and any CRHR- or NRHP-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan may be included in the CRMMP for limited data types.

6. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks prior to and during the ground-disturbance and post-ground– disturbance analysis phases of the project shall be specified, taking into consideration any pre-construction ground disturbances that may require biological monitoring.

7. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.

8. All impact-avoidance measures (such a flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

9. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository or museum shall be stated.

10. The commitment of the project owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. The project owner shall identify a curation facility that could accept cultural resources materials resulting from RSEP cultural resources investigations.

11. The CRS shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from known CRHR-eligible archaeological sites and from CRHR-eligible sites that are encountered during ground disturbance .

12. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.

**Verification:**

1. Preferably at least 90 days, but in any event no less than 30 days prior to the start of site mobilization, the project owner shall submit the CRMMP to the CPM for review and approval.

2. At least 20 days prior to the start of site mobilization, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, data recovery).

3. At least 30 days prior to the initiation of site mobilization, the project owner shall provide to the CPM a copy of a letter from a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, stating the facility's willingness and ability to receive the materials generated by RSEP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.

## CUL-5 CULTURAL RESOURCES REPORT (CRR)

The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for review and approval and to Western's archaeologist for review and comment. The final CRR shall be written by or under the direction of the CRS. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, revised and final Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM, BLM Palm Springs archaeologist, and Western's archaeologist for review and approval on the same day as the

suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

**Verification:**

1. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

2. Within 180 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval and to the BLM Palm Springs archaeologist and Western's archaeologist for review and comment. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

3. Within 10 days after the CPM, BLM's archaeologist, and Western's archaeologist approve the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.

## CUL-6 WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.

The training shall include:

1. A discussion of applicable laws and penalties under the law;

2. Samples or visuals of artifacts that might be found in the project vicinity;

3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;

4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;

5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;

6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

7. An informational brochure that identifies reporting procedures in the event of a discovery;

8. An acknowledgement form signed by each worker indicating that they have received the training; and

9. A sticker that shall be placed on hardhats indicating that environmental training has been completed.

10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

**Verification:**

1. At least 30 days prior to the beginning of ground disturbance the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.

2. At least 15 days prior to the beginning of ground disturbance, the CPM will provide the project owner with a WEAP Training Acknowledgement form for each WEAP trained worker to sign.

3. Monthly, until ground disturbance is completed, the project owner shall provide, in the Monthly Compliance Report (MCR), the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

## CUL-7 CONSTRUCTION MONITORING PROGRAM

The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor, full time, all ground disturbance to prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

Consistent with the recommendations of the County of Riverside, a Special Interest Monitor (SIM), designated by the General Patton Memorial Museum, shall be allowed to monitor all ground disturbance consistent with the actions of a CRM. Any recommendations offered by the SIM shall be treated as advisory only and must be approved by the CRS or alternate CRS.

Full-time archaeological monitoring for this project shall include the archaeological monitoring of ground-disturbing activities by approved CRS or CPM in the areas specified, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than fifty feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material. The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM. In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e- mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring. The CRS, at his or her discretion, or at the request of the CPM, may informally discuss

cultural resources monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions of Certification.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

**Verification:**

1. At least 30 days prior to the start of ground disturbance, the CPM shall provide to the CRS an electronic copy of a form to be used as a daily monitoring log.

2. Monthly, while monitoring is on-going, the project owner shall include, in each MCR, a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.

3. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

4. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.

5. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.

6. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit, to the CPM, copies of the

information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.

7. The project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information within 15 days of receipt.

## CUL-8 AUTHORITY TO HALT CONSTRUCTION; TREATMENT OF DISCOVERIES

The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PHA, and the CRM's in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

If human remains are found, the project owner shall follow the requirements of the State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98(b). The Riverside County Coroner shall be notified and remains shall be left in place and free from disturbance until the final decision as to the treatment and their disposition has been made. If the remains are determined to be Native American, the Native American Heritage Commission (NAHC) shall be contacted within the period specified by law. Subsequently, the NAHC shall identify the "Most Likely Descendant." The Most Likely Descendant shall then make recommendations and engage in consultation concerning the treatment of the remains. Human remains from other ethnic/cultural groups with recognized historical associations to the project area shall also be subject to consultation among appropriate interested parties, CPM, Riverside County, and federal agency representatives (if the find occurs on federal public lands).

For unanticipated finds, excluding human remains, if a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance shall be halted within a minimum of 100 feet of the find or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.

2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.

3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.

4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery plan, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

**Verification:**

1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, PHA, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

2. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.

3. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

## CUL-9 DATA RECOVERY FOR RICE ARMY AIR FIELD AND CAMP RICE FEATURES

Prior to the start of ground disturbance, the project owner shall ensure that feature forms for all historic-period features at Rice Army Airfield and Camp Rice are completed to the satisfaction of the CPM. The focus of the recordation is to recover any additional data associated with these features before they are destroyed during construction. A plan shall specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. The project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the CPM, which shall include, but is not limited to the following tasks:

1. The project owner shall hire a PHA with the qualifications described in **CUL-2** to supervise the fieldwork.

2. The project owner shall ensure that, prior to beginning the fieldwork, the PHA and all field crew members are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. Army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.

3. The project owner shall ensure that, prior to beginning the fieldwork, the field crew members are also trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.

4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the geophysical survey), using geographic positioning system recordation equipment with sub-meter accuracy capable of recording locational data in a standard geo-reference grid coordinate system (such as UTM 11 North or California Teale Albers).

5. The project owner shall ensure that a detailed in-field analysis of a representative sample of diagnostic artifacts shall be completed, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on

bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Artifacts shall not be collected.

6. The project owner shall ensure a systematic geophysical survey of portions of the airfield is completed with inclusive coverage of the northern end of the site, where most of the military activities occurred, to identify and map the distribution of near-surface and buried materials/features. This survey shall be conducted with a mobile electromagnetic instrument and high-resolution GPS unit, measuring both conductivity and magnetic susceptibility (metal detection).

7. The project owner shall ensure that features having subsurface elements, including those identified in the geophysical survey, are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing.

8. The project owner shall ensure that the details of what is found at each Rice Army Airfield feature or new site shall be presented in a letter report from the CRS or PHA which shall serve as a preliminary report, that details what was found at each feature, as follows:

   a. Letter reports may address one feature or multiple features depending on the needs of the CRS; and

   b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the feature landforms.

   c. The letter report shall make a recommendation on whether each feature is a contributor to the DTTCL.

9. The project owner shall ensure that the data collected from the fieldwork shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the historic-period sites are contributing elements to the DTCCL.

10. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (**CUL-5**). Relevant portions of the information gathered may be included in the possible NRHP nomination for the DTCCL (funded by **CUL-1).**

**Verification:**

1. At least 90 days prior to ground disturbance, the project owner shall notify the CPM that mapping and upgraded in-field artifact analysis has ensued.

2. At least 60 days prior to ground disturbance, the project owner shall submit to the CPM for review and approval feature records and a letter report written by the CRS, evidencing that the field portion of data recovery at each particular feature has been completed and evaluating whether the feature contributes to the overall eligibility of the property consistent with the requirements of the CRMMP. When the CPM approves the letter report, ground disturbance may begin at the feature location(s) that are the subject of the letter report.

## CUL-10 COMPLIANCE COORDINATION WITH FEDERAL SECTION 106 MOA

If stipulations in the RSEP Section 106 Memorandum of Agreement (MOA), should such a document be prepared and executed, conflict in a mutually exclusive manner with or precisely duplicate the conditions of certification in the Energy Commission Decision, the MOA provisions shall take precedence. Where provisions for the implementation of historic preservation treatments in the conditions of certification are in addition to or exceed such provisions in the MOA, the applicant shall implement treatment in a manner that fulfills both the provisions of the MOA and the conditions of certification. Where the Applicant believes that a mutually exclusive conflict exists between these conditions and the provisions in the MOA, or that the said conditions and provisions appear to require a precisely duplicative effort, the applicant shall submit, for the review and approval of the CPM, formal correspondence that states the applicant's determination that such a conflict or effort exists and provides evidentiary support for that determination. Where provisions in the conditions of compliance appear to augment or exceed the provisions in the MOA, the project owner shall coordinate historic preservation treatment with the CPM. Such coordination may, at the discretion of the project owner, be on a formal or informal basis. However, the CPM shall make the final determination of the consistency of project activities with Energy Commission conditions of compliance.

**Verification:** Prior to the implementation of any historic preservation treatments in these conditions that may conflict in a mutually exclusive manner with any analogous treatments that a Federal MOA may provide or that may precisely duplicate such analogous treatments, the project owner shall consult with the CPM concerning any such conflicts and provide, for the review and approval of the CPM, formal correspondence that relates the outcome of said consultation, states the project owner's determination that a mutually exclusive conflict or precisely duplicative effort exists, and provides evidentiary support for that determination. The project owner shall not proceed with the implementation of

any historic preservation treatments that are subject to consultation under this condition until the CPM approves the applicant's determination thereon.

## CUL-11 HISTORIC INTERPRETIVE ROADSIDE STOP

Prior to the start of construction, the project owner shall provide conceptual plans for the Historic Interpretive Roadside Stop (HIRS or Roadside Stop) to the CPM for review and approval. Prior to commercial operation of RSEP, the project owner shall provide the final plans for the Roadside Stop to Western, BLM, and Riverside County for review and comment, and to the CPM for review and approval. Construction of the Roadside Stop shall be completed prior to the start of commercial operations. The project owner's plans for the Roadside Stop shall be coordinated with Caltrans and Riverside County, and shall be developed in a manner that does not compromise site or public safety or security.

The Roadside Stop shall include and make accessible to the public the following features:

1. An encroachment off SR 62 to the Roadside Stop and vehicle parking area, consistent with Caltrans, Riverside County, and the Americans with Disabilities Act (ADA) access and parking requirements. The vehicle parking area shall include:

   a. Four (4) parking spaces, including one van-accessible ADA-compliant parking space.

   b. The parking spaces and encroachment shall provide a level, all-weather surface, preferably of compacted rock, decomposed granite, or similar permeable material, or as required by Caltrans.

2. An interpretive kiosk, protected by a shade structure, that displays a minimum of five (5) panels of text and graphics that illustrate and interpret Rice AAF and Camp Rice as individual historic features and as components of the larger DTC/C-AMA. Access to the kiosk shall be handicap-accessible, over a level, all-weather surface, preferably of compacted rock, decomposed granite, or similar permeable material, or paved with asphalt concrete, consistent with Riverside County paving requirements and Caltrans encroachment requirements.

3. Self-closing, wildlife-resistant trash cans;

**Verification:**

1. At least 30 days prior to the start of construction, the project owner shall submit conceptual plans for the Roadside Stop to Western, BLM, and Riverside County for review and comment, and to the CPM for review and approval.

2. No later than one year following start of construction, the project owner shall submit final plans for the Roadside Stop to Western, BLM, and Riverside County for review and comment, and to the CPM for review and approval.

3. At least 30 days prior to the start of commercial operation, the project owner shall complete construction of the Roadside Stop and submit photographic proof of completion to the CPM for review and approval. The roadside stop shall be made accessible to the public within 10 days from the start of commercial operations and shall be maintained by the project owner for the life of the project.

4. In each Annual Compliance Report, the project owner shall provide a summary of the following:

   a. Estimated public visitation to the Roadside Stop;

   b. Any issues associated with operating and maintenance;

   c. Proposed maintenance and improvements, and a schedule for completion;

   d. A log of all completed maintenance and improvements to the Roadside Stop from the start of RSEP commercial operation to the present day.

**CUL-12 FLAG AND AVOID**

Resources just outside the northwestern portion of the main facility circular footprint would be preserved through avoidance. Previously recorded resources along Western's Parker Dam-Blythe Transmission Line No. 2, subject to possible project impacts associated with installation of the fiber optical cable (if this telecommunication option is implemented), shall be revisited prior to construction. In the event that new resources are discovered during construction or previously recorded resources would be additionally affected, where impacts can be reduced or avoided, the project owner shall:

1. Ensure that a CRS, alternate CRS or CRM re-establish the boundary of each site, add a 10-meter-wide buffer around the periphery of each site boundary, and flag the resulting space in a conspicuous manner;

2. Ensure that a CRM enforces avoidance of the flagged areas during RSEP construction; and

3. Ensure, after completion of construction, boundary markings around each site and buffer are removed so as not to attract vandals.

4. Site records for previously documented resources shall be updated.

**Verification:** Within 90 days of transmission line construction, the project owner shall submit for CPM review and approval, site record updates of resources subject to possible impacts. Within 90 days of the completion of plant construction, the project owner shall submit for CPM review and approval a letter, with photograph and maps, evidencing the removal of boundary markings.

## CUL-13 HISTORIC INTERPRETIVE DOCUMENTARY

The project owner shall produce a high-definition, broadcast quality documentary of the Rice Army Airfield (Rice AAF), Camp Rice, and the surrounding DTC/C-AMA cultural landscape, focusing on the integration and contributions of the Rice AAF and Camp Rice, to the DTC/C-AMA WWII military training mission, from an aviation perspective. Costs for the documentary (including pre- and post-production costs) shall not be required to exceed the industry average of $4,500 per minute. The final edited documentary shall be at least 26 minutes in length, excluding titles and credits. An approximately 10-minute abbreviated version of the documentary shall also be produced using primarily material from the 26-minute documentary.

1. Prior to the start of filming, the project owner shall provide the qualifications of the proposed production company to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval. The production company shall have experience in the creation of historic documentary-style videos, and shall provide evidence of the successful completion of at least three videos of similar quality from project development to release. A copy of any scope of work related to the production of the documentary shall be submitted to the CPM within 10 days of execution.

2. Prior to the start of filming, the project owner shall also submit the resume of a proposed production advisor to the CPM for review and approval. The production advisor, shall be a qualified historian, with training and experience consistent with the requirements of the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the advisor must have experience researching and documenting historic

military resources, preferably within the DTC/C-AMA. The production advisor shall provide direction during production and post-production to ensure historical accuracy and to provide assistance obtaining historic WWII documentation (e.g., military film and training footage, news clips, still photos, audio and written transcripts of interviews) and the most recent information on Camp Rice and the Rice AAF in particular, and the DTC/C-AMA in general.

3. Prior to the start of site mobilization, the production company shall take the initial aerial footage of the remains of the Rice AAF and Camp Rice facilities along with representative features and training fields surrounding the project area, as necessary to convey the context of the Rice AAF and Camp Rice within the DTC/C-AMA. Aerial footage may also document the remains of other facilities and features in the project vicinity that are integral or contributing to the DTC/C-AMA cultural landscape, including airfields, camps, bombing ranges, and the King's Throne (where Patton sat to observe maneuvers). Historic film; still photos; re-creations; interview footage and audio tracks; and compatible, high-quality video footage of the subject areas taken prior to current filming may also be integrated into the final product. The original acquisition format shall be high definition, 16X9, 1080p digital format, using broadcast-level cameras and lenses. The aerial documentation shall be photographed using a television motion picture, industry-accepted camera stabilization system, mounted to a helicopter.

4. Prior to the start of production editing, the project owner shall submit a first draft script, storyboard, and description of other related project elements, including proposed finished length of the documentary (a minimum of 26 minutes of edited footage for the full-length version and 10 minutes for the abbreviated (excerpt) version), to the DTCCL PI-Historian, production advisor, and Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

5. Prior to the start of commercial plant operations, the project owner shall submit the final cut, with voice-over and background music track, along with packaging proofs, including sample cover, disk label, and packaging materials, to the DTCCL PI- Historian, production advisor, and Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

6. Concurrent with the start of commercial plant operations, the project owner shall provide the final approved full-length documentary to the General Patton Memorial Museum in a high definition format, suitable for mass market duplication, along with 500 DVD copies and 100 BluRay copies of the full-length packaged documentary, suitable for resale. Ten

DVD copies and five BluRay copies of the packaged documentary shall also be provided to the BLM Palm Springs-South Coast Field Office, Western, and the CPM. The 10-minute excerpt shall be provided to all parties in a digital format compatible with display requirements of the Museum and webcasting requirements of BLM, Western, and the Energy Commission.

7. In conjunction with delivery of the final approved documentary in the designated format, the project owner shall provide a letter to the General Patton Memorial Museum confirming that the Museum is assigned and shall exclusively retain all DVD, BluRay, and video reproduction and sales rights, and broadcast television distribution rights of the production, both foreign and domestic, excepting use of excerpts from the documentary [including the 10-minute abbreviated documentary on any Bureau of Land Management, Western, or Energy Commission website related to DTC/C-AMA, southern California Desert history, or renewable energy projects within former DTC/C-AMA areas. The letter shall also confirm that the production company may retain copies of the production specifically for promotional and demonstration purposes only. Copies of the letter shall be sent to the CPM, BLM, Western, and the production company representative.

8. The project owner shall ensure that all raw footage acquired during the production of the documentary is submitted to the DTCCL PI-Historian for use in the DTCCL study. Use of the footage for research purposes shall not be restricted. Ten DVD copies and five BluRay copies of the packaged documentary shall also be provided to the DTCCL PI-Historian.

**Verification:**

1. At least 15 days prior to the start of filming, the project owner shall provide the qualifications of the proposed production company to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval. A copy of the scope of work associated with any contract related to the production of the documentary shall be submitted to the CPM within 10 days of execution.

2. At least 15 days prior to the start of filming, the project owner shall also submit the resume of a proposed production advisor to the CPM for review and approval. The production advisor, shall be a qualified historian, with training and experience consistent with the requirements of the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the advisor must have experience researching and documenting historic military resources, preferably within the DTC/C-AMA.

3. Prior to the start of site mobilization, the production company shall take the initial aerial footage of the remains of the Rice AAF and Camp Rice facilities along with representative features and training fields surrounding the project area, as necessary to convey the context of the Rice AAF and Camp Rice within the DTC/C-AMA. The original acquisition format shall be high definition, 16X9, 1080p digital format, using broadcast-level cameras and lenses. The aerial documentation shall be photographed using a television motion picture, industry-accepted camera stabilization system, mounted to a helicopter.

4. At least 30 days prior to the start of production editing, the project owner shall submit a first draft script, storyboard, and description of other related project elements, including proposed finished length of the documentary (a minimum of 26 minutes of edited footage), to the DTCCL PI-Historian, production advisor, and Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

5. At least 90 days prior to the start of commercial plant operations, the project owner shall submit the final cut, with voice-over and background music track, along with packaging proofs, including sample cover, disk label, and packaging materials, to the DTCCL PI-Historian, production advisor, and Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

6. Concurrent with the start of commercial plant operations, the project owner shall provide the final approved documentary to the General Patton Memorial Museum in a high definition format, suitable for mass market duplication, along with 500 DVD copies and 100 BluRay copies of the full-length packaged documentary, suitable for resale. Ten DVD copies and five BluRay copies of the packaged documentary shall also be provided to the BLM Palm Springs-South Coast Field Office, Western, and the CPM.

7. In conjunction with delivery of the final approved documentary in the designated format, the project owner shall provide a letter to the Executive Director of the General Patton Memorial Museum confirming that the Museum is assigned and shall exclusively retain all DVD, BluRay, and video reproduction and sales rights, and broadcast television distribution rights of the production, both foreign and domestic, excepting use of excerpts from the documentary (including the 10- minute abbreviated documentary referenced in **CUL-14**) on any Bureau of Land Management, Western, or Energy Commission website related to DTC/C-AMA, military history, or energy projects in the southern California desert. The letter shall also confirm that the production company may retain copies of the production specifically for promotional and demonstration purposes only. Copies of the letter shall be sent to the CPM, BLM, Western, and the production company representative.

8. Within 30 days from the start of construction, the project owner shall ensure that all raw aerial footage acquired during the production of the documentary is submitted to the DTCCL PI-Historian for use in the DTCCL study. Use of the footage for research purposes shall not be restricted. Ten DVD copies and five BluRay copies of the packaged documentary shall also be provided to the DTCCL PI-Historian.

## CUL-14 INTERPRETIVE MATERIALS

1. The project owner shall provide the design of at least one single page, double-sided tri-fold brochure and an initial production run of at least 1,000 copies to the General Patton Memorial Museum for public distribution, interpreting the significance of Rice AAF and Camp Rice as individual historical features and as contributing features within the DTC/C-AMA cultural landscape.

   Prior to the final phase of plant construction, the project owner shall submit draft design proof–of the brochure to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

   Prior to the start of commercial plant operations, the project owner shall submit final design proofs of the brochure to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

   Prior to, or concurrent with the start of commercial plant operations, the project owner shall submit a digital/electronic template of the brochure design~~s~~, along with 1,000 copies , suitable for public distribution, to the Executive Director of the General Patton Memorial Museum. The project owner shall also submit the final digital/electronic template of the brochure to the CPM, BLM Palm Springs-South Coast Field Office, and Western. The project owner, Museum, Energy Commission, BLM, and Western shall have authorized use of the initial (and any revised) templates for future production runs for distribution to the public or display on any of the parties' informational websites.

2. Prior to the start of commercial plant operations, the project owner shall provide a donation in the amount of $25,000 to the General Patton Memorial Museum. The funds from this donation shall be earmarked for development and installation of displays and signage interpreting contributions of the Rice AAF and Camp Rice to the mission of the DTC/C-AMA at the General Patton Memorial Museum. The resulting interpretive display shall also incorporate a way for the

public to view the 10-minute abbreviated documentary excerpt identified in **CUL-13** above. Historical information acquired during the DTC Cultural Landscape study, identified in **CUL-1** above, shall also be made available to the Museum as a basis for development of the Rice AAF/Camp Rice displays.

**Verification:**

(a) At least 90 days prior to the completion of construction, the project owner shall submit draft design proofs of the brochure to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

(b) At least 30 days prior to the start of commercial plant operations, the project owner shall submit final design proofs of the brochure to the Executive Director of the General Patton Memorial Museum for review and comment, and to the CPM for review and approval.

(c) Within 30 days from the start of commercial plant operations, the project owner shall submit the final digital/electronic template of the brochure design, along with 1,000 copies, suitable for public distribution, to the Executive Director of the General Patton Memorial Museum. The project owner shall also submit the final digital/electronic template of the brochure to the CPM, BLM Palm Springs-South Coast Field Office, and Western.

## D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

This section summarizes the record concerning the project's potential effects on geological and paleontological resources. The evidence evaluates whether project-related activities could result in exposure to geological hazards, as well as whether the facility can be designed and constructed to avoid any such hazard which could impair its proper functioning. These include volcanic eruptions, faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, and seiches. Of these, dynamic compaction, hydrocompaction, subsidence, and expansive soils are geotechnical engineering issues which do not typically raise public safety concerns. (Ex. 200, p. 6.15-2.) Next, the evidence of record assesses whether the project will impact any geologic or mineralogical resources. Finally, the analysis of record examines whether fossilized remains or trace remnants of prehistoric plants or animals are likely to be present at the site and, if so, whether the project's potential impacts to these resources are adequately mitigated. The parties did not dispute any matters in this discipline. (10/29/2010 RT 21; Exs.1, §§ 5.4, 5.11, 3, 48 [Geology and Paleontology]; 200, pp. 6.15-1 – 6.15-33.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Geologic Hazards

The project site is located in the Colorado Desert within the east central Mojave Desert Geomorphic Province in northern Riverside County. (Ex. 200, pp. 6.15-1, 6.15-7.) It is near the western edge of a structural belt which correlates to the southern extension of the Walker Lane Fault Zone. This northwest trending structural zone is referred to as the Mojave-Sonoran Belt. The area is notable for its relative lack of seismicity and faulting since the end of the Miocene period, approximately three million years ago. (Ex. 200, p. 6.15-7.)

Surface cover at the site consists of Quaternary and Tertiary alluvium and fanglomerate deposits composed of sediments washed down from the Turtle Mountains to the north. Fluvial deposits of the Colorado River and esturarine deposits of the Bouse Formation may be present. (Ex. 200, pp. 6.15-7 - 6.15-8.) Near surface geology beneath the site consists primarily of Quaternary alluvium and fanglomerate overlying Quaternary older alluvium with minor outcrops of Tertiary volcanic rock. (Ex. 200, p. 6.15-9.) Overall, the site slopes south toward the local topographic low at the center of Rice Valley. (Ex. 200, p. 6.15-8.)

Ground shaking is the main geologic hazard at the site. (Ex. 200, p. 6.15-8.) The evidence shows that Staff independently reviewed available geologic maps, reports, and related pertinent data. (Ex. 200, pp. 6.15-9 - 6.15-10.) Twenty-one type A and B faults and fault segments lie within 100 miles of the site.[1] (Ex. 200, p. 6.15-12.) In addition, Riverside County indicates that an unnamed fault is located beneath Rice Valley, immediately south and southwest of the site. (Ex. 200, p. 6.15-11.) Any of these faults could generate some level of ground shaking. Although the Pinto Mountain fault is closest (about 65 miles west), the evidence shows that ground shaking at the site, if it occurs, is likely to result from movement of the San Andreas fault system, approximately 71 miles to the west. (Ex. 200, p. 6.15-12.)

The evidence establishes that, assuming compliance with the required design standards set forth in the **Facility Design** section of this Decision, the potential is low that geologic hazards will impact the project during its practical design life or pose a risk to human safety. (Ex. 200, pp. 6.15-8, 6.15-12.) The project owner will also conduct additional fault and geologic hazard analysis as part of the final project design, as required by the California Building Code.

More specifically, the evidence shows that:

- The deep groundwater table (over 300 feet down) alleviates the potential for liquefaction. Consequently, there is also no potential for lateral spreading at the site during seismic events. (Ex. 200, p. 6.15-12.)

- Site specific geotechnical investigation indicates that the underlying subsurface alluvial deposits are too dense to allow significant hydrocompaction or dynamic compaction. (Ex. 200, p. 6.15-13.)

- The dense alluvial deposits and the absence of petroleum, natural gas, or water withdrawals at the site minimize the possibility of subsidence. Site specific geotechnical investigation shows that the underlying alluvial deposits are generally medium dense to very dense, and therefore unlikely to subside excessively under normal foundation loading. (*Id.*)

- Landslides, tsunamis, and seiches similarly pose insignificant risks. Danger from flash flooding is also limited; if flooding occurs, it will primarily

[1] These are identified in Exhibit 200, Table 2, pp. 6.15-10 – 6.15-11. Type A faults have slip-rates of $\geq$5 millimeters per year (mm/year) and are capable of producing an earthquake of magnitude 7.0 or greater. Type B faults have slip-rates of 2 to 5 mm per year and are capable of producing an earthquake of magnitude 6.5 to 7.0. (Ex. 200, p. 6.15-10.)

- The alluvial soils which form most of the subsurface are not considered to be expansive. The preliminary geotechnical report indicates poorly to well cemented sand and gravel beds, with lesser amounts of silt, underlie the site. (Ex. 200, pp. 6.15-13 – 6.15-14.)

The Rice Project is approximately 65 miles southeast of vents associated with the Amboy Crater volcanic field which, in turn, is about 33 miles southeast of the Lavic Lake volcanic field. Together, these two volcanic fields are referred to as the Amboy Crater – Lavic Lake volcanic hazard area (VHA). This VHA is considered subject to future formation of cinder cones, volcanic ash falls, and phreatic explosions. The site is also about 75 miles northeast of dome complexes associated with the Salton Buttes VHA. This VHA is subject to explosive and extrusive rhyolitic eruptions. The recurrence interval for eruptions for the VHAs has not been determined. (Ex. 200, p. 6.15-14.)

This evidence establishes that, due to the distance from known volcanic hazard areas and the likely long recurrence intervals between eruptions, the potential for volcanic eruptions to cause long-term or catastrophic damage to the project is low. Impacts on the project would likely be short-term and limited to ashfall. (Ex. 200, p. 6.15-15.)

2. Mineralogic and Paleontologic Impacts

The Rice Project is not located within an established Mineral Resource Zone. There are no known viable geological or mineralogical resources at the project site. (Ex. 200, pp. 6.15-1, 6.15-3, 6.15-15.) Thus, development will not result in the loss of a known mineral resource valuable to the region or the State, nor will it interfere with active mining claims or operations. (Ex. 200, p. 6.15-15.)

The evidence shows that Staff reviewed Applicant's paleontological resources assessment as well as literature and records searches conducted by the University of California Museum of Paleontology at Berkeley and the Natural History Museum of Los Angeles County. (Ex. 200, pp. 6.15-3, 6.15-15.) This information indicates that the Quaternary alluvium, fanglomerate, and volcanic rocks within and near the project site contain few fossils. However, fossil collection sites within older Quaternary alluvium similar to that which underlies the project are located some 30 miles to the southwest in the area of Ford Dry Lake and the Eagle and Coxcomb Mountains. Thus, older alluvium underlying

the site could also contain significant fossil vertebrates. (Ex. 200, pp. 6.15-15 – 6.15-16.)

Construction will include grading, foundation excavation, and utility trenching. Unauthorized, unmonitored ground disturbances in these areas could potentially damage paleontologic resources. (*Id*.) The evidence shows that Conditions of Certification **PAL-1** to **PAL-7**, below, provide adequate protection to any resources present as they` will mitigate construction impacts to less than significant levels. This mitigation will occur through a worker education program in conjunction with the monitoring of earthworks activities by a professional paleontologist. (Ex. 200, pp. 6.15-16 – 6.15-17.)

The evidence also indicates that the paleontological resource sensitivity of undisturbed Quaternary alluvium and lacustrine sediments varies from low at shallow depths to high at deeper depths. The depth to Pleistocene age sediments beneath Holocene deposits at the site is unknown. Staff therefore concluded that all sedimentary units below a depth of 1.5 feet of the ground surface, where Holocene age sediments are mapped, should initially be treated as highly sensitive. (Ex. 200, pp. 6.15-15 – 6.15-16.) After monitoring grading and trenching activities during construction, the qualified professional paleontologist may determine the appropriate depth above which the coarse grained soils are Holocene in age, and thus have a low sensitivity and potential for adverse impacts. (Ex. 200, p. 6.15-16.)

Next, the evidence addresses cumulative impacts. For present purposes, these correspond to the project's potential incremental effect, together with that of other closely related past, present, and reasonably foreseeable future projects, to compound or increase the adverse effects upon geologic, mineralogic, and paleontologic resources. Potential cumulative impacts are limited to those involving paleontological resources since no geological or mineralogical resources are apparently present within the project's boundaries. (Ex. 200, p. 6.15-23.)

The geographic area considered is essentially the east central region of the Mojave Desert. The evidence of record indicates that there are potentially fifteen solar energy and seven wind energy projects being considered for siting on BLM land. These projects would occupy a total of approximately 191,017 acres. In addition, a number of renewable energy projects are proposed for State and

private lands for the Mojave and Colorado Desert regions of Southern California.[2] (Ex. 200, p. 6.15-24.)

All identified projects will be reviewed under NEPA and/or CEQA. It is likely that any approvals will be conditioned upon monitoring and mitigating any paleontologic resources impacts. (Ex. 200, p. 6.15-24.) The evidence establishes that implementation and enforcement of a properly designed Paleontological Resource Monitoring and Mitigation Plan (such as that for the Rice Project) will result in a net gain to the science of paleontology by allowing fossils that would not otherwise have been found to be recovered, identified, studied, and preserved. Cumulative impacts from Rice, in consideration with other nearby similar projects, should therefore be either neutral (no fossils encountered) or positive (fossils encountered, preserved, and identified). (Ex. 200, pp. 6.15-24 – 6.15-25.)

Finally, the evidence addresses the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR62/Rice Valley Road Tie Line Alternative, and various No Project Alternatives in regard to this topic area. None of these Alternatives would substantially alter or increase the level of geologic, mineralogic, or paleontologic impacts posed by the project, and each of the Alternatives could be constructed in accordance with applicable LORS. The evidence also shows that the Rice Solar Energy Project, as mitigated with the Conditions of Certification below and in the **Facility Design** section of this Decision, does not create significant geological, mineralogical, or paleontological impacts. Therefore, it is unnecessary to consider any of the Alternatives as a means of reducing project impacts to below a level of significance. (Ex. 200, pp. 6.15-18 – 6.15-22.)

## FINDINGS OF FACT

Based on the evidence of record, we make the following findings:

1. The project is located in an area with limited geologic activity.

2. Ground shaking is the main geologic hazard which could affect the Rice Solar Energy Project.

[2] Several of these projects are specified in the evidence. (Ex. 200, p. 6.15-24.)

3. Potential geologic hazards to the project are effectively mitigated by standard engineering design measures as specified in Conditions **GEN-1, GEN-5,** and **CIVIL-1** of the **Facility Design** section of this Decision. Hazards from volcanic activity would be short-term and limited to ashfall.

4. Liquefaction, lateral spreading, dynamic compaction, hydrocompaction, ground subsidence, landslides, flooding, tsunamis, and seiches pose low or negligible project risks.

5. There is no evidence of existing or potential geological or mineralogical resources at the project site or along the linear alignments.

6. The evidence addresses the potential cumulative impacts of the Rice Project in conjunction with other identified projects over a broad area.

7. The record addresses the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR62/Rice Valley Road Tie Line Alternative, and various No Project Alternatives in regard to this topic area.

8. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related impacts to below a level of significance.

9. The project owner will implement several mitigation measures to avoid impacts to paleontological resources including worker education, preparing a Paleontological Resources Monitoring and Mitigation Plan, and having a Paleontologic Resource Specialist on-site.

## CONCLUSIONS OF LAW

1. The Conditions listed below ensure that project activities will not cause significant adverse direct, indirect, or cumulative impacts to geological, mineralogical, or paleontological resources.

2. Compliance with the Conditions of Certification specified below will ensure that the Rice Solar Energy Project conforms to all applicable laws, ordinances, regulations, and standards related to geological, mineralogical, and paleontological resources as identified in **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**PAL-1** The project owner shall provide the CPM with the resume and qualifications of its Paleontological Resources Specialist (PRS) for review and approval. If the approved PRS is replaced prior to

completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontological resource monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the SVP guidelines of 1995. The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontologic resource monitors shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

**Verification:** (1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for

paleontological resource monitoring required by the Condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter(s) shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.

(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

**PAL-2** The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and the CPM. The site grading plan and plan and profile drawings for the utility lines are acceptable for this purpose. The plan drawings shall show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities changes, the project owner shall provide maps and drawings reflecting those changes to the PRS and the CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and the CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

**Verification:** (1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and the CPM.

(2) If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and the CPM at least 15 days prior to the start of ground disturbance.

(3) If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

**PAL-3** The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) to identify general

and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the SVP (1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum which meets the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;

9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological Conditions of Certification.

**Verification:** At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

**PAL-4** Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP) unless specifically approved by the CPM.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect these resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;

5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

**Verification:** (1) At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.

(2) At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning to use a video for interim training.

(3) If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

(4) In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

**PAL-5** The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and

must be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontological find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities and that the summary is included in the monthly compliance reports. The summary shall include: the name(s) of PRS or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report shall address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

**Verification:** The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

**PAL-6** The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all

significant paleontological resource materials encountered and collected during project construction.

**Verification:** The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved paleontological resource report (see Condition of Certification **PAL-7**). The project owner shall be responsible for paying any curation fees charged by the institution for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

**PAL-7** The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the CPM for review and approval.

The report shall include, but is not limited to: a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

**Verification:** Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

**Certification of Completion**
**Worker Environmental Awareness Program**
**Rice Solar Energy Project (08-AFC-10)**

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

| No. | Employee Name | Title/Company | Signature |
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Cultural Trainer: _____ Signature:_____ Date: ___/___/___

PaleoTrainer:_____ Signature:_____ Date: ___/___/___

Biological Trainer: _____ Signature:_____ Date:___/___/___

# VII. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise, Socioeconomics, Traffic and Transportation, and Visual Resources.**

## A. LAND USE

The land use analysis focuses on three main issues: (1) whether the Rice Solar Energy Project (RSEP) is consistent with local land use plans, ordinances, and policies; (2) whether the project is compatible with existing and planned uses, and (3) potential project-related direct, indirect, and cumulative environmental effects.

Because the RSEP project is subject to the requirements of both NEPA and CEQA, the methodology used for determining environmental impacts of the proposed project includes a consideration of guidance provided by both laws and NEPA Implementing Regulations. (40 CFR Parts 1500-1508.)

We are the lead agency for CEQA review of this project. Therefore, thresholds for determining significance in this section are based on Appendix G of the CEQA Guidelines and performance standards or thresholds identified by Staff.

Western is the lead federal reviewer of the project's compliance with NEPA. The SA/DEIS includes Western's evaluation of the project under NEPA and its implementing regulations. Western's initial NEPA conclusions are summarized in the SA/DEIS.

In accordance with the CEQA Guidelines, we evaluate whether the project might result in significant impacts by:

- Converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use;

- Conflicting with existing zoning for agricultural use or a Williamson Act contract;

- Involving other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses;

- Physically disrupting or dividing an established community;

- Conflicting with any applicable habitat conservation plan or natural community conservation plan;

- Conflicting with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction, over the project. This includes, but is not limited to, a General Plan, community or specific plan, local coastal program, airport land use compatibility plan, or zoning ordinance; or

- Creating individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts. (Cal. Code Regs., tit. 14, §§ 15000 et seq., Appen. G, §§ II, IX, XVII.)

We also evaluate whether the project complies with the laws, ordinances, regulations, and standards (LORS) identified in **Appendix A** of this Decision. Our evaluation is based on the following evidence: 10/29/10 RT 21, 106-119, 120-124, Exs. 1, § 5.6, 3, 4 [94-99], 13 [Land Use], 34 [Land Use], 48 [Land Use]; 51, 200, § 6.5.

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Setting

The project site is immediately south of and adjacent to State Route (SR) 62, in unincorporated Riverside County. The project footprint will include approximately 1,387 acres of privately owned property and 99 acres of federal lands managed by the U.S. Bureau of Land Management (BLM). (Ex. 200, p. 6.5-7.)

The northern portion of the proposed project footprint is bounded by SR 62, the Arizona and California Railroad short line, and the Colorado River Aqueduct. The former Camp Rice is situated along a portion of the eastern project site boundary, with some private land directly south, and BLM-managed public lands surrounding the remainder of the site. (Ex. 200, pp. 6.5-7 - 6.5-8.)

The RSEP power block and solar arrays will cover approximately -1,387 acres of a project site consisting of four parcels. These parcels are part of a larger 3,324 acre- area owned by the Applicant. The generating facility would be constructed on privately owned land and connected to the Western's Parker-Blythe transmission line by a 10.0-mile-long generation tie line. The proposed transmission line corridor will extend southeast for approximately 10 miles, across BLM-managed public lands and two privately owned parcels, connecting with the Western Parker-Blythe transmission line within the existing Western/BLM right-of-way (ROW). (Exs. 1, p. 5.6-1; 200, p. 6.5-8.)

The project's power block and solar arrays will be located on the site of the Rice Army Air Field (Rice AAF) and a portion of Camp Rice, a World War II desert training base that was part of the infantry and artillery Desert Training Center, California-Arizona Maneuver Area used by General George S. Patton, Jr., from 1942-1944 to prepare American soldiers for combat in the North African desert. The airport was used by the public and private sector, respectively and was abandoned between 1955 and 1958. To the east, Camp Rice (Rice Divisional Camp) housed the 5th Armored Division during its training at the maneuvers area and maintained a large quartermaster depot at that location. The area was also used for Joint Exercise Desert Strike in 1964. Little remains of Camp Rice or the Rice Army Airfield, aside a few foundations, concrete pads, and defunct runways. (Ex. 200, p. 6.5-8.)

The project site is generally flat, with elevations ranging from about 720 feet (220 meters) above sea level (ASL) at the southern boundary to approximately 820 feet (250 meters) ASL in the north, along SR 62.

The proposed project site can best be described as extensively disturbed land that has been unused for about 50 years and is gradually reverting to desert.

Native plant revegetation is sparse to moderate and interrupted by the remains of the asphalt, gravel, concrete pads, foundations, runways, and taxiways. A number of small, dry desert washes traverse the project area, but no large ephemeral washes are present. There are no structures on the site, except for a few decaying foundations stemwalls, and no active use.

2. Surrounding Area.

The rugged desert landscape within and surrounding the project area provides a range of scenic values. BLM recognizes these visual values as a definable

resource on public lands and an important recreation experience, and manages them accordingly. (Ex. 200, p. 6.5-13 – 6.5-14.)

As discussed above, the project site boundaries adjoin and overlap the previous site of Camp Rice to the east, with some private land directly to the south, and public lands surrounding the remainder of the site. Much of the surrounding land is managed by BLM, which allows livestock grazing and a variety of recreational activities on the Multiple-Use Class M lands. The land surrounding the project footprint, excluding Camp Rice and the former Rice AAF, is relatively undisturbed desert. There are no residences or commercial developments, other than the Iron Mountain Pumping Station, within visual range of the project site or surrounding desert lands. (*Id*.)

Access to the site is along SR 62, a two-lane state highway that bounds the project site to the north and provides a direct route between Vidal Junction, to the east, and Twenty-nine Palms to the west. SR177 intersects SR62 approximately 17 miles west of the project site and connects to Desert Center and Interstate 10 (I-10) to the south. The Arizona and California Railroad (ARZC) short line parallels SR 62 at the project site and extends nearly 300 miles between Matthie, Arizona and Cadiz, California, with a 50-mile southern branch to Ripley. (*Id*.)

The 242-mile Colorado River Aqueduct (Aqueduct) also parallels SR 62 to the north of the project site. The Aqueduct is operated by the Metropolitan Water District of Southern California (MWD). The closest Aqueduct pumping facility is at Iron Mountain, about 10 miles northeast. The Aqueduct is fenced and public access is prohibited. Despite its close proximity to the project, water from the Aqueduct is not available to the RSEP. (*Id*.)

The area surrounding the project site also played an important role during WWII as part of the infantry and artillery DTC/C-AMA. In addition to Camp Rice and the Rice AAF, the 3d Armored Division used Camp Iron Mountain and Camp Granite, at the SR 62/177 intersection, about 17 miles west of the project site, from 1942-44. Camp Iron Mountain was designated as an Area of Critical Environmental Concern (ACEC) for its cultural significance in 1980, and is perhaps the best known and certainly the best preserved of all the training camps. The area has been fenced to provide protection from vehicular traffic. Camp Iron Mountain and Camp Granite are visible from this site to the north and south of SR 62. (Ex. 200, pp. 6.5-14 - 6.5-15.)

3. Applicable Land Use Plans and Land Designations

Plans and policies governing physical development in the project study area include:

- BLM's California Desert Conservation Area (CDCA) Plan;
- BLM's Northern and Eastern Colorado Desert Coordinated Management Plan (NECO);
- Riverside County General Plan;
- Riverside County Land Use Ordinance;
- Riverside County Ordinances 457.102 (Building Code) and 859-859.2 (Landscape Requirements)
- San Bernardino County General Plan; and
- San Bernardino County Development Code. (Exs. 1, p. 5.6-5; 200, pp. 6.5-6 – 6.5-7.)

Because the RSEP is within an unincorporated area of Riverside County, our evaluation focuses on the County's current General Plan and Land Use Ordinance.

The RSEP site, interconnection substation site, and generator tie line route, and surrounding lands are designated in the Riverside County General Plan as Open-Space Rural. The County's Land Use Ordinance is a regulatory tool that implements the goals and policies specified in the General Plan. It defines zones that dictate allowed uses and design requirements that include setbacks and height limits. Under this Ordinance, the RSEP site is zoned Controlled-Development Area, 10-acre minimum (W-2-10). The tie line route and interconnection substation are zoned Natural Assets (N-A). The neighboring private lands are also zoned W-2-10. (Ex. 200, pp. 6.5-40, 6.5-46 – 6.5-47.)

The CDCA Plan and NECO are applicable to this project because a portion of the generator tie line route and the interconnection substation are on land managed by BLM. The CDCA Plan designates those portions of the RSEP that are within BLM jurisdiction as Multiple-Use Class M (Moderate Use).

And, because the project study area, which encompasses a one-mile radius of the project site, includes land within San Bernardino County, we also consider the project's conformance to the County's land use designations and policies.

Notably, none of the project facilities are within San Bernardino County. (*Id*.) The portions of the study area within this county are designated as Resource Conservation.

**Land Use Figure 1** below shows the project site in relation to the above-identified jurisdictions.

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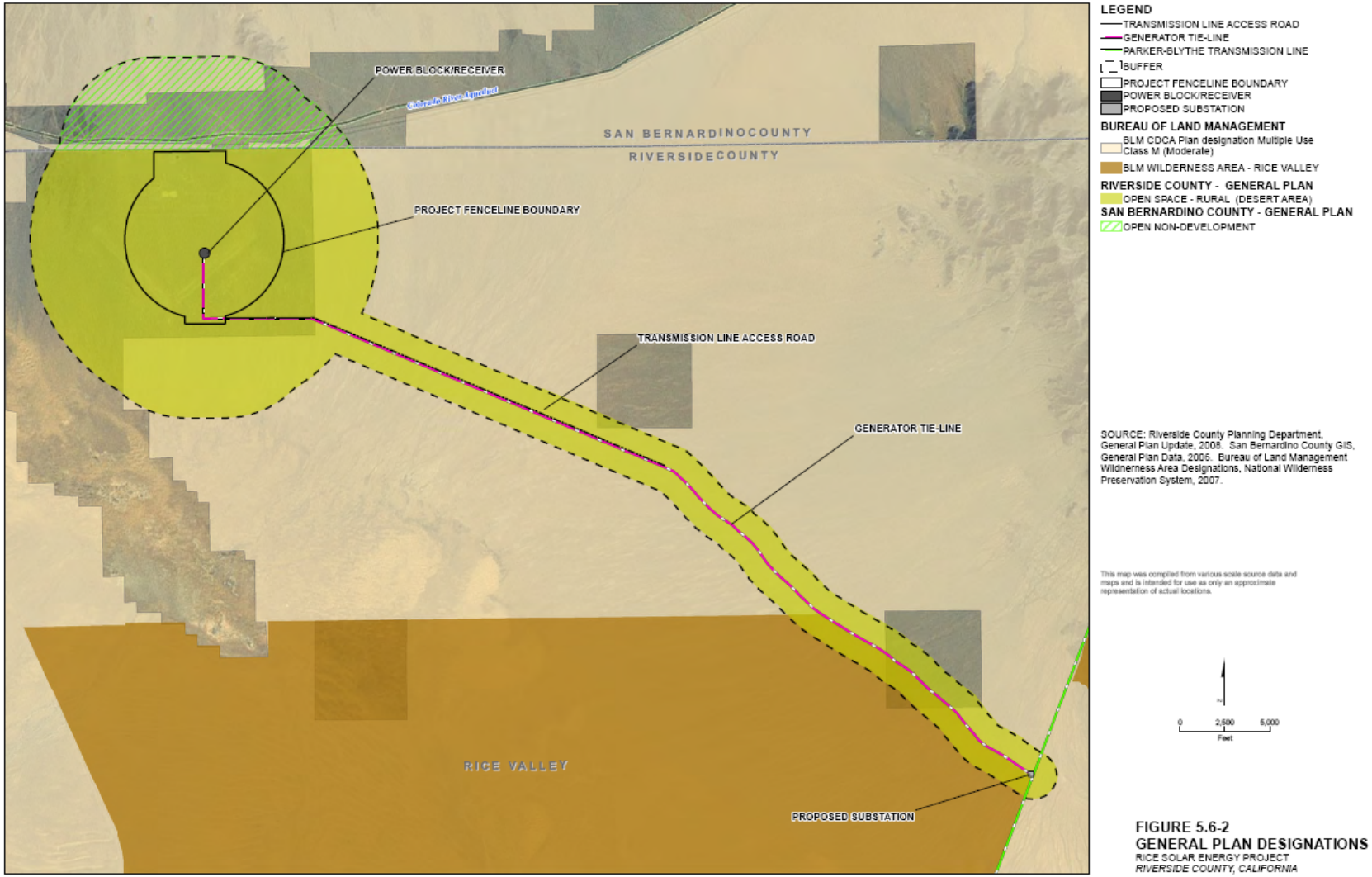
## Land use Figure 1
## LAND USE PLAN DESIGNATIONS WITHIN 1-MILE OF RSEP



4. Potential Impacts - CEQA

a. Conversion of Agricultural Lands to Non-Agricultural Use

With the exception of limited grazing for domestic sheep on a public lands grazing allotment, there is no current or historical use of the project lands for agricultural purposes. Furthermore, none of the land within the project site has been mapped by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) as prime or unique farmland or farmland of statewide importance. Nor has Riverside County identified the project site as farmland of local importance.

Thus, no farmland conversion impacts are expected as a result of the project. Furthermore, there is no evidence that the project will involve other changes in the existing environment that could result in conversion of farmland, to non-agricultural uses. (Exs. 1, pp. 5.6-14, 5.6-19; 200, pp. 6.5-15, 6.5-24.)

b. Conflict with Existing Agricultural Zoning or Uses or Williamson Act Contract.

As noted above, with the exception of limited grazing for domestic sheep on a public lands grazing allotment, there is no current or historical use of the project lands for agricultural purposes. The public land is used in part for grazing under the Rice Valley Rangeland Grazing Allotment (#CA06001) held by Lava Lake Land & Livestock, LLC (Allotment). More particularly, most of the transmission line corridor, proposed interconnection substation location, and surrounding 74,740 acres of BLM-managed lands, are part of the Allotment.[1] This Allotment allows intermittent grazing of sheep on the ephemeral rangeland within the allotment boundaries from March 1 to April 30 of each year, provided sufficient ephemeral forage is available. The current allotment is effective through January 30, 2018. (Ex. 200, pp. 6.5-15 – 6.5-16.)

Thus, the evidence establishes that use of or access to a portion of the Allotment area could be disrupted during the construction period (i.e., up to three grazing seasons). These temporary impacts will be mitigated to less than significant levels with implementation of Staff-proposed Condition of Certification **LAND-4**. **LAND-4** provides that activities blocking or limiting access to Rice Valley Road,

[1] Electric generation facilities, including transmission lines, are allowed uses on MUC-M land, subject to NEPA compliance. (Ex. 200, p. 6.5-25.)

or construction within the boundaries of the Allotment shall not occur during the established seasonal grazing period. Moreover, no open trenches or construction materials that could endanger livestock shall be accessible within the Allotment boundaries during the grazing seasons.

The evidence also establishes that the completed project will eliminate nearly 75 acres of forage existing within the proposed transmission corridor and substation footprint. This loss of forage area in existing locations within the transmission corridor and substation footprint cannot be avoided or minimized. However, we find that the loss of 75 acres within the 74,740-acre Allotment is insignificant. Therefore, we conclude that project will not substantially disrupt agricultural activities or substantially reduce the agricultural resource value of established federal rangelands within the CDCA. (*Id*.)

None of the privately-owned project lands or surrounding properties is currently in agricultural use, classified as farmland or subject to a Williamson Act contract. Additionally, lands under BLM management are not eligible for inclusion under the Williamson Act. (Ex. 200, p. 6.5-24; AFC § 5.6.1.2.)

Based on the foregoing, we find that the project does not conflict with existing zoning for agricultural lands and will not impact any Williamson Act lands. With implementation of the Condition of Certification **LAND-4**, the temporary impacts to Allotment forage lands will be mitigated to less than significant levels.

c. Involves Other Changes in the Environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use

Except as discussed above, the project is not expected to involve changes to the environment that could result in converting farmland to non-agricultural uses. Nor is the project expected to affect any of the seven herd areas (HAs) and four herd management areas (HMAs) within 50 miles of the proposed project site. The closest areas, the Chemehuevi HA and HMA, begin approximately 10 miles northeast of the eastern project boundary. Additionally, there are no HAs or HMAs within or immediately adjacent to the proposed project site or transmission corridor. (Ex. 200, p. 6.5-16.)

d. Physically Disrupt or Divide an Established Community

The proposed project site is extremely isolated and is not part of or adjacent to any established community or residential area. It is surrounded by BLM-managed public lands, interspersed with a few, privately-owned parcels.

There are no established neighborhoods or communities in the project area. According to the evidence, the closest area with any services is Vidal Junction, which is a small community about 15 miles east of the proposed project site. Other towns in the general vicinity of the project site include Parker, about 35 miles east, on the California/Arizona border; Blythe and Needles, approximately 65 miles south and north, respectively; Desert Center, a bit over 50 miles to the southwest; and Twenty-nine Palms, off SR 62, about 75 miles to the west.

Access to all existing facilities in the area (e.g., Iron Mountain Mine, the Aqueduct, utility corridors) is directly off SR 62 and is not dependent on or impeded by the proposed project. (Exs. 1, p. 5.6-13; 200, p. 6.5-33.)

e. Conflict With Applicable Habitat Conservation Plan or Natural Community Conservation Plan

The RSEP is not within the boundaries of a habitat conservation or natural community conservation plan. However, portions of the project are subject to the CDCA Plan, as amended by the NECO but these areas are not within areas of critical environmental concern. (Exs. 1, p. 5.6-14; 200, p. 6.5-37.)

f. Conflict with Applicable Land Use Plan, Policy, or Regulation of an agency that has jurisdiction or would normally have jurisdiction

As required by California Code of Regulations, title 20, section 1744, Staff evaluates the information provided in the AFC (and any amendments) and project design, site location, and operational components to determine if elements of the proposed project would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, or that would normally have jurisdiction over the project except for the Energy Commission's exclusive authority.

<u>Federal LORS</u>. The RSEP does not conflict with the BLM CDCA. Class M allows a variety of uses including mining, livestock grazing, recreation, and energy and utility development. However, new projects not currently included within the CDCA Plan may be added through an amendment process. The

RSEP project must obtain both a right of way grant form BLM and Plan amendment for the generator tie-in utility corridor before construction may begin. The SA/DEIS represents initial federal agency evaluation of project impacts under the ROW and Plan amendment processes. However, a Plan Amendment decision is separate and distinct from the Commission decision and will issue as part of the BLM Record of Decision after final publication of the Final EIS. (*Id*.) Condition of Certification **LAND-3** requires the project owner to obtain an ROW grant for BLM before the start of construction. (Exs. 1, p. 5.6-14; 200, pp. 6.5-38 - 40.)

With implementation of Condition of Certification **LAND-4** environmental impacts to agricultural uses and rangeland will be less than significant. However, residual effects under NEPA will include an adverse impact on the wilderness experience of visitors to several of the wilderness areas, but will have no direct impact to resources within wilderness boundaries. (Ex. 200, p. 6.5-40.)

Local LORS. As noted above, the RSEP generating facilities would be sited on privately-owned land designated Open-Space Rural (OS-RUR) by the Riverside County General Plan. The site is zoned Controlled-Development Area (W-2) by the County's Land Use Ordinance.

While the OS-RUR land use designation is intended to ensure that development does not adversely impact the open space and rural character of the surrounding area, W-2 zones within OS-RUR designations may include a variety of uses such as public utilities and related structures and appurtenant facilities for the development and transmission of electrical power. (Exs. 1, p. 5.6-14; 200; 13; 51.) Thus, the allowed uses in W-2 OS-RUR areas must be harmonized with broad General Plan goals and those specifically applicable to OS-RUR areas. (Exs. 1, pp. 5.6-17 – 5.6-18; 200, p. 6.5-40.)

The Applicant contends that the project complies with all General Plan policies. (Ex. 1, pp. 5.6-15 - 5.6-18 [Table 5.6-4], 13, 51.) Staff concludes otherwise. (Ex. 200, pp. 6.5-40 – 6.5-44.)

In summary, Staff's position is that the project will not enhance the surrounding areas as intended by the land use element of the General Plan or maintain the character of or blend in with the undeveloped natural contours of the site even with implementation of Staff-proposed Conditions of Certification **LAND-5**, **LAND-6**, **LAND-7**, and **LAND-9**. (Ex. 200, pp. 6.5-40 – 6.5-42.)

**LAND-5** requires the project to comply with all land use, building, General Plan, and municipal code standards. **LAND-6** requires the project owner to pay development impact fees under a County-established program. The payment of development impact fees is governed by Riverside County Ordinance No. 659.9. This ordinance requires all new development to bear its fair share cost of providing facilities and open space and wildlife habitat reasonably needed to serve the development. (Riverside County Ordinance 659 (as amended through Ordinance 659.9.) **LAND-7** requires the undergrounding of all permanent communication and electric distribution lines serving the project. **LAND-9** requires use of native, drought-resistant landscaping plantings along the entrance, northern boundary fencing and visitor viewing area to maintain the character and of, and helps blend in the facility's visible presence along SR 62.

As shown by the evidence, the applicable Land Use Ordinance development standards would require the project to obtain a variance from the County (if the County had jurisdiction over the project) for project elements including the steam generating building, solar receiver tower, and transmission line towers that exceed the allowed height limits for buildings and other structures. (Ex. 200, p. 6.5-46.) Staff concludes that in this case, a variance would not be issued because the circumstances requiring a height variance are unrelated to the parcels that make up the project site and are instead, related to the functionality and operational requirements of the proposed project.[2]

There is significant evidence, however, that the County was consulted on its application and interpretation of Section 18.27 as well as the project's overall compliance with County LORS. This evidence persuades us that the project is consistent with Riverside County LORS. For instance, a letter from County Planning Director Ron Goldman to the Applicant provides in pertinent part:

> The property underlying the proposed project is designated Open Space-Rural (OS-RUR) by the General Plan and is zoned Controlled Development Areas – 10 acre minimum (W-2-10). The OS-RUR General Plan land use designation is applied to remote, privately-owned open space areas with limited access and a lack of public services. While the OS-RUR General Plan designation does not specifically allow solar energy projects, we could find the

[2] According to the evidence, the County grants variances only when, because of special circumstances applicable to a particular property, strict application of the ordinance requirements would deprive the property of privileges enjoyed by other property in the vicinity that is under the same zoning classification. (Ex. 200, pp. 6.5-6.6, see also Riverside County Land Use Ordinance, §18.27(a)].)

> proposed project consistent with the OS-RUR designation policies, as well as the General Plan Principals (sic) and Vision Statement which expressly encourage the development of renewable resources in Open Space designations. As stated in the General Plan Open Element Policies: "Energy conservation and the substitution of renewable resources should be encouraged if these resources are to be preserved for the County's future generations."
>
> Pursuant to Section 15.1 of Riverside County's zoning ordinance (Ordinance No. 348), the W-2-10 zone allows a variety of public utility uses as a matter of right, including "structures and the pertinent facilities necessary and incidental to the development and transmission of electrical power and gas such as hydroelectric power plant, booster or conversion plants, transmission lines, pipe lines, and the like." These uses do not require the prior approval of a use permit. Although we would not consider the proposed project a public utility, it is substantially the same in character and intensity as these public utility uses. Accordingly, we could find the proposed project consistent with Ordinance No. 348. Because the current height limitation in the zone is 105 feet, however, we would first require the approval of a height variance for the proposed tower pursuant to Section 18.27 of Ordinance No. 348.

(Ex. 13.)

This is but one of several written communications between the County and the Applicant, which reflects the County's careful consideration of the project vis- a-vis County General Plan and development LORS. (See also, Ex. 51.) We defer to the County's analysis and conclusions regarding the RSEP projects and find that the project is consistent with the General Plan and Zoning Ordinance.

In addition to the above-identified Conditions, the project is required to implement Conditions of Certification **LAND-1**, **LAND-2**, and **LAND-8** to further comply with additional Local LORS. (Exs. 200, pp. 6.5 -44 – 6.5-49.) **LAND-1** requires the project owner to consolidate into one parcel, the four individual parcels that will comprise the project site. This is required by County Ordinance and the General Plan. (Ex. 200, pp. 6.5-44, 6.5-98.) **LAND-2** requires the project owner to obtain a recorded easement from all affected private property owners, authorizing the use of those properties for project construction and operation needs. (Ex. 200, p.

6.5-98.) **LAND-8** requires the project owner to submit a parking plan consistent with the County's parking requirements. (Ex. 200, p. 6.5-101.)

Thus, we find that with implementation of the Conditions of Certification herein, the project would comply with Riverside County's General Plan and zoning requirements.

Finally, regarding local LORS, the evidence shows that the project will not physically impact any land within San Bernardino County. There is no conflict with that County's codes. (Ex. 1, p. 5.6-14.)

5. NEPA Considerations

As discussed above, this evaluation includes BLM and Western's conclusions regarding the project's compliance with NEPA. In summary (but more fully discussed and supported by the evidence as shown in Ex. 200, § 65), the federal reviewers reached the following conclusions in the DEIS:

- The effects on the agricultural resource value of established federal rangelands within the California Desert Conservation Area are minor, both locally and regionally and would not contribute to the substantial loss or fragmentation of existing grazing allotments or future grazing opportunities
- The effects on recreational activities and resources would be temporary and relatively minor from both a local and regional perspective. Limited loss of access to the MUC-M lands along the existing 5.4-mile length of Rice Valley Road would occur during construction of the transmission line and interconnection substation at the connection point with the Western 161/230kV transmission corridor
- The effects on recreational use of established Wilderness areas and public access to those resources would be limited to noise and visual intrusion on the wilderness experience during project construction. Wilderness resources would not be directly and physically impacted. However, residual effects under NEPA will include an adverse impact on the wilderness experience of visitors to several of the wilderness areas.
- Project activities at all phases of construction, operation, and closure would conform to BLM plans, policies, and procedures, through approval of the ROW application and implementation of the NEPA and CDCA Amendment process. Staff has also proposed condition of certification **LAND-3** that, if fully implemented, would ensure consistency with applicable federal (BLM) land use requirements

6. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., title 14, § 15031(a).)

The analysis of record includes an assessment of the project's potential cumulative impacts on all aspects related to land use.

From a local perspective, the project site is in the Rice Valley, in the northeastern corner of Riverside County and immediately south of SR 62. It is southeast of the BLM Iron Mountain Solar Energy Study Area and surrounded by the BLM lands that are being analyzed for solar development in the U.S. Department of Energy (DOE) and BLM programmatic EIS. Bounded by five mountain ranges, the lands surrounding the project area are geologically and topographically isolated from other portions of BLM's California Desert District (CDD) and present a relatively distinct land area for the purposes of analyzing local CEQA and NEPA cumulative impacts. The Applicant and staff have identified three projects in the Rice Valley within 15-20 miles of the RSEP, which are not energy-related, but have the potential to impact current and future land uses. They consist of three areas of pipeline repair and improvement on the Metropolitan Water District's (MWD) Colorado River Aqueduct, with the project areas located approximately 18 miles from the RSEP at MWD's Iron Mountain Pumping Station. Due to the distance from the RSEP site, and the absence of significant land use impacts associated with the MWD projects or with the RSEP, cumulative impacts to existing land uses and policies will be less than significant. No projects have been identified in the project vicinity that would create significant cumulative land use impacts when considered together with the RSEP.

From a regional perspective, the project area is located in the southeastern portion of the CDD, an area containing approximately 11 million acres of public lands in portions of Kern, Inyo, Los Angeles, Riverside, San Bernardino, Orange, Imperial, and San Diego counties. While the geology and topography of the area generally isolates the Rice site, project impacts to the overall availability of conservation areas, impacts to individual species, availability of undeveloped lands and resources, wilderness access, and recreational use within the larger CDD must be considered. There are a total of eight solar energy projects proposed or in progress on approximately 187,844 acres of BLM-managed public

lands, within a radius of approximately 25 miles from the project site. The DOE and BLM are also analyzing public lands along SR 62, SR 171, I-10, and north into San Bernardino County, including the location of the proposed project's transmission lines and interconnection substation, for compatibility with future solar development, as part of the Solar Energy Development Programmatic EIS (DOE/BLM 2010a). Portions of these lands are also included in the BLM's Riverside Solar Study Area (see Cumulative Impacts Figure 2). The only wind project proposed in the general vicinity was withdrawn in July 2010 [see Ex. 200, Land Use Appendix B] In addition to the projects identified within the local area, there are 35 additional solar projects proposed over more than 492,219 acres of public lands and three wind projects on 21,293 acres of public lands (as of August 2, 2010), within a radius of 75 miles from the project site (Ex. 200, Land Use Appendix B and Staff Assessment Cumulative Figure 2.)

Even more renewable energy projects are proposed on public lands in surrounding counties, from Indio, Twenty-Nine Palms, and Needles to the eastern California border; and into the states of Nevada and Arizona (see Ex. 200, Land Use Appendix B), along with the 24 tracts of public lands in six western states, including over one million acres in southern California, that are being studied as suitable for solar development There are also at least 36 non-energy-related current and foreseeable projects affecting land use and resources in the region, including three major master planned communities and 20 smaller residential developments; and a proposed 941,000-acre, federally protected national monument area (see Ex. 200 **Land Use** Appendix C.)

RESP would add to the projected acreage for renewable energy projects developed in the Colorado desert, and to the loss of open space in this region generally. However, RSEP's individual contribution to these region-wide effects is negligible, and the proposed project location and surrounding topography would limit its potential contribution to cumulative effects on the desert as a whole. Furthermore, RSEP is consistent with all land use and zoning designations under Riverside County General Plan and Municipal Code, as discussed above. With the exception of the transmission line, the RSEP will be sited on private land subject to local LORS that explicitly consider the project's potential impacts to regional land use resources. We, and the County of Riverside, have independently evaluated those LORS and impacts, and both find that the project is consistent with County LORS. Because the project's OS-RUR (open space rural) zoning designation allows and anticipates industrial development of the project site and surrounding lands, it is reasonable to infer that as long as such development conforms to the General Plan goals and

polices and Municipal Code zoning and development requirements, it will not in itself make a significant contribution to identified region-wide cumulative impacts.

Taking into consideration the totality of the geographic scope of potential project impacts, the analysis of record establishes that the only potential cumulative impact caused by the project relates to land use compatibility, particularly with respect to scenic resources. (Ex. 200, pp. 6.5-51 - 6.5-58.) We address the project's potential impacts on visual resources in the **Visual Resources** section of this Decision. Thus, as to the technical area of land use, we find that the evidence establishes that the project will have a less than significant cumulative impact.[3]

## FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. No farmland conversion impacts are expected as a result of linear facilities' construction, and the proposed project would not involve other changes in the existing environment which could result in conversion of farmland, to non-agricultural uses.

2. Impacts to rangelands will be mitigated to less than significant levels with implementation of the Conditions of Certification.

3. The proposed project would not substantially reduce the scenic, biological or cultural value of a wilderness area.

4. The proposed project would not result in any interference with BLM's management of an HMA or HA.

5. There is no evidence that the project will physically divide or disrupt an established community.

6. With implementation of the Conditions of Certification, the RSEP is consistent with applicable LORS.

[3] We note that the federal reviewers determined that under NEPA, if all the proposed renewable energy projects currently licensed or pending on BLM lands along SR 62 and in the Rice and Ward Valleys are actually constructed, the loss of multiple use lands would equal nearly one-third of the 1.6 million acres of public lands in that area. As a result, under a worst-case build-out scenario, substantial cumulative impacts to biological, cultural, and visual resources would be unavoidable. (ex. 200, p. 6.5-60.)

7. The RSEP will not combine with other past and reasonably foreseeable future projects to substantially reduce scenic values of wilderness areas and recreational resources in the California desert region and therefore, will not result in a significant and unavoidable cumulative land use impact in this regard.

## CONCLUSIONS OF LAW

1. No Conditions of Certification are required for this topic because no significant adverse direct land use impacts will occur as a result of construction and operation of the Rice Solar Energy Project.

2. The record contains an adequate analysis of the land use laws, ordinances, regulations, and standards that are relevant to the project and establishes that the project will not create any unmitigated, significantly adverse direct land use effects as defined under the California Environmental Quality Act.

3. The RSEP will not combine with other past and reasonably foreseeable future projects to substantially reduce scenic values of resources in the desert region and therefore, will not result in a significant and unavoidable cumulative land use impact.

## CONDITIONS OF CERTIFICATION

**LAND-1:** The project owner shall adjust the boundaries of all parcels or portions of parcels that constitute the Rice Solar Energy Project site, identified in the project Application for Certification (AFC) as Riverside County Assessor's Parcel Numbers 801-070-003, 801-070-004, 801-100-005, and 801-100-006, excepting all project elements within the Bureau of Land Management (BLM)-approved, project-related Rights-of-Way (ROWs) and linear easements, or other independent ROWs or privately held easements, as necessary to merge all properties into a single parcel, under single control and ownership, in accordance with provisions and procedures set forth in the County of Riverside's Ordinance #460.151; Ordinance #348, §§ 15.1 and 15.2; and the Comprehensive General Plan of Riverside County.

**Verification**: At least 30 days prior to the start of site preparation and construction, the project owner shall submit evidence to the Energy Commission Compliance Project Manager (CPM), indicating approval of the parcel merger by Riverside County. The submittal to the CPM shall include evidence of compliance with all conditions and requirements associated with the approval of the Certificate of Parcel Merger by the county, including a copy of the recorded deed or Record of Survey and the "Notice of Lot Line Adjustment". All parcels must be under common ownership at the time of merger.

**LAND-2** The project owner shall obtain a recorded easement from all affected private property owners, authorizing the use of those portions of privately-owned lands that would be impacted by construction and operation of any project-related utility lines or pipelines, transmission line alignments, corridors, access roads, and/or the proposed interconnection substation. Temporary access for surveys may occur before the permanent easement(s) is recorded, provided permission to access the property is obtained from the owner or owner's designated representative prior to entering the property.

**Verification:** At least 30 days prior to the start of construction activities on any private lands, including delivery of materials, the project owner shall provide a copy of a recorded easement to the CPM on any affected properties. The project owner shall also provide copies of any access agreements with the property owner(s) and advise the CPM and property owner(s), in writing, of any intended entry onto private lands for surveys or other site evaluations at least three days prior to entry. Copies of all correspondence regarding rights of entry shall also be provided to the CPM within 10 days of receipt.

**LAND-3** The project owner shall obtain a Right-of-Way Grant (ROW Grant) from the Bureau of Land Management (BLM), authorizing use of those portions of BLM-managed public lands that would be impacted by utility lines or pipelines, transmission line alignments, corridors, access roads, and/or the proposed interconnection substation footprint. An approved Plan of Development shall be made a part of the right-of-way grant. Any relocation, additional construction, or use that is not in accordance with the approved Plan(s) of Development and Energy Commission licensing and certification requirements shall not be initiated without the prior written approval of BLM's Authorized Officer and the CPM.

**Verification:** At least 30 days prior to the start of construction and prior to any Notice to Proceed with construction issued by BLM's Authorized Officer and the CPM, the project owner shall provide BLM's Authorized Officer (AO) and the CPM with documentation of the following:

1. BLM's ROW Grant and final approved Plan of Development;
2. The bond satisfactory to BLM's AO; and
3. Certification that the project owner acknowledges the project's development and all applicable construction, operation, maintenance, and closure activities shall be conducted in conformance with the approved Plan of Development and Energy Commission licensing requirements (and any subsequent amendments), and within the approved ROW boundaries, for the life of the project.

**LAND-4:** Activities blocking or limiting access to Rice Valley Road, or construction within the boundaries of the Rice Valley (Keoughs) Rangeland Grazing Allotment (#CA06001), shall not occur during the established seasonal grazing period, currently March 1 – April 30 of each year. No open trenches or construction materials that could endanger livestock shall be accessible within the allotment boundaries. Activities, such as surveys, that would not interfere with or endanger grazing livestock are exempt from this condition.

**Verification:** At least 30 days prior to the start of each allotted grazing season, the project owner shall provide BLM's AO and the CPM with a copy of the construction workplan, confirming cessation of construction activities and implementation of any site protection needed for the duration of the grazing season. Site visits for verification are at the discretion of BLM and the CPM.

**LAND-5:** The project owner shall ensure that all project-related facilities on private lands, including temporary construction parking and laydown area(s), are constructed and operated in compliance with all applicable Riverside County land use laws, ordinances, regulations, and standards, including zoning and building code requirements, except as noted in this document.

The project owner shall submit a development plan to the Riverside County Planning Department in sufficient time to review for substantial conformance and comment, and to the Energy Commission's CPM for review and approval prior to the proposed start of construction. The development plan shall include all elements normally required for review and permitting of a similar project, including site plan, structural dimensions, design and exterior elevation(s), and proof of any required permits. The project owner shall pay applicable Planning Department fees, if any, for review of the plan.

**Verification:** At least 90 calendar days prior to the start of construction, including any grading or site remediation on the power plant project site or its associated easements, the project owner shall submit the proposed development plan to the Riverside County Planning Department to review for substantial conformance with county regulations and comment, and to the CPM for review and approval. The project owner shall also provide the CPM with copies of the transmittal letter to Riverside County and any associated correspondence.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the local jurisdiction, along with any changes to the proposed development plan, to the CPM for review and approval.

**LAND-6:** Prior to the start of commercial operation, upon final inspection, or with issuance of a certificate of occupancy, as required by the

County of Riverside, the project owner shall pay the required development impact fee (DIF) for the project area to the County of Riverside, in accordance with Riverside County Ordinance 659 (as amended through 659.8), as it applies to large scale renewable energy projects. Alternately, the applicant may enter into a development or similar agreement with the County of Riverside that, in the county's opinion, meets the DIF requirements of this ordinance. Fees shall be based on the Desert Center-CV Center Commercial development rate of $12,367 per acre, as established by the August 20, 2009 fee schedule. DIF acreage calculations shall include all power block facilities and all primary paths of travel, on the project site, leading to production plant area(s), including access roads, but not solar fields or solar field maintenance roads.

The project owner shall submit a copy of the receipt or comparable document demonstrating payment of the DIF or a copy of the approved development or similar agreement with the County of Riverside and a letter from the County stating that said agreement meets the county's DIF requirements to the CPM prior to the start of commercial operation.

**Verification:** At least 30 days prior to the start of commercial operation, the applicant shall submit to the CPM a copy of the receipt or comparable document demonstrating payment of the DIF or a copy of the approved development or similar agreement with the County of Riverside and a letter from the County stating that said agreement meets the county's DIF requirements.

**LAND-7:** The project owner shall ensure that all permanent telephone and electric transmission lines serving the project site, located within or immediately adjacent to the SR 62 highway corridor, shall be installed underground for the entire length from the existing service connection to the on-site facilities. Temporary service lines installed in rights-of-way that preclude underground utility installation shall be exempt from this requirement.

**Verification:** The project owner shall provide the CPM of proof of underground utility installation, either as a copy of the final inspection or photos, prior to the start of commercial operations.

**LAND-8:** The project owner shall submit a Parking Plan for construction parking to the CPM for review and approval prior to the start of construction. The Construction Parking Plan shall be consistent with Riverside County parking requirements for space size and circulation, and shall meet the following requirements:

- One parking space for each daily-commute employee, based on an average of the number of workers expected to be on-site between months 8-20;
- One space for each company vehicle;
- One commuter vanpool space for every 20 employees;
- Three visitor spaces immediately adjacent to the main construction office (trailer), including one handicapped van-accessible space, with provisions to allow accessibility to and into the main construction office;
- A compacted all-weather surface of rock, decomposed granite, or similar material shall be installed on all temporary parking areas; and
- Striping of the employee, visitor, and company vehicle parking spaces. If surface materials preclude use of striping, the project owner shall ensure vehicles are parked in a manner that maintains adequate circulation patterns and provides adequate square footage to accommodate the required number of parking spaces, consistent with Riverside County parking requirements.

The project owner shall also submit a Parking Plan to the CPM for review and approval for the operational phase of the project, prior to the start of commercial plant operation. The Operations Parking Plan shall be consistent with Riverside County parking requirements for space size and circulation, and shall meet the following requirements:

- One parking space for every two employees;
- One space for each vehicle kept in conjunction with project operations (i.e., company vehicles);
- One commuter vanpool space;
- Loading spaces for delivery of materials and equipment, consistent with county requirements; and
- At least one handicapped van-accessible parking space immediately adjacent to the site office, consistent with requirements of the Riverside County code and the Americans with Disabilities Act (ADA), with adequate ADA access to and into the operations office.

**Verification:** At least 90 days prior to the start of construction, the project owner shall submit a Construction Parking Plan to the CPM for review and approval. The plan shall include all specified elements identified in condition of certification **LAND-8** and be consistent with Riverside County parking requirements for space size and circulation.

At least 30 days prior to the start of construction, the project owner shall advise the CPM of the completion of the construction elements of the Construction Parking Plan. Either a site visit or area photography shall be used to verify compliance, at the CPM's discretion.

At least 90 days prior to the start of commercial operation, the project owner shall submit an Operations Parking Plan to the CPM for review and approval. The plan shall include all specified elements and be consistent with Riverside County parking requirements for space size and circulation.

At least 30 days prior to the start of commercial operations, the project owner shall advise the CPM of the installation and completion of the Operations parking requirements. Either a site visit or area photography shall be used to verify compliance, at the CPM's discretion.

**LAND-9:** The project owner shall submit a Landscaping Plan for the entrance, northern fenceline, and Historic Interpretive Roadside Stop (see condition of certification **CUL-11**) of the plant site to the CPM for review and approval prior to the start of commercial operations. The Plan shall also incorporate avoidance and minimization measures consistent with the Revegetation, Weed Management, and Special-Status Plant Remedial Action Plans (see conditions of certification **BIO-10-12**); and the restoration and revegetation plan for the staging and buffer areas (see condition of certification **VIS-3**).

The project owner shall use proper design fundamentals to reduce the visual contrast to the characteristic landscape, including the following:

- Use native, drought-resistant landscape plantings;
- Retain existing rock formations, vegetation, and drainage, unless significantly altered by construction activities;
- Avoid soil types that generate strong color contrasts;
- Retain as much of the existing vegetation as possible;
- Use natural, self-weathering materials and chemical treatments on surfaces to reduce color contrast; and
- Reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. Place native or compatible soil, brush, rocks, and natural debris over disturbed areas and irrigation piping.

**Verification:** At least 90 days prior to the start of commercial operation, the project owner shall submit a Landscaping Plan for the entrance and Historic

Interpretive Area of the plant site to the CPM for review and approval. The plan shall include a timeline for installation and continued maintenance and shall be consistent with all requirements listed in condition of certification **LAND-9**; the Revegetation, Weed Management, and Special-Status Plant Remedial Action Plans of conditions of certification **BIO-10-12**; and the **VIS-3** restoration and revegetation plan for the staging and buffer areas.

Implementation of the Landscaping Plan shall commence to later than 30 days following CPM approval. The project owner shall provide quarterly progress reports to the CPM, including photographic documentation, until landscaping installation is complete. Landscaping shall be maintained and annual reports of landscaping condition and maintenance shall be provided to the CPM for the life of the project.

## B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the project will affect the local area's transportation network. The record contains an analysis of: (1) the roads and routings that are proposed to be used for construction and operation; (2) potential traffic-related problems associated with the use of those routes; (3) the anticipated encroachment upon public rights-of-way during the construction of the proposed project and associated facilities; (4) the frequency of trips and probable routes associated with the delivery of hazardous materials; and (5) the possible effect of project operations on local airport flight traffic.

Project impacts were evaluated according to Appendix G of the California Environmental Quality Act (CEQA) Guidelines and the National Environmental Policy Act. As more fully discussed below, we find that the project will not:

- Conflict with adopted polices, plans, or programs;
- Cause a substantial increase in traffic when compared with the existing traffic load and capacity of the street system;
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature or incompatible uses; or
- Result in inadequate parking capacity or a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks or in inadequate emergency access. (CEQA Guidelines, Appendix G.)

As discussed below, we evaluated the project's compliance with the applicable laws, ordinances, regulations, and standards (LORS) set forth below in **Traffic and Transportation Table 2** and find that the project will comply with the applicable LORS.

The evidence was undisputed. (10/29/10 RT 21; Exs. 1, § 5.12, 3, 4 [147-153], 25, 48 [Traffic and Transportation]; 200, § 6.10.)

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Setting

The Rice Solar Energy Project (RSEP) site is located in rural eastern Riverside County, California. The project site is located adjacent to State Route (SR) 62 between Parker, Arizona, and Twenty-nine Palms, California. The RSEP will be located in a sparsely settled portion of the Colorado Desert on abandoned private land that was formerly used as a private military airfield. The nearest residences are located in Vidal Junction, about 15 miles northeast of the site; and at the Metropolitan Water District's Iron Mountain Pumping Plant, about 17 miles to the west. The nearest urban communities to the project site are Parker, Arizona, approximately 32 miles east and Blythe, California approximately 40 miles south. (Ex. 200, p. 6.10-4.)

There is no direct freeway access to the site. The nearest freeways are Interstate 10 (I-10) and Interstate 40 (I-40). Local access is provided by State Route (SR) 62. The transportation network within the proposed RSEP region, including I-10, I- 40, and SR 62 are described as follows:

- SR 62 - An east-west roadway immediately north of the RSEP site; it is also known as Twenty-nine Palms Highway or Aqueduct Road west of SR 177. SR 62 is an undivided two-lane highway in California, but widens to four lanes in downtown Parker, Arizona.

- SR 177 - A north-south roadway west of the RSEP site and is also known as Desert Center-Rice Road. It is an undivided two-lane highway. (Ex. 200, p. 6.10-6.)

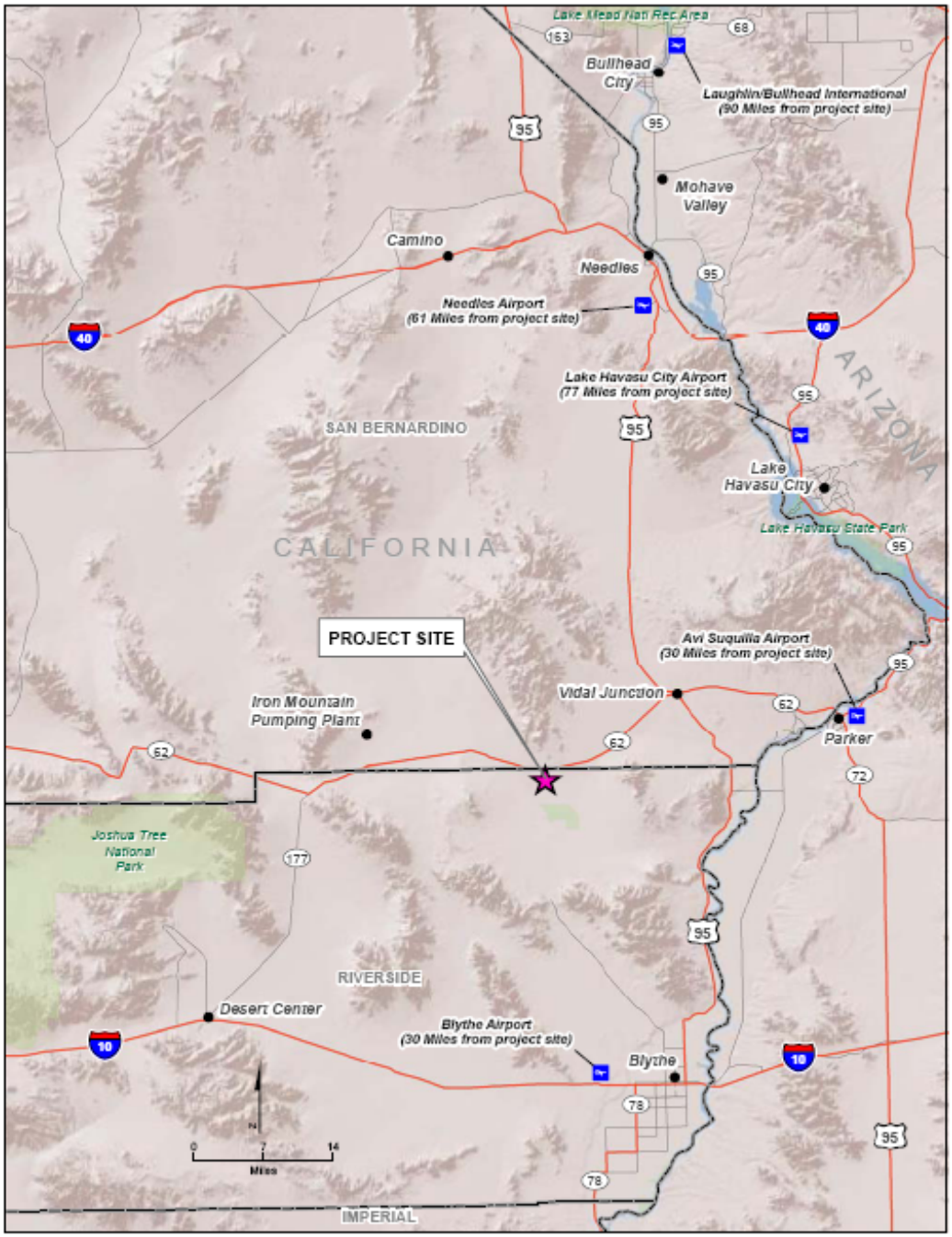
- US Route 95 - An undivided two-lane rural highway that connects I-10 and I-40 to SR 62 east of the RSEP site.

- I-10 - An east-west freeway connecting to SR 177 at the city of Desert Center, 35 miles southwest of the site, and to US 95 at the city of Blythe, California approximately 30 miles southeast of the RSEP site. Access from I-10 to the project site is provided via SR 62 (connected from either SR 177 from the southwest or US 95 from the southeast. Near the proposed project, I-10 has two lanes in each direction.

- I-40 - Connects to US 95 at Needles, California, approximately 40 miles northeast of the RSEP site. Access from I-40 to the RSEP site is via US 95 and SR 62 to the east. Nearest the RSEP site, I-40 has two lanes in each direction. (Exs. 1, pp. 5.12-1 – 5.12-2; 200, pp. 6.10-4 – 6.10-5.)

**Traffic and Transportation Figure 1** below shows the project site in relation to the regional transportation routes.

## Traffic and Transportation Figure 1




LEGEND

PROJECT SITE

COUNTY BOUNDARIES

FIGURE 5.12-1
REGIONAL TRANSPORTATION MAP
RICE SOLAR ENERGY PROJECT
*RIVERSIDE COUNTY, CALIFORNIA*

CH2MHILL

Regarding civilian air facilities, the RSEP will be located, in part, on the site of the Rice Airport (formerly Rice Army Air Field), which is a closed and abandoned airfield about three miles east of the Rice townsite. There are no public or private airports within two miles of the project site. (Ex. 200, p. 6.10-7.)

The closest private airstrip to the RSEP site is the Iron Mountain Pumping Plant Airport, which is an unattended airstrip approximately seven miles northeast. The airstrip is owned by the Metropolitan Water District of Southern California. It has a single, 3,200 foot-long asphalt runway but no services. (Ex. 200, p. 6.10-6.)

The RSEP power block and solar arrays will be located on the site of the Rice Army Air Field and a portion of Camp Rice. This location was a municipal airfield before World War II and reverted to civilian/public status in 1949, then to a private airfield in 1952. It was later abandoned.

There are three military airfields and three operational areas within 50 miles of the RSEP site. And, due to the significant military presences in the southern desert areas, there are a number of military training routes designated for aircraft exercises in the vicinity of the RSEP site. (Ex. 200, p. 6.10-7.) Military training routes (MTRs) are aerial corridors across the United States in which military aircraft can operate faster than 250 knots at altitudes below 10,000 feet. Civilian aircraft are not prohibited from these areas, but are required to operate at slower speeds and are usually diverted from the areas by enroute controllers when operations are in progress. There are three low-level military training routes above the proposed project site, designated IR250, IR255, and SR397, which place limitations on the use of airspace above the proposed RSEP site from the surface to varying altitudes above 10,000 above ground level (AGL). (Ex. 200, p. 6.10-8.)

Four Arizona and California Railroad (ARZC) rail lines are near the RSEP site. One line runs parallel to SR 62 north of both the RSEP site and SR 62, crossing SR 62 near Radio Tower Road about 7.5 miles northeast of the project site, while another crossing of this line is on US 95 near Old Parker Road, about 17.5 miles northeast of the RSEP site. Both of these crossings are protected with automatic arms. Northwest of the RSEP site, two additional crossings are located on SR 62, about 2.5 miles from the project site with flashing beacons but no arms. These two crossings are on an abandoned spur of the ARZC. All four lines contain at-grade public railroad crossings. (Ex. 200, pp. 6.10-8 – 6.10-9.)

No public transportation is available to or from the RSEP site. Local bus service is provided by the Palo Verde Valley Transit Agency, with the nearest bus line located approximately 25 miles southeast of the RSEP site in the City of Blythe. (Ex. 200, p. 6.10-10.)

The Riverside County General Plan discusses the development of bikeways and regional trails within the County. The RSEP site is not designated as being located within or along any Riverside County General Plan designated bikeway; a regional discussion is provided as RSEP traffic would access the site throughout Countywide roadways. US 95 (within the county) is classified as a Regional Trail, a designation assigned to roadways that could provide linkages between areas that connect state and federal trails Additionally, within Riverside County, the historic Bradshaw Trail, located approximately 25 miles southeast of the RSEP site, runs along part of I-10 in Blythe. No pedestrian facilities were identified as being located within proximity of the proposed RSEP site or along identified travel routes of construction-related traffic. (Ex. 200, p. 6.10-10.)

2. Existing Levels of Service

The Applicant evaluated traffic impacts using the methodologies and guidance of the Riverside and San Bernardino County General Plans and Congestion Management Plans and municipal codes. (Ex. 1, p. 5.12-2.)

With the exception of the Desert Center-Rice Road/SR 177, all studied roadway segments in California are governed by either the Riverside County or San Bernardino County Congestion Management Programs (CMP). (*Id*.) In both Riverside and San Bernardino counties, CMP roadways must achieve LOS E or better. Conventional state highways not part of the Riverside County CMP must achieve LOS C or better. The portion of SR 62 in Arizona must achieve LOS C or better. (Ex. 200, p. 5.12-7.) LOS is a qualitative measure used to describe operational conditions within a traffic stream, and to quantify a level of congestion on a particular roadway or intersection considering factors such as speed, travel time, and delay.

The evidence summarizes the existing (as of 2008) roadway LOS for the pertinent roadway segments. All of the identified roadways operate at LOS C or better with the exception of the segment on SR62 eastbound between Utah Trail and Adobe Trail. This segment operates at LOS E. (Ex. 200, p. 6.10-9 [Table 3].)

According to the Applicant, no morning or afternoon counts were available; therefore intersection levels of service (LOS) were not assessed. (Ex. 1, p. 5.12-2.)

3. Construction Traffic

The Applicant expects that construction of the proposed project would last approximately 30 months, starting in the first quarter of 2011 and ending in the third quarter of 2013. There would be a peak daily workforce of 483 between months 8 and 20 of construction. This peak workforce time would be the critical construction period when the highest total number of daily trips is anticipated. Therefore, estimated daily construction trips during this peak construction period were used to determine potential impacts, as this would represent the worst-case construction traffic scenario.

Because of the RSEP's remote location, it is estimated that 30 percent of the workforce is expected to carpool. (Ex. 200, pp. 6.10-10 - 6.10-11.)

For purposes of this analysis, construction truck trips were converted to passenger car equivalent (PCE) trips consistent with the *Highway Capacity Manual* guidelines. There are 765 estimated construction vehicle trips for the proposed RSEP. An analysis was conducted to determine the impacts of these construction vehicle trips on current LOS for project area roadways. **Traffic and Transportation Table 1** below shows the anticipated LOS with and without RSEP construction vehicle traffic for critical roadways in the vicinity of the project.

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## Traffic and Transportation Table 1
## With and Without Project Roadways Levels of Service - Construction

| County | Roadway Segment | AM PEAK HOUR | | | | PM PEAK HOUR | | | | AM and PM Peak Hour CMP Threshold | *Exceed CMP Threshold?* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing Peak Hour LOS | Added Vehicles | Peak Hour V/C With Project | Peak Hour LOS With Project | Existing Peak Hour LOS | Added Vehicles | Peak Hour V/C With Project | Peak Hour LOS With Project | | |
| Riverside, CA | US 95 NB between Hobson Way and San Bernardino/Riverside County Line[1] | C or Better | 298 | -- | C or Better | LOS C or Better | 298 | -- | LOS C or Better | E | *NO* |
| | US 95 SB between Hobson Way and San Bernardino/Riverside County Line[1] | C or Better | 298 | -- | C or Better | LOS C or Better | 298 | -- | LOS C or Better | E | *NO* |
| San Bernardino, CA | SR 62 EB between California/Arizona State Line and junction with US 95 | D | 63 | 0.44 | D | C | 0 | 0.26 | C | E | *NO* |
| | SR 62 WB between California/Arizona State Line and junction with US 95 | B | 0 | 0.21 | B | C | 63 | 0.41 | D | E | *NO* |
| | SR 62 EB between junction with US 95 and San Bernardino/Riverside County Line | A | 211 | 0.15 | B | A | 6 | 0.03 | A | E | *NO* |
| | SR 62 WB between junction with US 95 and San Bernardino/Riverside County Line | B | 6 | 0.16 | B | B | 211 | 0.28 | C | E | *NO* |
| | SR 62 EB between San Bernardino/Riverside County Line and Utah | A | 119 | 0.09 | A | A | 9 | 0.07 | A | E | *NO* |
| | SR 62 WB between San Bernardino/Riverside County Line and Utah Trail | A | 9 | 0.08 | A | A | 119 | 0.09 | A | E | *NO* |
| | SR 62 EB between Utah Trail and Adobe Trail | B | 110 | 0.29 | C | E | 0 | 0.75 | E | E | *NO* |
| | SR 62 WB between Utah Trail and Adobe Trail | E | 0 | 0.92 | E | C | 110 | 0.33 | C | E | *NO* |
| La Paz, AZ | SR 62 EB between California/Arizona State Line and junction with US 95 | C | 126 | 0.50 | C | C | 126 | 0.50 | C | C | *NO* |
| | SR 62 WB between California/Arizona State Line and junction with US 95 | C | 126 | 0.50 | C | C | 126 | 0.50 | C | C | *NO* |

Source: Ex. 200, p. 6.10-13.

As shown, with the addition of the RSEP peak construction traffic, all study area roadways will continue to operate within the designated LOS thresholds. Therefore, construction-related trips will neither exceed any designated thresholds nor result in significant impacts to performance standards of utilized roadways.

Construction of the RSEP's linear facilities was also included in the traffic and transportation analysis. In addition to direct construction related trips, interconnecting the RSEP project into the Western Area Power Administration system will require the construction of approximately 10-miles of generation tie line. The RSEP will also extend an existing 12-kV distribution line for 1.1 miles from a point 175 feet east of the project site boundary, along the northern boundary of the site paralleling SR 62, to the proposed administration building area for construction power purposes.

The evidence shows that the stringing of power lines adjacent to and across roadways could result in temporary lane closures. To minimize these temporary traffic impacts, we adopt Staff-proposed Condition of Certification **TRANS-1,** which requires the Applicant to consult with Riverside County, San Bernardino County, and/or CalTrans in preparing a Construction Traffic Control Plan prior to construction. The plan must include the identification and minimization of any disruptions to street segments during power line construction activities, to the maximum extent feasible. We find that compliance with Condition of Certification **TRANS-1** will reduce temporary transmission related-construction activity impacts to a less than significant level.

4. Operation Impacts and Mitigation

a. Project Traffic

During operation, the RSEP is expected to require approximately 47 employees. According to the Applicant, it did not perform a quantitative traffic analysis for the long-term (30-year) operations phase because operation is anticipated to generate a low volume of trips with no potential to generate a measurable impact on the project area roadways. We agree with this conclusion as this volume of traffic represents a minimal increase over existing traffic volumes and peak hour capacity available on local. We therefore find that RSEP operation will neither alter performance standards of roadways nor result in a significant traffic impact.

Specifically regarding CMP roadways, the Riverside County 2006 CMP Update identifies US 95 as a CMP roadway, while the SANBAG 2007 CMP identifies US 95 and SR 62 as CMP roadways. All roadway segments in the counties' Congestion Management network must maintain a LOS E or better. Furthermore, as discussed above, RSEP operational traffic would represent a minimal increase over existing traffic volumes and peak hour capacity available on local roadways. Therefore, no impacts to CMP designated roadways will result from RSEP operation-related traffic. (Ex. 200, p. 6.10-14.)

5. Aviation Impacts and Mitigation

We evaluate whether the project will result in a change in air traffic patterns. The evidence indicates that no such change will occur to civilian air traffic patterns in the project vicinity. There are no published commercial aviation (Victor) routes below 18,000 feet AGL or other published departure/arrival or regularly traveled route that would bring aircraft into the vicinity of the project stack below 2,500 feet above ground level.

The project will, however, result in a change in air traffic patterns for military aircraft operating within the MTRs over the project area. The proposed RSEP site underlies the following three MTRs in the general vicinity: IR250, IR255, and SR397. Although each place limitations on the use of airspace above the RSEP, the military has agreed to alter operational training procedures and flight patterns to avoid the RSEP's solar receiver tower, in conjunction with the project's implementation of the marking and notification requirements set forth in Conditions of Certification **TRANS-8** and **TRANS-9**. **TRANS-8** requires the project owner to install obstruction marking and lighting on the solar receiver tower in accordance with specified Federal Aviation Administration and Department of Defense (DOD) requirements. Once the height of the tower exceeds 200 feet, temporary lighting must be installed on the top of the structure. Permanent lighting is required upon the completion of construction. Condition **TRANS-9** requires the project owner to implement notification activities to ensure that pilots are aware of the project location and its maximum height, and potential aviation hazards. Compliance with the Conditions of Certification will prevent increased safety risks. (Ex. 200, pp. 6.10-14 - 6.10-15.)

We also evaluate whether the project will interfere with takeoff, landing, or maneuvering of aircraft within airport approach, turning or transition zones or in an area where flight paths are expected to occur below 1,000 feet AGL. We find that the RSEP is not within an airport approach, turning, or transition zone, and

would not interfere with the takeoff, landing, or maneuvering of any aircraft during approach or departure from any airport.

As noted previously, the closest airstrip is the Iron Mountain Pumping Plant Airport, a private, little used field approximately seven miles northwest of the project site. The closest commercial airport is over 30 miles away, in Blythe, California. However, under visual flight rules (VFR), aircraft may legally fly below 1,000 feet AGL in the project area. Aircraft, except for helicopters, flying VFR are normally required to remain 500 feet above structures. There are currently no structures in the project vicinity that would pose a hazard to aircraft flying at that altitude. (Ex. 200, p. 6.10-15.)

The evidence shows that RSEP's construction of a 653-foot solar receiver tower will not pose a hazard to air navigation under the Federal Aviation Administration (FAA) rules as long as the height does not exceed 653 AGL in height and is marked and lighted according to FAA Obstruction Marking and Lighting requirements. (*Id.*) As discussed above, implementation of Conditions of Certification **TRANS-8** and **TRANS-9** will ensure that the project complies with FAA rules.

Condition **TRANS-9** also addresses the impacts associated with reflections from the solar heliostats as the reflections have the potential to cause annoyance, discomfort, or loss of visual performance and visibility, up to and including retinal damage, to pilots or observers within a certain range of the project's solar array. **TRANS-9** requires chart notation and airport advisory notices that inform pilots of the potential safety risk and recommend that over flight of the project's solar receiver tower and solar arrays be avoided below 1,500 feet AGL. We find that compliance with this aspect of **TRANS-9** will reduce impacts to general aviation aircraft to a less than significant level. If overflight of the project site is avoided, incidental intrusive light may still occur, but would not present a substantial hazard to aircraft operations or a health risk to aircraft occupants. (Ex. 200, p. 6.10-15.)

The evidence shows that construction and operation of the RSEP will impact existing military training operations in the project vicinity. The solar receiver tower would encroach into airspace used by the military to conduct low-level and night training exercises and has the potential to significantly impact the safety of military testing and operations conducted along these MTRs. (Ex. 200, p. 6.10-16.) The project's use of lighting, consistent with FAA obstruction lighting requirements, is not sufficient for military pilots to see and avoid the receiver

tower obstruction during low-level or lights-out training missions. Instead, the lighting for the tower must comply with the requirements of Condition of Certification **TRANS-8** as well as the FAA and DOD requirements referenced therein. (Ex. 200, p. 6.10-16.)

Finally, regarding aviation impacts, the evidence establishes that frequencies used during normal power plant construction and operations have the potential to interfere with military transmissions and equipment operation. Condition of Certification **LAND-10** addresses the issue of frequency interference and would require coordination with the military to ensure that no frequencies used at the project site or in conjunction with plant construction or operation would interfere with frequencies used for communication or other military operations. According to the evidence, the military is willing to alter training patterns to avoid the project area, to the extent feasible, which, in conjunction with full implementation of all other proposed aviation-related Conditions of Certification, would reduce any potential impacts to military operations to a less than significant level. (Ex. 200, p. 6.10-16.)

6. Hazards and Public Safety

Construction impacts to vehicle hazards and public safety would be minimized by proposed Condition of Certification **TRANS-1**, which requires the preparation of a Construction Traffic Control Plan that includes use of flagging and covering open trenches, would minimize hazards due to possible backup as construction workers enter and exit the RSEP site when their shifts begin and end. As construction related traffic would access the sites from a number of regional areas with the potential for traveling along roadways with residential development, Condition of Certification **TRANS-1** requires that all construction-related traffic be diverted to the maximum extent feasible away from residential areas.

Additionally, another potential safety hazard for the public is at-grade railroad crossings which create a potential for train to vehicle collisions, particularly with RSEP construction-related large trucks hauling heavy loads. As discussed earlier, four at-grade public crossings are close to the project site. To minimize any potential impacts from rail crossings, including impacts involving motorists other than project delivery truck, Condition of Certification **TRANS-1** requires the preparation of a Construction Traffic Control Plan that includes identifying safety measures in the event oversize vehicles cross any railroad tracks. This Condition also requires the project owner to consult with Riverside County, Cal-

Trans, and the Arizona and California Railroad in developing the Construction Traffic Control Plan.

There is also a potential for unexpected damage to roads by vehicles and equipment within the project area that could result in a roadway hazard to the public. Therefore, we are proposing Condition of Certification **TRANS-3,** which would require that any road damaged by project construction be repaired to its original condition. This will ensure that any damage to local roadways will not be a safety hazard to motorists.

The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. California Vehicle Code Sections 35550 - 35559 establishes guidelines for oversize vehicle loads. To ensure consistency with these applicable ordinances, Condition of Certification **TRANS-4** would require that all oversize vehicles used on public roadways during construction comply with Caltrans, Riverside County, San Bernardino County, and other relevant jurisdiction's limitations on vehicle sizes and weights, as well as oversize vehicle routes and any other applicable limitations or other relevant jurisdictional policies.

Temporary visible water vapor plumes associated with salt conditioning may occur during construction. However, visible plumes are not expected to reach SR 62, which is over 1,000 meters away from the RSEP power block. Therefore, no impact on surface traffic safety would occur from any ground fogging plumes related to RSEP activities. (Ex. 200, p. 6.10-17.)

Based on the foregoing, we find that implementation of Conditions of Certification **TRANS-1**, **TRANS-3**, and **TRANS-4** would ensure that the proposed project will avoid or result in only minor hazard and safety impacts to motorists. These impacts will be less than significant

7. Operational Intrusive Light

The RSEP involves the use of mirrors mounted on pylons with motor controls for following the sun (heliostats) to redirect sunlight at a solar power receiver to generate heat for use in electric power generation. Because of the possible impact of this redirected sunlight on observers such as motorists on the adjacent highway or in aircraft overhead, these impacts are analyzed below.

Total solar energy is the complete spectrum of sunlight including ultra violet energy (UV), the visible spectrum, and infrared energy (IR). It is this total solar

irradiation that has the potential to create a human safety impact by causing erythemal damage, such as sunburn and retinal damage. Total solar energy is evaluated in units of power as kilowatts per square meter ($kW/m^2$). (Ex. 200, pp. 6.10-17 - 6.10-18.)

Intrusive light or glare is defined as the sensation produced by a point luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss of visual performance and visibility. Luminance or brightness perceived by observers is evaluated in units of candelas per square meter ($cd/m^2$) and its impact as illuminance in lux or lumens per square meter ($lm/m^2$). (Ex. 200, p. 6.10-18.)

There are currently no regulations specific to light reflected from solar arrays; however, potential safety effects of solar radiation from the proposed project have been analyzed within the context of principles and procedures developed for beam safety in the Solar 1 experimental plant at Daggett, California, as conducted by the Sandia National Laboratories. The study identified the following maximum permissible exposure (MPE) limits for reflected sunlight:

- MPE for momentary exposure (for a period of 0.15 second or less) is a retinal irradiance of 10 $kw/m^2$ that could cause temporary flash blindness; and
- MPE for continuous exposure (for a period greater than 0.15 second) is a retinal irradiance of 1 $kw/m^2$ that could cause permanent retinal injury. (Ex. 200, p. 6.10-18.)

The record describes Staff's evaluation of the possible impacts of the heliostat field on observers from SR 62 and from aircraft. After consideration of several scenarios, Staff concluded that the exposure to solar radiation reflected from heliostats would be momentary because the observers would most likely be in motion—traveling either by vehicle or aircraft. Even so, because of the limited experience with the impacts associated with the performance of concentrated solar power technologies, including associated intrusive light issues, and in consideration of potential harmful and/or distractive solar energy exposure to ground and airborne observers, long-term monitoring is recommended to identify the risk of exposure to light reflected from heliostats, we adopt Condition of Certification **TRANS-6.** Condition **TRANS-6** requires the Applicant to prepare a Heliostat Positioning Plan that would accomplish the following:

- Identify the heliostat movements and positions (including reasonably possible malfunctions) that could result in potential exposure of observers

at various locations including in aircraft, motorists, pedestrians and hikers in nearby wilderness areas to reflected solar radiation from heliostats;

- Describe within the Heliostat Positioning Plan how programmed heliostat operation would avoid potential for human health and safety hazards at locations of observers, and would limit or avoid potential for harm to birds;
- Prepare a monitoring plan that would: (a) obtain field measurements in response to legitimate complaints; (b) verify that the Heliostat Positioning Plan would avoid potential for human health and safety hazards including temporary or permanent blindness at locations of observers; and (c) provide requirements and procedures to document, investigate and resolve legitimate complaints regarding intrusive light; and
- Provide that the monitoring plan would be coordinated with the CalTrans, CHP, FAA, U.S. Military and the Riverside County Airport Land Use Commission and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project. (Ex. 200, pp. 6.10-22 - 6.10-22.)

Although the evidence shows that solar radiation reflected from the solar receiver of the tower is not expected to pose a health and safety hazard to motorists on SR 62 and is not expected to pose a health and safety hazard to pilots or passengers in aircraft flying over the site, it would remain a bright, intrusive object in the field of view. Therefore, to ensure that the solar receiver tower will have less than significant impacts to motorists or aviation activities, Condition of Certification **TRANS-7** requires the project owner to prepare a Solar Energy Receiver Luminance Monitoring Plan to provide procedures for conducting periodic monitoring and to document, investigate, and resolve complaints regarding distracting effects from potentially excessive brightness on aviation, vehicular traffic, and other possible observers from the solar energy receiver. (Ex. 200, p. 6.10-23.)

8. Emergency Access Impacts and Mitigation

In the event of an emergency at the RSEP site during construction or operation, emergency vehicles would likely use SR 62 to the plant entrance driveway to access the project site. To maintain temporary access for emergency vehicles and allow for adequate access into the facility, proposed Condition of Certification **TRANS-1** requires the preparation of a Construction Traffic Control Plan, which includes the assurance of access and movement of emergency vehicles during construction. To ensure all RSEP internal access roadways required for operation (including a proposed new one-lane dirt access road for 4.6 miles between the project site fence line and Rice Valley Road) would be

designed consistent with all Riverside County Ordinance 461 requirements, Condition of Certification **TRANS-5** is required to ensure adequate turning radius for emergency vehicles to navigate within the facility boundaries and internal circulation roadways. Proposed Condition of Certification **WORKER SAFETY-6** would add a second access road to the project for emergency services., See the **Worker Safety and Fire Protection** section of this Decision for additional discussion of emergency vehicles access to and movement within the RSEP site. (Ex. 200, pp. 6.10-23 - 6.10-24.)

9. Impacts on Public and Alternative Transportation and Mitigation

As discussed earlier, no public bus transportation is available to or from the RSEP site and as a result, there are no local bus stops in the immediate proximity of the RSEP site.

The Riverside County General Plan designates the portion of US 95 within the County as a Regional Trail for bicycle use. The project intends to use this roadway for construction vehicles. The project's compliance with Condition of Certification **TRANS-1**, which requires the preparation of a Construction Traffic Control Plan and ensures bicycle access and along construction truck routes, impacts will not occur or will only be minor during RSEP construction. (Ex. 200, p. 6.10-24.)

10. Project Closure and Decommissioning

The planned operational life of the RSEP is 30 years, but the facility could possibly operate for a longer or shorter period depending on economic or other circumstances. We assume that the number and type of workers required for closure and decommissioning activities would be similar to that described above for construction of the RSEP. We also assume that decommissioning activities would utilize the same regional and local roadways that will serve the RSEP site.

Although it is difficult to speculate about the capacity or LOS of area roadways when decommissioning activities are implemented, we recognize that these activities would be temporary in duration resulting in a similar or lesser number of vehicle trips presented above for proposed project construction. We do not anticipate significant traffic or transportation impacts to area roadways or transportation related facilities from RSEP closure and decommissioning activities. We therefore find that closure and decommissioning of the proposed RSEP would not result in any direct permanent effects to local and regional

roadway capacities serving the site, or alternative transportation facilities. (Ex. 200, p. 6.10-24.)

11. Cumulative Impacts

A project may result in significant adverse cumulative impacts when its effects are "cumulatively considerable." Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, or the effects of probable future projects. (Cal. Code Regs., tit. 14 § 15130.) Cumulative traffic and transportation impacts could occur when more than one project has an overlapping construction schedule that creates additional traffic flow on shared roadways that cannot be met by the existing capacity, resulting in LOS impacts. Operational cumulative socioeconomic impacts could occur when the development of multiple projects significantly impacts the local area roadway LOS.

The evidence of record contains a discussion of proposed projects near the RSEP project site along the I-10 corridor in eastern Riverside County including renewable energy projects and existing and foreseeable projects in the Rice Valley area and Eastern Riverside County.

As discussed earlier, construction of the RSEP will result in a short-term increase in traffic volumes on US 95 and SR 62 related to construction activities and workers. Foreseeable development in the project area at the scope of which may combine with the RSEP cumulatively includes primarily renewable energy electrical generation and transmission infrastructure projects. With the large number of renewable energy projects occurring within the RSEP regional area, it is possible that some overlap of construction phasing could occur between the RSEP and the cumulative development projects as identified in SA/DEIS Section, Cumulative Scenario. (Ex. 200, pp. 5-1 - 5-16.) Therefore, cumulative projects that may be under construction at the same time as the RSEP could use the same regional roadways for construction related vehicle site access during their respective construction periods. It should be noted, however, that based on direct construction traffic volumes, the RSEP would be expected to contribute a less than significant increase of daily traffic volumes to the possible short term roadway LOS cumulative impacts. (Ex. 200, pp. 6.10-43 - 6.10-44.)

All cumulative projects are expected to draw on the regional transportation system serving Riverside/San Bernardino Counties and the State of Arizona. The

evidence shows that the RSEP is located between clustered future development of solar energy projects to the northwest along the SR 62 corridor and to the south along the I-10 corridor. Due to its location in relation to these cumulative development projects and the geography of the regional transportation system, the RSEP has the most potential to contribute cumulatively to those proposed projects located along the SR 62 corridor. As described and analyzed above, RSEP related traffic is considered to only have the potential to impact SR 62 and US 95. Therefore, cumulative development located along these corridors is considered to have the greatest cumulative potential.

To mitigate the potential for cumulative impacts to roadway performance standards, Condition of Certification **TRANS-1** requires that the Construction Traffic Control Plan for the RSEP take into account the cumulative traffic impacts of other nearby solar energy projects utilizing both SR 62 and US 95 during construction. This Condition requires coordination with all solar development project applicants likely to share SR 62 and US 95 as key construction vehicle routes in conjunction with the RSEP, ensuring that timing of heavy equipment and building materials deliveries as well as worker trips of overlapping construction schedules do not result in either SR 62/US 95 to operate at an acceptable LOS with the addition of cumulative construction traffic. With the incorporation of this condition, the proposed RSEP would not contribute construction traffic on regional and local roadways at a volume that could contribute substantially to cumulative impacts of existing roadway LOS, including applicable CMP performance standards. (Ex. 200, p. 6.10-45.)

With regard to temporary cumulative safety impacts during construction, incorporation of proposed Conditions of Certification **TRANS-1, TRANS-3**, **TRANS-4** and **TRANS-5** as part of the RSEP would ensure that the proposed project not have a considerable contribution to cumulative hazards and public safety, emergency access, or alternative transportation impacts during construction. While cumulative development could result in overlapping construction vehicles on utilized construction traffic routes, it is assumed each cumulative project will include project specific measures similar to that of RSEP Conditions of Certification **TRANS-1, TRANS-3**, **TRANS-4** and **TRANS-5,** reducing respective traffic hazard impacts and thus insuring each cumulative project to be in compliance with applicable LORS, consistent with those applicable to the RSEP, as described in **Traffic and Transportation Table 1**. Therefore, due to the incorporation of Condition of Certification **TRANS-1**, **TRANS-3, TRANS-4** and **TRANS-5**, the RSEP would not contribute to cumulative traffic or transportation related construction vehicle hazard impacts. (Ex. 200, p. 6.10-45.)

Operation of the RSEP would result in minimal long-term daily traffic volumes on regional and local roadways. Furthermore, based on the evidence, renewable energy electrical generation and transmission infrastructure projects occurring within the RSEP regional area are also expected to generate negligible daily traffic volumes similar to that of the RSEP. These operational traffic volumes would likely utilize multiple travel routes for worker and maintenance related traffic. Based on the available future capacity and LOS of roadways likely utilized by RSEP operational traffic, any cumulative increase in traffic volumes are not expected to significantly impact the performance standards of these roadways. Therefore, the proposed RSEP would not contribute cumulatively to adverse long-term impacts to roadway LOS serving the regional or local area. (Ex. 200, p. 6.10-46.)

With regard to aviation, multiple solar projects are proposed along SR 62, SR 177, I-10, and north into San Bernardino County that would contribute to the need for site avoidance by private aircraft and alterations to military operations over the entire southern desert area. Altitude restrictions would be further expanded in the Rice Valley, Ward Valley, Chuckwalla Valley, and along the I-10 corridor from Desert Center to Blythe and into Arizona. General aviation would be most affected, as the current long stretches of uncontrolled airspace for VFR flight would be broken up, especially below 2,500 feet AGL. Conditions of Certification **TRANS-8** and **-9** would provide pilots with the information needed to meet FAA requirements to see and avoid the proposed receiver tower and exhaust plume, and minimize exposure to intrusive light for this project. Construction of additional solar or wind projects in the general vicinity would expand the areas that pilots would need to avoid, but would not substantially increase aviation risks or impose undue hardship on the limited civil aviation traffic in the area at this time. The proposed project would not significantly increase the potential cumulative impacts to civil aviation. (Ex. 200, p. 6.10-46.)

As with civilian aviation traffic, the cumulative impacts of the proposed project and all other foreseeable renewable energy projects in the area have the potential to adversely affect the use of the area's airspace as a military training location. There are three low-level military training areas above the Ward and Rice Valleys, extending from the surface to above 10,000 feet AGL. Potential impacts to military maneuvers increase incrementally with each additional facility and can include structural obstructions to the airspace, visibility issues, and frequency interference. Conditions of certification **LAND-7**, **-8**, and **-9**, in conjunction with the military's willingness to alter its training program, would reduce the proposed project impacts on military operations to a less than

significant level, however, this is the first of many projects proposed for this area. While it is reasonable to assume that similar Conditions of Certification or approval would be required for similar projects, it would depend on the military's cooperation and ability to repeatedly alter its training patterns to avoid any substantial cumulative impacts. Assuming military cooperation, the proposed project would not contribute significantly to any potential cumulative aviation impacts. (Ex. 200, pp. 6.10-46 - 6.10-47.)

Based on the evidence, the proposed Ward Valley Solar Electric Project is the only project that is potentially foreseeable to be developed within the visual view shed of the RSEP. The Ward Valley project would be located approximately five miles northwest of RSEP, and would be located north of SR 62. It is expected that the intrusive light impacts associated with the Ward Valley project would be mitigated to less than significant similar to the manner as the agencies have identified for RSEP. The separation by distance of the Ward Valley project from RSEP and even greater distances of existing and foreseeable projects, and the ability to identify mitigation to lessen impacts below levels of significance for both RSEP and Ward Valley, allow the conclusion that the cumulative effects of intrusive light from RSEP are deemed less than significant if Conditions of Certification **TRANS-6, TRANS-7**, and **TRANS-9** are implemented. (Ex. 200, p. 6.10-47.)

Due to the short-term construction based activities associated with the decommissioning of the RSEP, it is expected to result in similar cumulative impacts related to traffic and transportation as RSEP construction impacts, as described above. It is possible that the decommissioning of nearby proposed solar energy projects could occur concurrently with the decommissioning of this project, due to the similar lifespan of these projects. However, due the unknown roadway capacity or LOS of regional roadways serving the RSEP and cumulative project area at the time of decommissioning, it is not possible at this time for the agencies to speculate the level of, if any, cumulative effects related to traffic and transportation that could occur during decommissioning of the RSEP. However, based on the cumulative impact analysis above for RSEP construction activities, it is likely the impacts of the decommissioning of the RSEP would not be expected to contribute to cumulative impacts related to traffic and transportation because it is assumed that closure and decommissioning activities would include mitigation similar to that proposed for the RSEP as Conditions of Certification **TRANS-1, TRANS-3, TRANS- 4** and **TRANS-5**. (Ex. 200, p. 6.10-47.)

12. Compliance with LORS

As discussed above and also summarized below in **Traffic and Transportation Table 2,** the project will comply with all applicable LORS. (Exs. 1, 5.12-19 – 5.12-24; 200, pp. 6.10-47 - 6.10-52.)

**Traffic and Transportation Table 2**
**Project Compliance with Adopted Traffic and Transportation Laws, Ordinances Regulations, and Standards**

| Applicable Law | LORS Description and Project Compliance Assessment |
|---|---|
| **Federal** | |
| Code of Federal Regulations, Title14 Aeronautics and Space, Part 77 Objects Affecting Navigable Airspace (14 CFR 77/FAR Part 77) | FAR Part 77 establishes standards for evaluating the potential hazards associated with physical objects that extend into navigable airspace. It also sets noticing and hearing requirements and provides for aeronautical studies to determine the effect of physical objects on the safe and efficient use of airspace. Projects that would result in a structure taller than 200 feet AGL or any construction or alteration on a public use or military airport are required to file an FAA Form 7460-1 notification, providing information on the location, height, and other pertinent information. Other conditions may also trigger the need to notify the FAA, including the construction of structures within 10,000 ft. of a public-use or military airport having no runway more than 3200 ft. in length and exceeding a 50:1 slope; within 20,000 ft. of a public-use or military airport having at least one runway more than 3200 ft. in length and exceeding a 100:1 slope; or within 5,000 ft. of any public-use heliport and exceeding a 25:1 slope. It also applies to any highway, railroad, or other traverse way for mobile objects of a height which, if adjusted upward to the height of the highest mobile object that would normally traverse it, would exceed the above-mentioned criteria. However, none of these additional criteria would apply to the proposed project.<br><br>Once the notification is filed, the FAA Air Traffic Division initiates a review to determine if the proposed structures or objects would affect any public use airport, require a change in aeronautical operations or procedures, exceed obstruction standards, or would have a possible impact on VFR operations. The notification is also circulated to various interested agencies, public-use airports within 13 miles, private-use airports and heliports within five miles, military and state aviation departments, air traffic control facilities and flight service stations that serve the area, and local interested organizations and individuals for comment. To be considered to have an adverse effect on navigation, the obstruction must be a physical structure or object that:<br>• Exceeds Part 77 obstruction standards or have a physical or electromagnetic effect on air navigational facilities;<br>• Requires a change to an instrument procedure or minimum flight altitude;<br>• Restricts control tower line-of-site;<br>• Reduces airport capacity and efficiency; or<br>• Affects useable runway length. |

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| | However, in order to be considered a "hazard" to navigation, the obstruction must also result in a substantial adverse effect. This requires a finding of adverse effect (see list above) that impacts a significant volume of aeronautical operations, which is defined as:<br>• One or more aeronautical operations per day (regardless of type of activity); or<br>• An average of one aeronautical operation a week for an affected instrument approach procedure or minimum altitude, if the procedure serves as the primary procedure under specific conditions (i.e., a crosswind runway with an instrument approach procedure). (FAA 2008)<br><br>If the proposed obstruction meets both criteria, a hazard determination will be issued. Otherwise, a "Determination of No Hazard to Navigation" will be made. It should be noted that the FAA has no authority to prohibit construction of any project. It can only identify the potential hazard and work with the proponent to mitigate any potential impacts. A Determination of No Hazard to Navigation also does not preclude the potential for aviation hazards not addressed in the rather narrow criteria indicated above.<br><br>The proposed project would result in the construction of a single stack structure to a height of approximately 653 feet AGL. An FAA Form 7460-1 was filed by the applicant on May 1, 2009, in compliance with the requirements of FAR Part 77. Although the proposed stack would exceed FAR Part 77 obstruction standards, it was not deemed to result in a substantial adverse effect on navigation, based on the criteria defined above. The FAA Air Traffic Airspace Branch in Fort Worth, Texas, issued a "Determination of No Hazard to Navigation" on December 28, 2009, subject to the following requirements:<br>• The project owner would be required to file FAA Form 7460-2 Notice of Actual Construction or Alteration (Part 1) at least 10 days prior to the start of construction.<br>• The project owner would be required to file FAA Form 7460-2 Notice of Actual Construction or Alteration (Part 2) within five days after stack construction reaches its greatest height.<br>• The project owner would be required to mark and/or light the stack, in accordance with the FAA's requirements for 24-hour medium strobes. (FAA 2007)<br>The Notice also advised the applicant that construction of any structure with a height exceeding 653 feet AGL (1,461 feet above mean sea level) would result in a substantial adverse effect and would warrant a "Determination of Hazard to Air Navigation." (FAA 2009c)<br>The project would be consistent with this regulation with full implementation of conditions of certification **TRANS-2** and **TRANS-8**. |
| CFR, Title 49, Subtitle B | Includes procedures and regulations pertaining to interstate and intrastate transport (includes hazardous materials program procedures) and specifies safety measures for motor carriers and motor vehicles that operate on public highways. |
| | Enforcement is conducted by state and local law enforcement agencies and through state agency licensing and ministerial permitting (e.g., California Department of Motor Vehicles licensing, Caltrans permits), and/or local agency permitting (e.g., Riverside County Department of Public Works permits). For a |

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| | discussion of the potential impacts related to the transport of hazardous materials, please refer to the **Hazardous Materials Management** section in this SA/DEIS. |
| **State** | |
| California Vehicle Code, division 2, chapter 2.5; div. 6, chap. 7; div. 13, chap. 5; div. 14.1, chap. 1 & 2; div. 14.8; div. 15 | Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. |
| | Enforcement is provided by state and local law enforcement agencies and through ministerial state agency licensing and permitting and/or local agency permitting. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space by the oversize vehicle. Therefore, staff is proposing Condition of Certification **TRANS-4,** which would require that all oversize vehicles used on public roadways during construction comply with Caltrans limitations on vehicle sizes and weights. |
| California Streets and Highway Code, division 1 & 2, chapter 3 & chapter 5.5 | Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits. |
| | Enforcement is provided by state and local law enforcement and through ministerial state agency licensing and permitting and/or local agency permitting. There is also a potential for unexpected damage to roads by vehicles and equipment within the project area. Therefore, staff is proposing Condition of Certification **TRANS-3,** which would require that any road damaged by project construction be repaired to its original condition. |
| Government Code §§65940 and 65944 | Government Code §§65940 and 65944 require consultation among the project applicant, public agencies, and affected military branch(es) to reduce the potential for project impacts to military operations. The proposed project and all alternatives at the primary project site are in a DOD Airspace Consultation Area and underlie three low-level military training routes, designated IR250, IR255 & SR397. The Desert Center alternate site (discussed in the **Alternatives** section of this Decision) underlies four low-level military training routes, designated IR217, IR218, VR289 and VR296. Consistent with GC §§65940 and 65944, Energy Commission staff has consulted with the Military Sustainability Office - NAVAIR Ranges (Department of Defense Southwest Renewable Energy Work Group), which identified the applicable military training routes and direction for those actions necessary to avoid any impact to military operations (DOD 2010). Staff has proposed three Conditions of Certification (**TRANS-8, TRANS-9,** and **TRANS-10**) in response to that information, which, when implemented, would reduce potential mission impacts to a less than significant level (also see the **Land Use** section of this document). The project would then be consistent with the requirements of this portion of the California Government Code. |
| **Local** | |
| Riverside County Ordinance 461 | Provides County road improvement standards and specifications. |
| | Condition of Certification **TRANS-5** is required to ensure commercial driveways comply with Riverside County Public Works (Riverside County Ordinance 461) requirements. |
| Riverside County General Plan | Specifies that all County maintained roads and conventional state highways shall operate at a Level of Service (LOS) C or better |

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| | As shown in **Traffic and Transportation Table 5**, Riverside County roadways include US 95 NB between Hobson Way and San Bernardino/Riverside County Line. During construction, this segment of US 95 would operate at LOS C or better. Therefore, the RSEP would be in compliance with this LORS. |
| Riverside County Code, Ordinance 448 (as amended through 448.A) Airport Operations (2000) | The Airport Approaches Zoning Ordinance, adopted pursuant to the Airport Approaches Zoning Law (GC §§50485-50485.14) establishes airport operating areas and regulates height standards and limits therein. "Airport Hazard" is defined as "any structure or tree or use of land which obstructs the airspace required for the flight of aircraft in landing or taking off at an airport or is otherwise hazardous to such landing or taking off of aircraft." The operational area of an airport is all land lying within an area of two miles of the landing area. The proposed North of Desert Center Alt. site is within the Turning Zone of the Desert Center Airport. Height restrictions within the Turning Zone do not allow the construction of any structure over 150 feet tall. A variance to this ordinance requirement can be approved by the Riverside County Planning Commission, except for the Energy Commission's exclusive authority, provided enforcement would result in practical difficulty, the relief granted would not be contrary to the public interest, and it would do substantial justice and be in accordance with the spirit of the regulations and §7(c) of this ordinance. However, lights and markers necessary to indicate the presence of an airport hazard to aerial navigators must be installed, operated, and maintained. Condition of certification **TRANS-8** would require appropriate lighting of the solar tower, consistent with both DOD and FAA requirements. Condition of certification **TRANS-9** would require notices to aeronautical charts for the area to advise pilots of the airport hazard. This would ensure consistency with this ordinance. |
| Riverside County Ordinance No. 748 | This ordinance adopts and sets forth policies, regulations and fees relating to the funding and installation of Traffic Signals that are a part of the mitigation of the cumulative environmental impacts of traffic congestion generated by new developments and land use changes |
| | Prior to issuance of a building permit, the project proponent will coordinate with Riverside County based on final site design the required fees related to Riverside County Ordinance No. 748. The payment of these fees, as assessed and paid during part of the required building permit process, will ensure compliance with this LORS. |
| Riverside County Congestion Management Plan (CMP) | Specifies that all CMP roadways shall operate at a LOS E or better. |
| | The Riverside County 2006 CMP Update identifies US 95 as a CMP roadway. As shown in **Traffic and Transportation Table 5**, RSEP construction would have no impact on study area roadway LOS, with US 95 operating above LOS E with project construction added. It should also be noted that operational traffic would not reduce any CMP roadway to operate at less than LOS E. Therefore, the proposed RSEP would be in compliance with this LORS. |
| Riverside County Airport Land Use Compatibility Plan (ALUCP); 2004 | The Riverside County ALUCP, adopt by the Riverside County Board of Supervisors in October 2004, contains general compatibility criteria applicable to all airports within Riverside County, as well as specific requirements for individual airports. The Desert Center Airport, known during WWII as the Desert Center Army Airfield, is located directly across SR 177 from the proposed Alternative 3 project site. The airport is privately owned by the developers of the Chuckwalla Valley Raceway and only available for use by members and guests. Activity levels should remain consistent with flight operations prior to 2004 (i.e., no more than 2,300 operations annually). There is no tower or published instrument approach/departure routes. The airspace above the Desert Center Airport is uncontrolled and air traffic control has no authority or responsibility for flights below 1,200 feet AGL within this airspace. There is no master plan for the Desert |

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| | Center Airport. Standard direct departures from the single remaining runway are to the southwest (heading of 230 degrees) or northeast (heading of 050), into prevailing winds. Straight in (out) departures would remain outside the proposed project site boundaries. The airport is not lighted and is only available during daylight hours. The entire project site, including the central tower, would be outside all airport compatibility zones and the airport area of influence boundary (see **Land Use Figure 11**), but would be within the two-mile Airport Turning Zone**. TRANS-8** would require the solar tower to be lighted, consistent with the FAA requirements for Obstruction Marking and Lighting (FAA 2007), requirements in response to FAA 7460 Finding of No Significant Hazard (FAA 2009c), Air Force Aviation Safety-Flight Safety Flash 09-01 (USAF 2009), and FAA Safety Alert for Operators (SAFO) 09007 (FAA 2009a). **TRANS-9** would require pilots to be advised of the location of the proposed solar tower through issuance of a temporary Notice to Airmen (NOTAM) that would be superseded by a permanent notation of the tower's location on the applicable aviation charts for the Desert Center Airport and surrounding airspace. (RC 2004, p.3-16) Therefore, this project alternative would be consistent with requirements of the Riverside County ALUCP and the existing airport use. |
| San Bernardino Association of Governments CMP | Specifies that all CMP roadways shall operate at a LOS E or better. |
| | The SANBAG 2007 CMP identifies US 95 and SR 62 as CMP roadways. As shown in **Traffic and Transportation Table 5**, RSEP construction would have no impact on study area roadway LOS, with US 95 and SR 62 operating above LOS E with project construction added. It should also be noted that operational traffic would not reduce any CMP roadway to operate at less than LOS E. Therefore, the proposed RSEP would be in compliance with this LORS. |
| San Bernardino County Code, Title 5, Division 1, Highway Permit | Addresses permitting requirements for oversize/overweight vehicles. |
| | Enforcement is provided by state and local law enforcement agencies and through ministerial state agency licensing and permitting and/or local agency permitting. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space by the oversize vehicle. Therefore, staff is proposing Condition of Certification **TRANS-4,** which would require that all oversize vehicles used on public roadways during construction comply with San Bernardino County limitations on vehicle sizes and weights. |

## FINDINGS OF FACT

Based on the evidence of record, we make the following findings:

1. During the construction and operation phases, local roadway and highway demand resulting from the daily movement of workers and materials will not increase beyond significance thresholds established by Riverside County.
2. With the conditions of certificate, the RSEP will comply with all applicable LORS related to traffic and transportation.
3. No local bus stops, pedestrian, or bicycle facilities are in immediate proximity of the proposed RSEP site.

4. Condition of Certification **TRANS-1** would require the Applicant to prepare a Construction Traffic Control Plan prior to construction, would also include the identification and minimization of any disruptions to street segments during power line construction activities, to the maximum extent feasible.

5. Implementation of Condition of Certification **TRANS-3** would ensure that any road damaged by project construction be repaired to its original condition.

6. Implementation of Condition of Certification **TRANS-4** would ensure that all oversize vehicles used on public roadways during construction comply with Caltrans, Riverside County, San Bernardino County, and other relevant jurisdictions limitations on vehicle sizes and weights, as well as oversize vehicle routes and any other applicable limitations or other relevant jurisdictional policies.

7. Implementation of Condition of Certification **TRANS-6** would insure preparation and application of a Heliostat Positioning Plan in coordination with the Avian Protection Plan specified in Condition of Certification **BIO-24** that would avoid potential for human health and safety hazards and bird injury or mortality from solar radiation exposure.

8. The project would not result in a change to civilian air traffic patterns in the project vicinity. Impacts resulting from changes in air traffic patterns for military aircraft operating within the MTRs over the project area would be mitigated to a less than significant level with full implementation of Conditions of Certification **TRANS-8** and **TRANS-9**, in conjunction with the military's willingness to alter training activities in the area**.**

9. Condition of Certification **TRANS-8** would require lighting of the solar receiving tower consistent with both FAA and DOD requirements, reducing potential obstruction to military or general aviation airspace, especially at night, to a less than significant level.

10. Intrusive light from the solar arrays at specific points over the heliostats has the potential to result in a significant health and safety visual and control risk for aircraft pilots and their passengers. Condition of Certification **TRANS-9** would advise pilots of the hazard and the need to avoid overflight of the solar receiving tower and solar arrays below 1,500 feet AGL. Implementation of this Condition of Certification would reduce the risk to a less than significant level.

11. Frequencies used during plant construction and operation have the potential to interfere with military training operations in the project vicinity. Implementation of Condition of Certification **TRANS-10** would require military coordination and approval of frequencies in use at the project site and would reduce any potential impact to a less than significant level.

12. Implementation of Condition of Certification **TRANS-7** would allow for preparation and application of a Power Tower Luminance Monitoring Plan

to provide procedures to conduct periodic monitoring and to document, investigate and resolve complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the RSEP solar receiver tower.

13. The project itself would not have a cumulatively considerable impact on either general or military aviation in the project area. However, depending on the number of other similar facilities constructed in the area in the future, there is the potential for a significant cumulative impact to aviation, especially military training in the vicinity.

## CONCLUSIONS OF LAW

1. The Rice Solar Energy Project would be consistent with the Transportation Element in the Riverside County General Plan, local circulation plans and policies and all other applicable laws, ordinances, regulations, and standards.

2. The project will not have a significant adverse impact on the local and regional road/highway network.

## CONDITIONS OF CERTIFICATION

## CONSTRUCTION TRAFFIC CONTROL PLAN

**TRANS-1** The project owner shall consult with Riverside County, San Bernardino County, Cal-Trans, and Arizona and California Railroad and shall prepare and submit to the Compliance Project Manager (CPM) for approval a Construction Traffic Control Plan and implementation program. The Traffic Control Plan shall be prepared in accordance with Caltrans Manual on Uniform Traffic Control Devices and the WATCH Manual and shall include but is not limited to the following issues (as needed and as feasible):

<u>Project Specific Measures:</u>

- Encourage use of carpools, vanpooling or other ride share programs;
- Scheduling heavy equipment and building materials deliveries;
- Redirecting construction traffic with a flag person as needed;
- Signing, lighting, and traffic control device placement if required;

- Scheduling of construction work hours and arrival/departure times outside peak traffic periods as needed;
- Ensurance of access for emergency vehicles to and within the project site;
- Ensurance of access and movement of bicycles along US-95 construction truck routes;
- Identification of haul routes requiring rail crossings of oversize vehicles and safety measures to limit potential impacts;
- Temporary closure of travel lanes or disruptions to street segments and intersections during generation tie line construction activities or any other utility tie-ins. In the event any lane closures are required on the State Highway System, the Construction Traffic Control plan shall demonstrate compliance with Caltrans Section 517 of the Encroachment Permits Manual;
- Access to residential and/or commercial property located near generation tie line routes or any other utility tie-ins; and
- Identification of safety procedures for exiting and entering the site access gate(s).

Cumulative Measures:

- Take into account the cumulative traffic impacts of the overlapping construction schedules of other nearby renewable energy projects utilizing SR 62, US 95, or any roadway indicated by the Construction Traffic Control Plan as a haul route, ensuring that timing of heavy equipment and building materials deliveries as well as worker trips of overlapping construction schedules do not result in SR 62, US 95, or any freeway/roadway to operate at an unacceptable LOS with the addition of cumulative construction traffic. These roadway LOS performance standards shall be established by the applicable General Plan, Congestion Management Plan, or overseeing agency of the utilized roadway; and
- If required, provide for a coordinated park-and-ride system of bus service for workers at nearby solar energy project sites.

**Verification**: At least 30 days prior to site mobilization the project owner or contractor shall provide to the CPM a copy of the Construction Traffic Control Plan and implementation program documents for review and approval.

## FAA NOTICE OF ACTUAL CONSTRUCTION OR ALTERATION

**TRANS-2** The project owner shall file FAA Form 7460-2 Notice of Actual Construction or Alteration with the FAA Air Traffic Airspace Branch

(ASW-520) at least 10 days prior to the start of construction and within five days after the construction reaches its greatest height, or immediately following abandonment of the project. A copy of the filing and any related correspondence shall be forwarded to the CMP.

**Verification:** Within 10 days of the start of construction and, again, within five days after the construction reaches its greatest height, the project owner shall fill FAA Form 7460-2 with the appropriate FAA Air Traffic Airspace Branch and concurrently submit a copy of said completed form to the CPM. Copies of any additional correspondence related to this requirement shall be submitted to the CPM within 10 days of receipt.

## REPAIR OF DAMAGE TO PUBLIC ROADWAYS

**TRANS-3** Following completion of project construction, the project owner shall repair any damage to public roadways affected by construction activity along with the primary roadways identified in the traffic control plan for construction traffic to the road's pre-project construction condition. Prior to the start of construction, the project owner shall photograph, videotape, or digitally record images of the roadways that will be affected by all heavy construction traffic and utility line construction. The project owner shall provide the CPM, Riverside County, San Bernardino County, and/or Caltrans with a copy of the images for the roadway segments under its jurisdiction. Also prior to start of construction, the project owner shall notify the Counties and/or Caltrans about the schedule for project construction, providing copies of such to the CPM. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction-related activities associated with other projects.

**Verification**: At least 30 days prior to site mobilization, the project owner or contractor shall provide to the CPM a copy of all photograph, videotape, or digitally record images of the roadways. Within 30 days after completion of the project, the project owner shall meet with the CPM and affected jurisdictions to determine and receive approval for the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near-original condition as possible. Following completion of any regional road improvements, the project owner shall provide to the CPM a copy of all required permits and a letter from affected jurisdictions if work occurred within its jurisdictional public right-of-way stating its satisfaction with the road repairs.

## ROAD USE LIMITATIONS AND PERMITS

**TRANS-4** The project owner shall comply with Caltrans, Riverside County, San Bernardino County, and other relevant jurisdictions limitations on vehicle sizes, weights, and travel routes. In addition, the project

owner shall obtain all necessary transportation and encroachment permits from Caltrans, Riverside County, San Bernardino County, and other relevant jurisdictions for roadway use.

**Verification**: In the Monthly Compliance Reports, the project owner shall submit copies of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

**ROAD IMPROVEMENT STANDARDS AND SPECIFICATIONS**

**TRANS-5** The project owner shall comply with Riverside County Public Works requirements (Riverside County Ordinance 461) regarding road improvement standards and specifications, as they apply to the commercial driveway at the primary entrance to the facility. Internal access roads and secondary fire access road shall be constructed and maintained consistent with the requirements stipulated in the **Worker Safety and Fire Protection** section of this Decision.

**Verification**: In the Monthly Compliance Reports, the project owner shall submit copies of any permits and approvals received from Riverside County Public Works during that reporting period regarding compliance with Riverside County Ordinance 461 requirements for commercial driveway construction. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for the life of the project.

**HELIOSTAT POSITIONING PLAN**

**TRANS-6** The project owner shall prepare and implement a Heliostat Positioning Plan in coordination with the Avian Protection Plan specified in Condition of Certification **BIO-25** that would minimize potential for human health and safety hazards and bird injury or mortality from solar radiation exposure.

**Verification**: Within 90 days before RSEP commercial operation, the project owner shall submit a Heliostat Positioning Plan (HPP) to the CPM for review and approval. The project owner shall also submit the plan to potentially interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group for review and comment and forward any comments received to the CPM. The Heliostat Positioning Plan shall accomplish the following:

1. Identify the heliostat movements and positions (including reasonably possible malfunctions) that could result in potential exposure of observers at various locations including in aircraft, motorists, pedestrians and hikers in nearby wilderness areas to reflected solar radiation from heliostats;

2. Describe within the HPP how programmed heliostat operation would address potential human health and safety hazards at locations of observers, and would limit or avoid potential for harm to birds;
3. Prepare a monitoring plan that would: a) obtain field measurements in candela per meters squared and watts per meter squared to validate that the Heliostat Positioning Plan would avoid potential for human health and safety hazards consistent with the methodologies detailed in the 2010 Sandia Lab document presented by Clifford Ho, et al[1], including those referenced studies and materials within related to ocular damage, and b) provide requirements and procedures to document, investigate and resolve legitimate human health and safety hazard complaints prioritizing localized response (e.g., screening at location of complaint) regarding daytime intrusive light.
4. The monitoring plan should be made available to interested parties including CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project.

**POWER TOWER LUMINANCE MONITORING PLAN**

**TRANS-7** The project owner shall prepare a Power Tower LMVR Plan to provide procedures to conduct measurements and to document complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the RSEP solar receiver tower.

**Verification**: No later than 60 days prior to RSEP commercial operation, the project owner shall provide a Power Tower LMVR Plan applicable to RSEP for review and approval by the CPM. The plan shall specify procedures to document and investigate complaints regarding intrusive light, and report these to the CPM within 10 days of receiving a complaint.

The project owner shall measure the intensity of the luminance of light in candelas per meter squared and watts per meter squared reflected from the solar receiver tower according to the following:

A. Within 90 days following commercial operation;

B. If a major design change is implemented that results in an increase of the reflective luminance of the RSEP solar receiver tower; and

[1] C.K. Ho, C.M. Ghanbari, and R.B. Diver, 2010, Methodology to Assess Potential Glare Hazards from Concentrating Solar Power Plants: Analytical Models and Experimental Validation, ES2010-90053, in proceedings of the ASME 2010 4th International Conference on Energy Sustainability, Phoenix, AZ, May 17-22, 2010.

C. After receiving a complaint regarding a distraction associated with the central solar receiver from a location where previous measurements were not taken.

The Power Tower LMVR Plan shall include provisions for the following:

1. Provide measurement data within 30 days to potentially interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group for review and comment, and to the CPM for review and approval.

2. Measurement of luminance at the locations where any distraction effects have been reported and at the locations nearest the solar receiver tower from the four sides of the power plant boundary, and the nearest public road, which may be substituted for one of the sides of the solar receiver tower during the time of day when values would be highest;

3. Measurement of luminance using an illuminance meter, photometer, or similar device and reporting of data in photometric units (candelas per meter squared and watts per meter squared); the measurements are intended to provide a relative and quantifiable measure of luminance that can be associated with any observed and reported distraction effect from the solar receiver tower.

4. Provisions for documenting reported distraction and if the solar receiver tower is identified as a safety concern; the project owner shall consider reasonable localized mitigation measures that are technically and financially feasible. The localized mitigation measures may include signage for or screening of the affected area or other reasonable measures.

5. Post-mitigation verification; Within 30 days following the implementation of mitigation measures designed to reduce localized impact of the solar receiver tower, the project owner shall repeat the luminance measurements to demonstrate the effectiveness of mitigation measures and provide the new measurement data for review and comment by interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group, and for review and approval by the CPM.

## SOLAR RECEIVER TOWER OBSTRUCTION MARKING AND LIGHTING

**TRANS-8** The project owner shall install obstruction marking and lighting on the solar receiving tower, consistent with both the FAA and DOD requirements, as expressed in the following documents:

- FAA Advisory Circular 70/7460-1K, Change 2: Obstruction Marking and Lighting, 24-hour medium-strobes;
- Air Force Aviation Safety: Flight Safety Flash 09-01; and

- FAA Safety Alert for Operators (SAFO) 09007.

Temporary lighting shall be installed on the top of the structure once the construction height has exceeded 200 feet AGL, activated within five days of installation, and maintained in operation 24 hours a day, 7 days a week until construction is complete. Permanent lighting consistent with all requirements shall be installed and activated within five days of completion of construction. Lighting shall be operational 24 hours a day, 7 days a week, for the life of the project and until such time as the tower no longer exists at a height exceeding 200 feet AGL. Upgrades to the required lighting configurations, types, location, or duration shall be implemented consistent with any changes to FAA or DOD obstruction marking and lighting requirements.

**Verification:** At least 60 days prior to the start of construction, the project owner shall submit final design plans for the power plant solar receiving tower that depict the required air traffic obstruction marking and lighting to the CPM for approval.

Within five days of completion of the solar receiving tower to a height exceeding 200 feet AGL, the project owner shall install and activate temporary obstruction marking and lighting at the top of the structure and shall maintain temporary lighting at the top of said structure until construction of the tower is complete. The project owner shall inform the CPM in writing within 10 days of the time the lighting is first installed and activated.

Within five days of completion of the tower construction, the project owner shall install and activate permanent obstruction marking and lighting consistent with both FAA and DOD requirements and shall inform the CPM in writing within 10 days of installation and activation. The lighting shall be inspected and approved by the CPM (or designate inspector) within 30 days of activation.

## NOTIFICATIONS OF POTENTIAL HAZARDS TO AVIATION

**TRANS-9** The project owner shall initiate the following actions to ensure pilots are aware of the project location, maximum height, and potential hazards to aviation:

- Submit a letter to the FAA requesting a Notice to Airmen (NOTAM), Category D, be issued, advising pilots of the location of the RSEP and height of the solar receiving tower, and recommending that overflight of the project site below 1,500 feet AGL should be avoided. The letter should also request that the NOTAM be maintained in active status until all navigational charts and Airport Facilities Directories (AFDs) have been updated.

- Submit a letter to Mr. Anthony M. Parisi, PE –Department of Defense (DOD) Southwest Renewable Energy Work Group, requesting a military advisory be issued, advising military units and training offices using the low-level military training routes (MTRs) in the vicinity of the project site of the location of the RSEP and height of the solar receiving tower, and recommending that training exercises requiring overflight of the project site (both solar receiving tower and solar arrays) below 1,100 feet AGL during daylight hours should be avoided. The letter should also request that the advisory be maintained in active status until all navigational charts and training patterns have been updated.
- Submit a letter to the FAA requesting a power plant depiction symbol be placed at the RSEP site location on the Los Angeles Sectional Chart, with a notice to "avoid overflight below 1,500 feet AGL".
- Request the Los Angeles Enroute Traffic Control Center or Riverside Flight Service Station submit aerodrome remarks describing the location of the RSEP plant and advising against direct overflight of the solar receiving tower or solar heliostat arrays below 1,500 feet AGL to the:
  - FAA National Aeronautical Charting Office (Airport/Facility Directory, Southwest United States),
  - Jeppesen Sanderson Inc. (JeppGuide Airport Directory, Western Region), and
  - Airguide Publications (Flight Guide, Western States)

**Verification:** Within 30 days after the start of construction, the project owner shall submit draft language for the FAA and military letters of request to the CPM for review and approval. The project owner shall submit the letters of request to the appropriate agencies within 10 days of receiving CPM approval. If no response is received with 45 days (at least 60 days prior to the start of operations), the project owner shall follow up with a letter to the respective agencies to confirm implementation of the request. A copy of any resulting correspondence shall be submitted to the CPM with 10 days of receipt. The project owner shall contact the CPM with 72 hours if notified that any or all of the requested notices cannot be implemented. The project owner shall also advise the CPM at least 15 days prior to the start of operations if any of the notified agencies have failed to respond to these requests.

Within 10 days of installing and activating temporary obstruction marking and lighting at the top of the solar receiving tower, but no later than 60 days prior to the start of operations, the project owner shall submit the required letters of request to the FAA and DOD Southwest Renewable Energy Work Group, with

copies to the CPM. A copy of any resulting correspondence shall be submitted to the CPM with 10 days of receipt.

## AVOIDANCE OF RADIO INTERFERENCE

**TRANS-10** The project owner shall modify the project's equipment and radio frequency use as necessary to avoid interference with Department of Defense (DOD) military activities, in consultation with the DOD Southwest Renewable Energy Work Group. DOD recommendations, including substitution or modification of equipment or operations, shall be fully implemented prior to or in conjunction with the installation and operation of electronic systems that could result in frequency interference. Prior to the start of operations, the project owner shall provide, to the CPM, written confirmation from DOD that the frequency spectrum usage for the project, as modified, would not interfere with DOD activities.

**Verification:** At least 90 days prior to the scheduled installation of any equipment capable of producing frequencies that could interfere with DOD operations, the project operator shall consult directly with the DOD Southwest Renewable Energy Work Group and provide details of said equipment to the DOD staff and CPM for evaluation. The project owner shall provide complete information concerning any intended changes to previously approved equipment, project design, or operational procedures; and all correspondence between the project owner, facilities personnel, and DOD representatives to the CPM for review and approval at least 30 days prior to any scheduled equipment installation date or start of operations, whichever occurs first. DOD recommendations, including substitution or modification of equipment or operations, shall be fully implemented prior to or in conjunction with the installation of electronic systems that could result in frequency interference. Copies of any additional correspondence shall be provided to the CPM within 10 days of receipt. The project owner shall provide written verification from DOD to the CPM that the frequency spectrum usage, as modified, would not interfere with DOD activities and that all equipment, installation, and operational procedures comply with DOD requirements at least 10 days prior to the start of operations.

## C. SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This topic reviews pertinent demographic information within both a one-mile and six-mile radius of the Rice Solar Energy Project (RSEP) site and evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities and other public services, as well as the fiscal and physical capacities of local government to meet those needs. The public benefits of the project are also reviewed, including both the beneficial impacts on local finances from property and sales taxes as well as the potential adverse impacts upon public services. The evidence for this topic was undisputed. (10/29/10 RT 21, Exs. 1, § 5.10, 3, 4 [108-109], 48 [Socioeconomics]; 200, § 6.8, 204.)

In this part of the Decision we determine that the project will not result in a substantial impact under CEQA with respect to population and housing in that the project will not:

- Induce substantial population growth in a new area, either directly or indirectly.
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Nor will the project result in significant impacts to public services or recreations facilities because it will not:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives.
- Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

(CEQA Guidelines, Appendix G.)

As a result we find that the RSEP project will comply with all applicable laws, ordinances, regulations, and standards (LORS) (identified below in

**Socioeconomics Table 1**) and will not result in any significant environmental impacts.

**Socioeconomics Table 1**
**Laws, Ordinances, Regulations, and Standards (LORS)**

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| **California Education Code, Section 17620** | The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities. |
| **California Government Code, Sections 65996-65997** | Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities. |
| **California Revenue and Taxation Code Section 70-74.7** | Property taxes are not assessed on solar facilities. Assembly Bill 1451 extended the current property tax exclusion for new construction of solar energy systems to January 1, 2017. |

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Impacts of Construction and Operation Workforce

The construction phase is typically the focus of this stage of the Socioeconomics analysis because of the potential influx of workers into the area. Impacts are considered significant if a large influx of non-resident workers and dependents occurs in the project area, thus increasing demand for community resources.

The evidence indicates that the construction of the RSEP will result in the influx of temporary workers to the area during the 30-month construction period. The number of construction workers would range from a minimum of 29 in the first month to a maximum of 438 in the twelfth month of construction. The peak construction site workforce level is expected to occur between months 8 and 20. The average amount of peak construction staff between the peak months would be 349 persons. To evaluate the potential for impacts, it was assumed that up to 15 percent of the construction workers would seek lodging in the RSEP local area during the workweek. It should be noted that this is an average weekly

assumption and would be a temporary and fluctuating demand on local lodging. Based on this assumption, it is possible that during the peak construction month, up to 66 workers could seek local lodging. (Ex. 200, p. 6.8-7.)

The evidence establishes that there is more than adequate local availability of construction workforce within the Riverside/San Bernardino Metropolitan Statistical Area (MSA) to serve the direct RSEP construction labor need. Based on the evidence, construction workers within San Bernardino and Riverside counties regularly commute 2-hours each direction daily for work and it was concluded that the majority of construction workers will come from within this regional study area. (Ex. 200, p. 6.8-7.)

The proposed RSEP is expected to require a total of 47 permanent full-time employees. The evidence shows that there is more than an adequate local workforce for project operation regardless of the specialized nature of the proposed project. Therefore, due to the labor force located within the Riverside/San Bernardino counties and La Paz County, Arizona, the evidence concludes that the new operational employees required for the RSEP would be found locally. (Ex. 200, p. 6.8-7.)

We therefore find that the construction and operation workforce will not induce substantial growth or concentration of population and the project will not encourage workers to permanently move into the area. Consequently, the project would have no direct or indirect impact on substantial population growth in the area.

2. Impacts on Housing

According to the evidence, there are approximately 242 hotels/motels with 22,664 rooms in Riverside County to accommodate workers who may choose to commute to the project site on a work week basis. Nineteen hotels with a total of 878 rooms are located within approximately 40 miles of the RSEP. Fifty-seven hotels with a total of 8,285 rooms were identified in Indio, Palm Desert, Indian Wells, and Rancho Mirage. A total of 129 hotels with 7,541 rooms were identified in the communities of Desert Hot Springs, Palm Springs, and Needles. (Ex. 200, p. 6.8-8.)

Based on current vacancy rates for the City of Blythe, approximately 880 vacant housing units were available in 2008. The evidence indicates that approximately 101,930 local housing units were available in Riverside County. In addition,

there are about 6,600 housing units available in La Paz County. (Ex. 200, p. 6.8-8.)

Given the availability of short-term housing in the vicinity of RSEP, when compared to the maximum temporary peak demand of up to 66 workers potentially seeking local housing during the workweek, the evidence shows that construction of the proposed project would not temporarily induce substantial growth or concentration of population and construction of the RSEP would not encourage people to permanently relocate to the area due to the temporary construction employment. (Ex. 200, p. 6.8-8.)

The 2008 local study area vacancy rates for the cities of Blythe, CA; Riverside County, CA; and San Bernardino County, CA are 16.1, 13.2, and 11.6 percent, respectively. The vacancy rate for Parker, AZ in 2000 was 8 percent and La Paz County from 2005 to 2007 was 42.7 percent These vacancy rates indicate ample local housing is available should these operational employees choose to relocate to the local study area. Additionally, evidence shows that power plant workers may commute as much as two hours each direction from their communities rather than relocate. Therefore, some of these 47 workers that may relocate to the area may choose to live outside of the local study area or will choose to commute from their current residence within the regional study area. The evidence indicates that the regional study area provides a high number of available housing opportunities. The addition of up to 47 workers to either the local or regional study area would not permanently induce substantial growth or concentration of population in excess of available housing or forecasted growth. (Ex. 200, pp. 6.8-7 - 6.8-8.)

3. Impacts to Government Facilities

There is no evidence that the Project will adversely impact emergency medical services, police protection, schools, parks, or any other public facilities (i.e., utilities) because the workforce will be commuting rather than moving to the area.

a. Emergency Services

The project site is within the Riverside County Fire Department's jurisdiction. The closest fire stations are located in La Paz County, Arizona and San Bernardino County, California. There is a mutual aid agreement with these counties upon request and availability. The mutual aid agreement does not include first response; therefore, response from neighboring counties is not guaranteed.

The first responding fire station is Lake Tamarisk Fire Station (#49) located in Desert Center, California. The response time for the first responder is 30 minutes with one engine and three paramedic-trained personnel. Based on the nature of the emergency situation, Blythe Fire Station (#43) and Blythe Air Base Fire Station (#45) can be mobilized, with response times ranging from 45 to 60 minutes. Air ambulance services from Mercy Air Ambulance based in Banning, California can be mobilized with a response time of 45 minutes. Depending on availability, the PHI Air Medical based in Lake Havasu City, Arizona can be mobilized in 30 minutes. (Exs. 1, p. 5.10-13; 200, p. 6.8-9.)

Specifically regarding response times to the RSEP site, the evidence shows that Lake Tamarisk Fire Station (#49) response time would be one hour after dispatch and Blythe Air Base Fire Station (#45) would be approximately one hour and 15 minutes after dispatch. (Ex. 200, p. 6.8-9, 202, 207.)

The Applicant has proposed there would be on-site fire protection systems which are designed to protect personnel and limit property loss and plant downtime from fire or explosion. The proposed project would use the following emergency systems: steam turbine oil areas water spray system, fire hydrants/hose stations, and fire extinguishers. (Ex. 1, p. 2-46) And, according to the Applicant, if hazardous materials were involved in an incident at the RSEP site, Lake Tamarisk Fire Station (#49) would be the first responder on-site, requesting additional resources from the Riverside County Fire Department and the Riverside County Hazardous Materials Emergency Response (HazMat) Team. The program is a joint agency team staffed by the Riverside County Department of Environmental Health (RCDEH) Hazardous Materials Management Division (HMMD) and Riverside County Fire/California Department of Forestry. This team responds to incidents involving hazardous materials, 24 hours per day and seven days a week. (Ex. 1, p. 5.16-17.)

For emergency services, trauma patients would be transported to Desert Regional Medical Center, which is located in Palm Springs, California, approximately 127 miles from the project location. For burn injuries, patients would be transported to Arrowhead Regional Medical Center in Colton, California, which is 180 miles from the project location. The two hospitals are designated as Level II trauma centers and patients can be transported by air ambulance. La Paz Regional Hospital is located approximately 23 miles from the project site in Parker, Arizona. The La Paz Regional Hospital has an emergency room, but no trauma center. (Ex. 1, p. 5.10-14.)

As discussed in the **Project Description**, **Worker Safety and Fire**, and **Hazardous Materials** sections of this Decision, the RSEP would be designed to meet all applicable standards to reduce the risk of an accidental hazardous materials release and operate in a manner that complies with safety standards and practices to provide a safe workplace for plant personnel. In addition, a hazardous materials risk management plan would include all information necessary to allow fire-fighting and other emergency response agencies to plan and implement safe responses to fires, spills, and other emergencies.

We find that the Applicant's proposed safety procedures and employee training will minimize potential unsafe work conditions and the need for outside emergency medical response. Along with any necessary conditions of certification which is further analyzed in the Worker Safety and Fire Protection section of this document, we conclude that with implementation of Condition of Certifications **WORKER SAFETY-7**, **-9,** and **-10** the emergency medical services provided the by the above mentioned agencies will be adequate during construction and operation. The **Worker Safety and Fire** section of this Decision more fully discusses the project's impacts on Riverside County Fire Department's provision of emergency services. (Ex. 200, p. 6.8-10 – 6.8-11.)

We therefore find that with implementation of the **Worker Safety and Fire Protection** Conditions of Certification the project will not result in significant impacts to the provision of emergency medical services.

b. Law Enforcement

The RSEP is within the jurisdiction of the Riverside County Sheriff's Department. (RCSD). The RCSD serves several small cities and unincorporated areas within Riverside County. The Colorado River Station, nearest to the project location, provides service to the unincorporated area from Red Cloud Road on the west, to the Arizona state line on the east, and county line to county line on the north and south. The Colorado River Station is located approximately 41 miles from the project site with two deputies routinely onsite. The response time from the Colorado River Station to an emergency located at the project site would be approximately forty-five minutes if the deputies were not located at the station (Exs. 1, p. 5.10-13; 200, p. 6.8-11.)

Traffic-related incidents on state highways and roads are within the jurisdiction of the California Highway Patrol. The CHP office nearest to the RSEP is approximately 42 miles away. (Ex. 300, p. 4.8-8.)

The evidence indicates that power plants do not attract large numbers of people and therefore require little in the way of law enforcement services. (Ex. 200, p. 6.8-10.) Even though the site will not be publicly accessible, this Decision requires the project owner to implement safety and security measures (see, e.g., **Hazardous Materials Handling** Conditions of Certification **HAZ-4** and **HAZ-5**). Thus, we find that construction and operation of the project will not require new or physically altered law enforcement facilities or otherwise result in significant impacts to the provision of law enforcement services. Moreover, the RCSD has not expressed any concerns about a need for increased services during plant operations. (Exs. 1, p. 5.10-25; 200, p. 6.8-11.)

c. Schools

The project site is located within the boundaries of the Desert Center Unified School District. 10-11). The District includes one school (Eagle Mountain School), which has classes from kindergarten to eighth grade. Eagle Mountain School is located in Desert Center, which is located 62 miles from the proposed RSEP site. The current enrollment is fourteen students but the facility has capacity for 140 students.

Students in grades nine through 12 attend Palo Verde High School in the Palo Verde Unified School District. The school is located in Blythe, California, approximately 40 miles from the project site. (Exs. 1, p. 5.10-12; 200, p. 6.8-11.)

As discussed above, construction workers and their families are not expected to relocate to the project vicinity. (Ex. 200, p. 6.8-11.) Only 47 new full-time employees would be required for plant operation. Even though the Applicant anticipates hiring from within the region and no operation workers are expected to relocate, it is possible that all 47 new employees may relocate within the boundaries of the two school districts. The evidence establishes however, that such relocation would have little impact on the districts. More particularly, if all 47 relocate within the Desert Center Unified School District each with an average family size of 3.059 persons per household, this would result in the addition of approximately 50 children to the local schools. This would constitute approximately 5 percent increase in school enrollment for the two schools closest to the project.

Given the capacity for students in the two above-mentioned schools, we do not expect a significant adverse impact from the possible addition of 50 school children. Further, given the small number of students who potentially could

relocate to schools within the districts, we do not expect the construction or operation of the RSEP to have a significant adverse impact on schools (Exs. 1, p. 5.10-24; 200, pp. 6.8-11 – 6.8-12.)

d. Recreational Facilities

The Riverside County Regional Park and Open-Space District maintains various regional parks, nature and historic centers and recreation centers. Regional recreational facilities include thirteen parks, which are used for a variety of activities, such as picnicking, fishing, hiking/equestrian trails, barbecues, softball, soccer, overnight camping, and passive recreation. Additional amenities include; historic centers, museums, wildlife areas, and nature centers/reserves. (Ex. 200, p. 6.8-11.)

Given the above-discussed projections for a commuting labor force and possible relocation of four full-time employees, the project will require or contribute to the need for construction of new parks. Nor will it substantially increase the use of existing parks. We therefore find that the addition of the RSEP's construction and operation workforce will not have a significant adverse impact on parks and recreation.

e. Utilities

There is no evidence that the project workforce will lead to significant adverse demands on the adequate water, sanitary sewer, electricity, or natural gas supplies.

4. Public Benefits

The capital costs for the RSEP are approximately $750 to 850 million. Of this, construction materials and supplies are estimated at approximately $241.5 million, with the total construction payroll estimated at $102 million. (Ex. 200, p. 6.8-24.)

The total sales tax estimated during construction is expected to be approximately $21 million. California Revenue and Taxation Code Section 73 excludes the new construction of active solar energy systems from the definition of "new construction" for property tax reassessment purposes. California Assembly Bill (AB) 1451 extends the current property tax exclusion for new construction of solar energy systems to January 1, 2017. Upon expiration of AB 1451, Riverside

County will be responsible for assessing the RSEP's property value. Riverside County is in the process of developing a methodology to assess property values on renewable energy projects. (Ex. 200, p. 6.8-24.)

**Socioeconomics Table 2** below provides a summary of the RSEP's economic benefits.

**SOCIOECONOMICS Table 2**
**Rice Solar Energy Project Economic Benefits**
**(2009 Dollars)**

| | |
|---|---|
| **Fiscal Benefits** | |
| Estimated annual property taxes | Riverside County Assessor's Office would assess the non-solar project components once construction is completed. |
| State and local sale taxes: Construction | $20,092,800 ($16,905,000/Riverside County, $3,187,800/La Paz County) |
| State and local sale taxes: Operation | Approximately $35,000 |
| School Impact Fee | N/A |
| **Non-Fiscal Benefits** | |
| Total capital costs | $750 to 850 million |
| Construction Payroll | $102 million |
| **Annual Operations and Maintenance** | |
| Construction materials and supplies | $241.5 million ($193.2 million/Riverside County, $48.3 million/La Paz County) |
| Operations and maintenance supplies | $400,000 |
| **Direct, Indirect, and Induced** | |
| ***Estimated Direct*** | |
| Construction | 280 jobs (average for 30 months); 438 peak |
| Operation | 47 full-time positions |
| ***Estimated Indirect*** | |
| Construction Jobs | 954 |
| Construction Income | $38.04 million |
| Operation Jobs | 1 |
| Operation Income | $66,310 |
| ***Estimated Induced*** | |
| Construction Jobs | 352 |
| Construction Income | $14.15 million |
| Operation Jobs | 16 |
| Operation Income | $616,200 |
| Source: Ex. 200, p. 6.8-24 | |

The analysis of record characterizes the increase in employment and the increase in sales tax and generation of secondary jobs and income. The evidence further establishes that since the workforce will likely commute to the

project, neither the construction nor the operation workers will place an undue stress upon available housing. Similarly, the evidence shows that existing educational, police, and medical and emergency services will not be adversely impacted. (Ex. 200, pp. 6.8-8 - 6.8-12.)

5. Cumulative Impacts

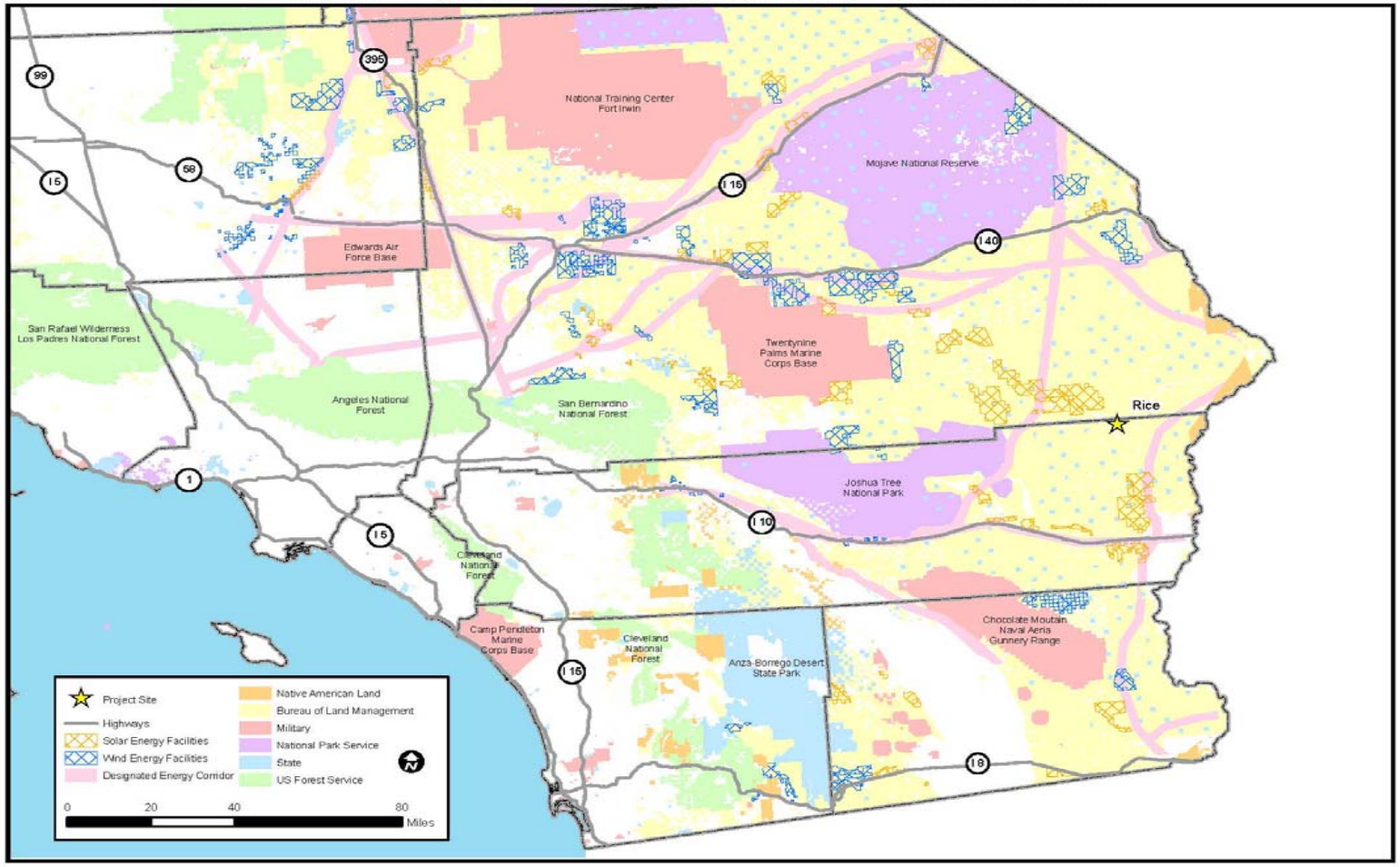
In a socioeconomic analysis, cumulative impacts could occur when more than one project in the same area has an overlapping construction schedule, thus creating a demand for workers that cannot be met locally. That increased demand for labor could result in an influx of non-local workers and their dependents, resulting in a severe strain on housing, schools, parks and recreation, law enforcement, and medical services.

The area of cumulative effect for this evaluation is Riverside and San Bernardino Counties in California. The geographic scope of our evaluation is based on the workforce boundaries of the cumulative development projects. It is possible that the geographic scope of cumulative effects will extend beyond Riverside and San Bernardino counties, with some workers potentially coming from adjacent counties beyond a two-hour commute radius of the proposed RSEP site. However, due to the similar nature of skill set required by the workforce during construction activities, as well as the number of proposed cumulative renewable energy projects, we do not anticipate that the geographic scope for cumulative impact analysis extends beyond the scope of the direct and indirect effects of the proposed action. (Ex. 200, p. 6.8-18.)

Reasonably Foreseeable Projects. Foreseeable development in the RSEP area includes projects in the immediate Rice Valley area as well as other large renewable projects in the California, Nevada, and Arizona regions. The projects in California are shown in **Socioeconomics Figures 1 and 2** below.

**CUMULATIVE IMPACTS - FIGURE 1**

Rice Solar Energy Project - Renewable Energy Applications in the California Desert District



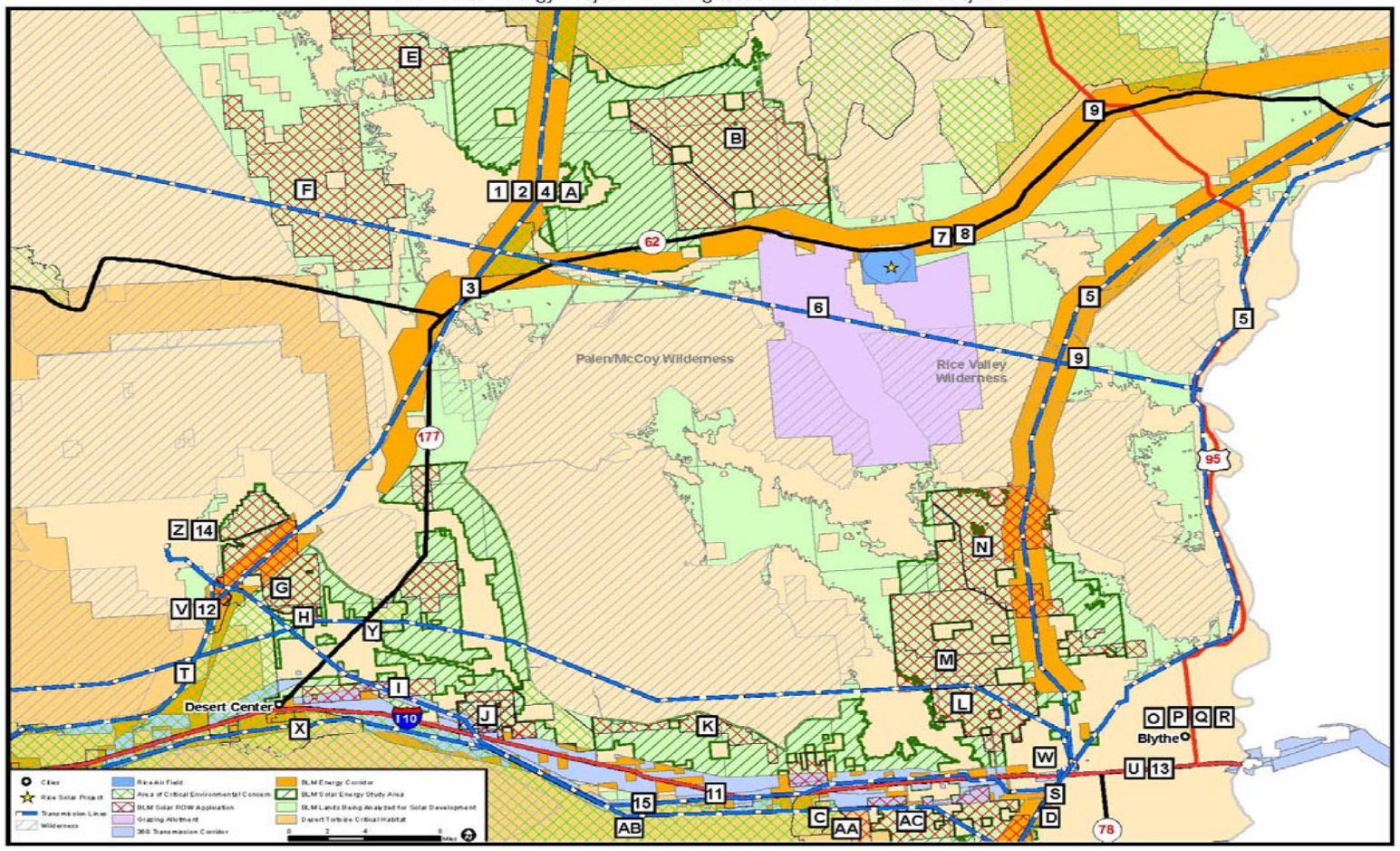

CUMULATIVE IMPACTS

**CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION**

SOURCE: California Energy Commission, Bureau of Land Management

**CUMULATIVE IMPACTS - FIGURE 2**

Rice Solar Energy Project - Existing and Future/Foreseeable Projects




CUMULATIVE IMPACTS

**CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION**

SOURCE: California Energy Commission, Bureau of Land Management

And, as shown by **Socioeconomics Table 3** below, there are a large number of projects occurring within the RSEP regional study area.

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| **Future Foreseeable Projects in the Rice Valley area within 15-20 miles of proposed project** | | | | | | |
| A | Three Colorado River Aqueduct Rehabilitation Projects | Iron Mountain Pump Plant, ~18 miles northwest of proposed Rice project | Metropolitan Water District of Southern California | Under Construction | N/A | Metropolitan Water District of Southern California proposes to repair the delivery line expansion joints at the Iron Mountain Pumping Plant, located approximately 18 miles northwest of the proposed project. The work is scheduled to be complete February of 2011. |
| B | Ward Valley, Leopold Companies, Inc | San Bernardino County, ~5 miles northwest of proposed Rice project in the Ward Valley | Leopold Companies, Inc | Plan of Development in to Needles BLM | 8,000 | 750 MW solar thermal power plant proposed in the Ward Valley approximately 5 miles northwest of the proposed Rice Solar Energy project. |
| **Additional Future Foreseeable Projects Outside 15-20 mile Boundary in Eastern Riverside County** | | | | | | |
| C | Colorado River Substation | 1.5 miles south of Interstate 10 and 4.75 miles east of Wileys Well Road | SCE | | 140 | Expand the not yet built 500 kV switchyard, previously approved as part of the DPV2 CPCN on approximately 45 acres of land, into a full 500/220 kV substation on approximately 90 acres of land. |
| D | Desert Quartzite | South of I-10, 8 miles southwest of Blythe | First Solar (previously OptiSolar) | POD in to BLM | 7,724 | 600 MW solar photovoltaic project located on 7,724 acres. Adjacent to DPV transmission line and SCE Colorado Substation. Approximately 27 AFY of water would be used during construction and 3.8 AFY during operation. |
| E | Killbeck | 26 miles northwest of proposed Rice project | Boulevard Associates | Plan of Development in to Needles BLM | 12,046 | 1,000 MW solar thermal power plant located 26 miles northwest of proposed Rice project. |
| F | Cadiz Lake | 26 miles west of proposed Rice project | Boulevard Associates | Plan of Development in to Needles BLM | 35,639 | 1,000 MW solar thermal power plant located 26 miles west of proposed Rice project. |

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| G | Desert Sunlight | 35 miles southwest of proposed Rice project | First Solar | Undergoing environmental review | 5,128 | 550 MW solar photovoltaic project located 6 miles north of Desert Center in eastern Riverside County. The project footprint is 4,410 acres and the BLM ROW application is for 5,128 acres. Project would tie into the SCE Red Bluff substation. Approximately water usage is 27 AFY of during construction and 3.8 AFY during operation. |
| H | EnXco 1 | 36 miles southwest of proposed Rice project | EnXco Development LLC | Plan of Development in to Palm Springs BLM | 1,327 | 300 MW solar thermal power plant located north of Desert Center. |
| I | Chuckwalla Solar I | 35 miles southwest of proposed Rice project, 1 mile north of Desert Center | Chuckwalla Solar I, LLC | Plan of Development submitted to BLM | 4,099 | 200 MW solar photovoltaic project on 4,099 acres of land. Project would be developed in several phases and would tap into an existing SCE 161-kV transmission line crossing the site. |
| J | Palen Solar Power Project | 33 miles southwest of proposed Rice project, 10 miles east of Desert Center | Solar Millennium LLC/Chevron Energy | Undergoing environmental review, construction to begin end of 2010. | 5,213 | 500 MW solar thermal trough project on 5,213 acres. Facility would consist of two 250 MW plants. Approximately 3,870 acres would be disturbed. Project would include interconnection to the SCE Red Bluff Substation. Project would use 300 AFY of water. |
| K | Genesis Solar Energy Project | 30 miles south of proposed Rice project, north of I-10, near Ford Dry Lake | NextEra (FPL) | Undergoing environmental review. Construction to begin at the end of 2010. | 4,535 | 250 MW solar thermal trough project located on 4,535 acres north of the Ford Dry Lake. Project includes six mile natural gas pipeline and a 5.5 mile gen-tie line to the Blythe Energy Project Center Transmission Line, and then travels east on shared transmission poles to the Colorado River Substation. |
| L | Blythe Solar Power Project | 26 miles southeast of proposed Rice project | Solar Millennium LLC/Chevron Energy | Undergoing environmental review | 9,481 | 1,000 MW solar trough facility on 9,481 acres |
| M | McCoy Project | 20 miles south of proposed Rice project | EnXco development, LLC | Plan of Development in to Palm Springs BLM | 20,608 | 250 MW solar thermal trough project. ROW in process for monitoring water well drilling. |
| N | Big Maria Vista Solar Project | 14 miles south of proposed Rice project | Bullfrog Green Energy | Plan of Development submitted to BLM | 22,717 | 500 MW solar photovoltaic project, BLM ROW application is for 22,717 acres of land. Project would be built in three phases and would require 6,000 gallons of water monthly. |

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| O | Four Commercial Projects | Blythe, CA | Various | Approved | N/A | Four commercial projects have been approved by the Blythe Planning Department including the Agate Road Boat & RV Storage, Riverway Ranch Specific Plan, Subway Restaurant and Motel, and Agate Senior Housing Development. |
| P | Intake Shell | Blythe, CA | | Under Construction | N/A | Reconstruction of a Shell facility located at Intake & Hobsonway. Demolition occurred in 2008, reconstruction planned for 2009-2010. |
| Q | Eighteen Residential Developments | Blythe, CA | Various | Approved/Under Construction | N/A | Fifteen residential development projects have been approved by the Blythe Planning Department including: Vista Palo Verde (83 Single Family Residential [SFR]), Van Weelden (184 SFR), Sonora South (43 SFR), Ranchette Estates (20 SFR), Irvine Assets (107 SFR), Chanslor Village (79 SFR), St. Joseph's Investments (69 SFR), Edgewater Lane (SFR), The Chanslor Place Phase IV (57 SFR), Cottonwood Meadows (103 Attached SFR), Palo Verde Oasis Phase IV (29 SFR).<br>Three residential development projects have been approved and are under construction including: The Chanslor Phase II & III (78 SFR), River Estate at Hidden Beaches, Mesa Bluffs Villas (26 Attached SFR). |
| R | Blythe PV Project | Blythe, CA | First Solar | CPUC approved project terms of a 20 year power purchase agreement for sale of 7.5 MW, Under construction in forth quarter, 2009 | 200 | 7.5 MW solar photovoltaic project located on 200 acres. Project was constructed by First Solar and sold to NRG Energy. |
| S | Blythe Energy Project Transmission Line | From the Blythe Energy Project (Blythe, CA) to Devers Substation | Blythe Energy, LLC | Under construction | N/A | Transmission Line Modifications including upgrades to Buck Substation, approximately 67.4 miles of new 230 kV transmission line between Buck Substation and Julian Hinds Substation, upgrades to the Julian Hinds Substation, installation of 6.7 miles of new 230 kV transmission line between Buck Substation and SCE's DPV 500 kV transmission line. |

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| T | Green Energy Express Transmission Line Project | 70-mile transmission line from the Eagle Mountain Substation to southern California | Green Energy Express LLC | September 9, 2009, Green Energy Express LLC filed a Petition for Declaratory Order requesting that FERC approve certain rate incentives for the project | N/A | 70-mile double-circuit 500 kV transmission line and new 500/230 kV substation from near the Eagle Mountain Substation (eastern Riverside County) to Southern California |
| U | Blythe Energy Project II | Blythe, CA. Near the Blythe Airport and I-10 | Blythe Energy, LLC | Approved December 2005 | 30 acres (located on Blythe Energy Project land) | 520 MW combined-cycle power plant located entirely within the Blythe Energy Project site boundary. Blythe Energy Project II will interconnect with the Buck Substation constructed by WAPA as part of the Blythe Energy Project. Project is designed on 30 acres of a 76-acre site. |
| V | Eagle Mountain Pumped Storage Project | Eagle Mountain iron ore mine, north of Desert Center | Eagle Crest Energy Company | License application filed with FERC in June 2009 | 1,524 | 1,300 MW pumped storage project designed to store off-peak energy to utilize during on-peak hours. The captured off-peak energy will be used to pump water to an upper reservoir where the energy will be stored. The water will then be released to a lower reservoir through an underground electrical generating facility where the stored energy will be released back into the Southwestern grid during "high demand peak" times, primarily weekdays. Estimated water use is 8,100 AFY for the first four-year start-up period and replacement water is 1,763 AFY thereafter. 1 |
| W | Blythe Airport Solar I Project | Blythe Airport, 31 miles south of proposed Rice Solar project | U.S. Solar | Application has been submitted to City of Blythe, City of Blythe approved the project in November, 2009 | 640 | 100 MW solar photovoltaic project located on 640 acres of Blythe airport land. |
| X | Red Bluff Substation | South of Desert Center | SCE | | N/A | Proposed 230/500 kV Substation near Desert Center. Planned to interconnect renewable projects near Desert Center with the Devers-Palo Verde transmission line. |
| Y | Chuckwalla Valley Raceway | Desert Center Airport (no longer a functioning airport) | Developer Matt Johnson | Under construction, track expected to be open in mid 2010 | 400 | Proposed 500-mile race track located on 400 acres of land that used to belong to Riverside County and was used as the Desert Center airport. |

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| Z | Eagle Mountain Landfill Project | Eagle Mountain, North of Desert Center | Mine Reclamation Corporation and Kaiser Eagle Mountain, Inc. | U.S. Court of Appeals for the Ninth Circuit issued its regarding the EIS for the project in 11/09 and ruled that the land exchange for the project was not properly approved by the administrative agency. Kaiser's Mine and Reclamation is considering all available options. | ~ 3,500 | The project proposed to develop the project on a portion of the Kaiser Eagle Mountain Mine in Riverside County, California. The proposed project comprises a Class III nonhazardous municipal solid waste landfill and the renovation and repopulation of Eagle Mountain Townsite. The proposal by the proponent includes a land exchange and application for rights-of-way with the Bureau of Land Management and a Specific Plan, General Plan Amendment, Change of Zone, Development Agreement, Revised Permit to Reclamation Plan, and Tentative Tract Map with the County. The Eagle Mountain landfill project is proposed to accept up to 20,000 tons of non-hazardous solid waste per day for 50 years. |
| AA | Wiley Well Communicatio n Tower (part of the Public Safety Enterprise Communicatio n System) | East of Wileys Well Road, just south of I-10 | Riverside County | Final EIR for the Public Safety Enterprise Communication System published in August 2008. | N/A | The Public Safety Enterprise Communication project is the expansion of the County of Riverside's fire and law enforcement agencies approximately 20 communication sites to provide voice and data transmission capabilities to assigned personnel in the field. |
| AB | Desert Southwest Transmission Line | 118 miles primarily parallel to DPV | Imperial Irrigation District | Final EIR prepared 2005. Approved by the BLM in 2006. | N/A | New, approximately 118-mile 500 kV transmission line from a new substation/switching station near the Blythe Energy Project to the existing Devers Substation located approximately 10 miles north of Palm Springs, California. |
| AC | Mule Mountain Solar Project | South of I-10, approximately 4 miles west of Blythe | Bullfrog Green Energy | Plan of Development in to Palm Springs BLM | 2,684 | 500 MW solar concentrating photovoltaic project located on 2,684 acres. Considering interconnection with proposed SCE Colorado Substation. Approximately 6,000 gallons of water would be required monthly. |

Socioeconomics Table 3
Future Foreseeable Projects in the Rice Valley area and Eastern Riverside County

| ID # | Project Name; Agency ID | Location | Ownership | Status | Acres | Project Description |
|---|---|---|---|---|---|---|
| Additional Projects Outside Cumulative Figure Boundaries | | | | | | |
| | Proposed National Monument (former Catellus Lands) | Between Joshua Tree National Park and Mojave National Preserve | | In December 2009, Senator Feinstein introduced bill S.2921 that would designate two new national monuments including the Mojave Trails National Monument. | 941,000 acres | The proposed Mojave Trails National Monument would protect approximately 941,000 acres of federal land, including approximately 266,000 acres of the former railroad lands along historic Route 66. The BLM would be given the authority to conserve the monument lands and also to maintain existing recreational uses, including hunting, vehicular travel on open roads and trails, camping, horseback riding and rock hounding. |
| | BLM Renewable Energy Study Areas | Northwest of Rice Solar project in San Bernardino County and along the I-10 corridor | BLM | Proposed | N/A | The DOE and BLM identified 24 tracts of land as Solar Energy Study Areas in the BLM and DOE Solar PEIS. These areas have been identified for in-depth study of solar development and may be found appropriate for designation as solar energy zones in the future. |
| | Solar Energy projects along Arizona Border | Approximately 15 miles east of the CA/ AZ border along I-10 corridor | Various | Applications filed in to Arizona BLM field offices, application status listed as pending. | N/A | Five solar trough and solar power tower projects have been proposed along the I-10 corridor approximately 15 miles east of the CA/AZ border. The projects have been proposed on BLM administered-land in the Yuma and Kingman Field Offices and have requested use of approximately 75,000 acres. |
| | Paradise Valley "New Town" Development | Approximately 30 miles west of Desert Center (7 miles east of the city of Coachella) | Glorious Land Company | Notice of Preparation of an EIR published in December of 2005. Still under environmental review. | 6,397 | Company proposed to develop a planned community as an international resort destination with residential, recreational, commercial, and institutional uses and facilities. The project is planned as a self-contained community with all public and quasi-public services provided. The project is located outside the Coachella Valley Water District (CVWD) boundaries and the applicant has entered into an agreement with the CVWD to manage artificial recharge of the Shaver's Valley groundwater. The proponent has purchased a firm water supply from Rosedale-Rio Bravo Water District in Kern County. In-kind water will be transferred to the MWD which will release water from the Colorado River Aqueduct to a 38 acre percolation pond on the project site. The MWD will deliver approximately 10,000 AFY to the percolation pond and over the long term, no net loss of groundwater in storage is anticipated. |

1. Water usage for the Eagle Mountain Pumped Storage Project was based on the information provided to FERC by the Eagle Crest Energy Company in the Responses to Deficiency of License Application and Additional Information Request dated October 26, 2009.

In light of the above-identified cumulative projects, Staff estimated the cumulative project construction needs by trade. (See, Ex. 200, p. 6.8-21 [Socioeconomics and Environmental Justice Table 5].) According to the evidence, all cumulative projects identified in the table are expected to draw on the large regional construction workforce in and Riverside/San Bernardino/Ontario MSA and, the MSA offers sufficient regional labor by skill set to staff all projects from within the regional study area.

The evidence further indicates that cumulative development of these projects in a worst-case scenario of overlapping peak period months could result in the influx of 1,777 construction workers seeking local lodging within the area as a result of the large renewable energy projects being constructed. However, this scenario is unlikely due to construction scheduling and peak months and the likelihood of workers doubling up in local lodging situations. The 1,777 construction workers seeking local lodging could impact Blythe, Twenty-nine Palms, California and Parker, Arizona, motel accommodations. There are approximately 242 hotels/motels with 22,664 rooms in Riverside County to accommodate workers who may choose to commute to the project site on a work-week basis. (Ex. 200, p. 6.8-19.)

Based on the availability of local housing, we assume that ample temporary short-term housing is available for these workers from a cumulative perspective. Therefore, based on the evidence, cumulative project construction within the RSEP local study area would not significantly impact the population projections or require the need for new or expanded housing within the local study area.

Furthermore, all workers would come from within the regional study area, with up to 15 percent of these workers potentially seeking short-term temporary housing during the workweek locally. Cumulative construction activities would not require the need for new or expanded public services (police, schools, recreation, hospitals) serving the local study area, as no permanent population increase would occur. Therefore, construction of the RSEP would not contribute to adverse cumulative socioeconomic impacts. (Ex. 200, pp. 6.8-19 - 6.8-20.)

**Socioeconomics Table 4** shows the projected cumulative project operational employment needs for electric generating facilities.

| SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE Table 4<br>Cumulative Project Operational Employment Needs | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Trade | BSPP Total # of Workers for Project | PSPP Total # of Workers for Project | GSEP Total # of Workers for Project | RSEP Total # of Workers for Project | DSPV Total # of Workers for Project | CSP Total # of Workers for Project | TOTAL | Riverside/ San Bernardino / | Riverside/ San Bernardino / Ontario MSA 2016 |
| Plant and System Operators | -- | -- | -- | -- | -- | | -- | 2,030 | 2,380 |
| Power Plant Operators | -- | -- | -- | -- | -- | | -- | 310 | 370 |
| Total | 221 | 134 | 50 | 47 | 15 | 180 | 647 | 2,340 | 2,750 |
| Local Housing Need1 | 111 | 67 | 25 | 24 | 4 | 90 | 321 | -- | -- |
| | 1 Assumes 50% of operational employees will permanently relocate to the cumulative project area.<br>Source: Solar Millennium 2009a, b, c, d, and e. | | | | | | | | |

Based on the most recently published vacancy rates for the local study area, adequate permanent housing units are available to these operational employees who may choose to relocate locally to proposed cumulative development projects. Therefore, the RSEP is not expected to contribute cumulatively to a required need for new housing in the area. .

The evidence presented on school impacts indicates that any new cumulative demand on schools by permanent relocations to the local study area would be met through the payment of property taxes, which contribute to local public safety, school, and recreational facility funding. Because hospitals are private supply and demand based facilities, we reasonably infer that the cumulative increase in local population can be adequately served by local study area emergency medical facilities. Based on these conclusions, we find that operation of the proposed RSEP will not contribute cumulatively to an increase in the local population or require the need for new or expanded law enforcement, school, recreational, or emergency medical facilities or staff levels within the RSEP regional or local study areas. (Ex. 200, p. 6.8-22.)

6. Environmental Justice

Section 65040.12 (e) of the Government Code defines “environmental justice” to mean “fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” In addition, federal guidelines encourage

governmental agencies to incorporate environmental justice principles in the environmental review of this project.

The steps recommended by these guidance documents to assure that environmental justice concerns are addressed include: (1) outreach and involvement; (2) a demographic screening to determine the existence of a minority or low-income population; and (3) if warranted, a detailed examination of the distribution of impacts on segments of the population.

The evidence of record contains a demographic screening conducted in accordance with information contained in two documents: *Environmental Justice: Guidance Under the National Environmental Policy Act* (Council on Environmental Quality, 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (National Council on Environmental Quality, 1998). (Ex. 200, p. 6.8-2.) The purpose of the demographic screening is to determine whether there exists a minority or low-income population within the potentially affected area.

Minority populations exist, for purposes of an environmental justice analysis, where either:

- The minority population of the affected area is greater than 50 percent of the affected area's general population; or
- The minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- One or more U.S. Census blocks in the affected area have a minority population greater than 50 percent.

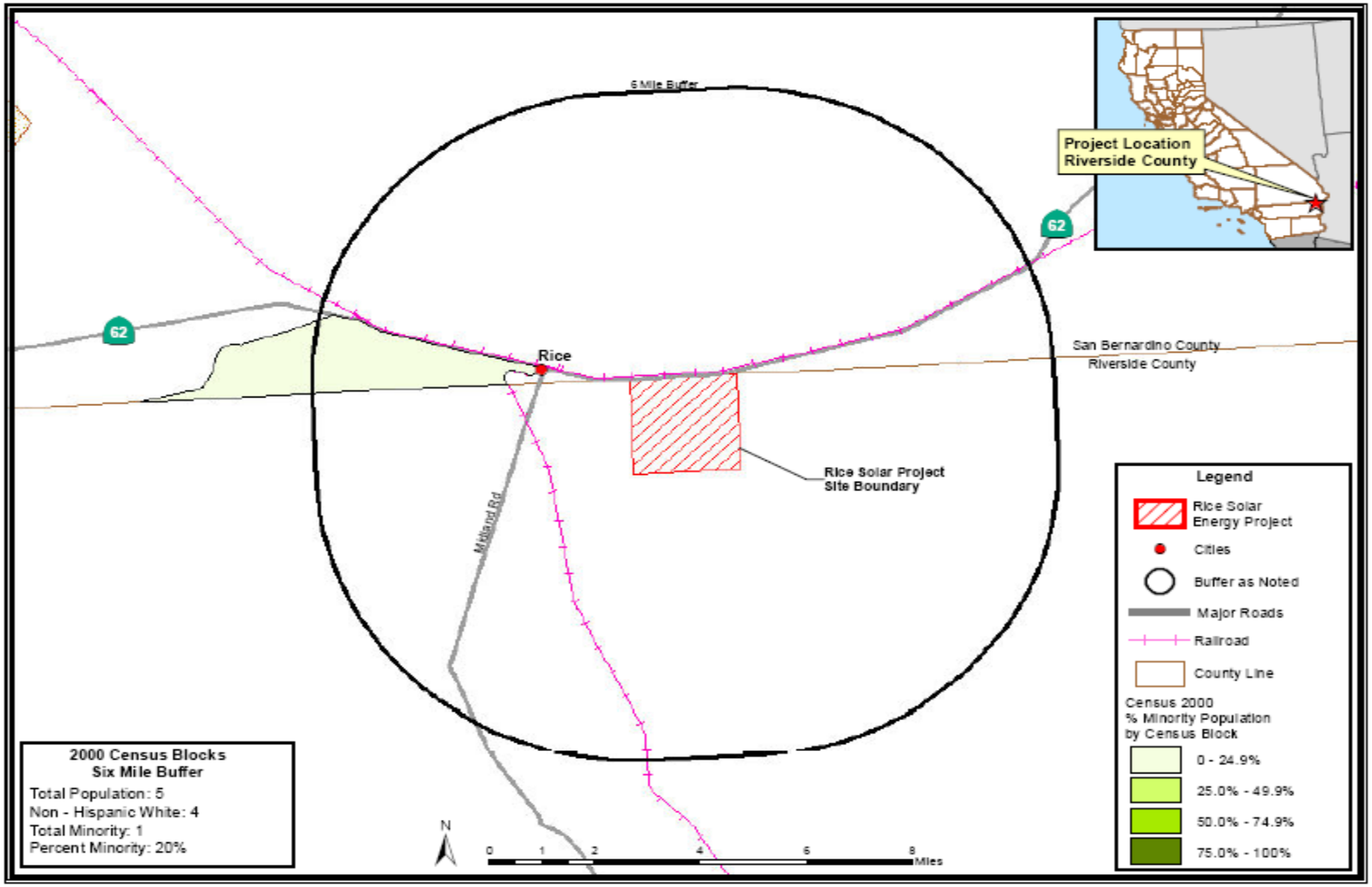
Minority individuals, for present purposes, are those who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. The below poverty-level-population was also based on the 2000 U.S. Census.

The evidence shows that Census 2000 information indicates a minority population by census block of 20 percent within a six-mile radius of the RSEP. The agencies normally identify below-poverty-level population within the six-mile radius using Year 2000 U.S. Census block group data. For the RSEP, the total population within the six-mile radius is five persons and the total minority population is one person or about 20 percent of the total population. (Ex. 200, p. 6.8-3.)

**Socioeconomics Figure 3** below shows the location of the minority populations within six-miles of the project site.

**SOCIOECONOMICS - FIGURE 3**

Rice Solar Energy Project - Census 2000 Minority Population by Census Block - Six Mile Radius



With respect to the below-poverty-level populations, the evidence shows that the poverty data would be inaccurate for the six-mile radius because the census block groups are so large that they include persons well beyond the six-mile radius and therefore, would misrepresent the poverty data within the six-mile radius. (Ex. 200, p. 6.8-3.)

Thus, based on the evidence, we find that the project will not have an adverse impact on minority or poverty level populations and no mitigation is required.

7. Compliance with LORS

As shown in **Socioeconomics Table 1** above, the only applicable LORS pertain to the possible imposition of school impact fees. The California Government Code asserts that only the above-discussed school districts have authority to impose school facilities fees. Staff explained that Desert Center School District is located in a closed mining area and has a declining enrollment with a corresponding declining total revenue limit. The school in this district receives guaranteed funding from local property tax revenue. Thus, the project will not be required to pay school impact fees to Desert Center School District. Nor will it pay fees to the Palo Verde Unified School district, because the RSEP is not within this district's boundaries. (Ex. 204.)]

## FINDINGS OF FACT

Based on the evidence, we find as follows:

1. The RSEP will draw primarily upon the local labor force from Riverside and San Bernardino counties for the construction and the operation workforce.
2. The project will not cause an influx of a significant number of construction or operation workers into the local area.
3. The project is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.
4. The project will have a construction payroll of approximately $102 million.
5. RSEP will result in local direct, indirect, and induced benefits – both fiscal and non-fiscal.
6. The project will likely result in generation of secondary jobs and income and increased revenue from sales taxes due to construction activities.

7. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.
8. The analysis of record has been performed in conformity with Federal environmental justice guidelines.
9. Minority populations exist within a six mile radius of the site; however, the RSEP will not cause or contribute to disproportionate impacts upon minority or low income groups
10. Siting of the RSEP, and the analysis thereof, are consistent with the principles underlying environmental justice.
11. The RSEP's contribution to cumulative impacts, in conjunction with the impacts from other reasonably foreseeable projects, is adequately addressed in the evidence of record and in appropriate portions of this Decision.

## CONCLUSIONS OF LAW

1. We therefore conclude that the project construction and operation activities will create some degree of benefit to the local area and will conform to principles of environmental justice.
2. No Conditions of Certification are required for this topic because no significant adverse socioeconomics impacts will occur as a result of construction and operation of the RSEP.

## D. NOISE AND VIBRATION

The construction and operation of any power plant will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting or pile driving; these activities have the potential to cause structural damage and annoyance. (Ex. 200, p. 6.6-9.) The evidence of record is summarized below and evaluates whether noise and vibration produced during Rice Solar Energy Project (RSEP) construction and operation will be mitigated sufficiently to comply with applicable laws, ordinances, regulations, and standards (LORS) and avoid the creation of significant adverse impacts. The evidence was undisputed. (10/29/10 RT 21; Exs. 1, ES, § 5.7, 3; 200, § 6.6.)

Federal and state laws regulate worker noise exposure. (Ex. 200, p. 6.6-3.) The Noise Element of Riverside County's General Plan and the County's Noise Ordinance set property line sound level limits for sensitive receptors. For residential land uses, the Noise Element of the General Plan categorizes noise levels of up to a 60 dBA day/night average (Ldn) or CNEL as "normally acceptable" and up to 70 dBA Ldn or CNEL as "conditionally acceptable." Riverside County has also adopted restrictions generally affecting construction noise sources. These restrict loud noises within one-quarter mile of an occupied residence between the hours of 6 p.m. and 6 a.m. (Ex. 200, p. 6.6-5.)

CEQA Guidelines set forth characteristics of noise impacts that may indicate potentially significant effects from project-related noise, such as "a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project." (Cal. Code Regs., tit. 14, § 15000 et seq., Appen. G, Section XI.) In accordance with this standard, the Energy Commission uses the significance threshold of 5 dBA when project-related noise emissions exceed existing ambient noise levels at the nearest sensitive receptor. We believe that an increase in background noise levels of up to 5 dBA in a residential setting is insignificant and that an increase of more than 10 dBA is clearly significant. An increase of between 5 dBA and 10 dBA may be considered adverse, but could be either significant or insignificant depending upon the particular circumstances of a given case. (Ex. 200, p. 6.6-2.)

Factors considered in determining the significance of an adverse impact as characterized above include: (1) the resulting noise level; (2) the duration and

frequency of the noise; (3) the number of people affected; (4) the land use designation of the affected receptor sites and, (5) public concern or controversy expressed at workshops, at hearings, or in correspondence. Noise due to construction activities is usually considered insignificant in terms of CEQA compliance if the use of heavy equipment and noisy activities is limited to day-time hours, and industry-standard abatement measures are employed. (Ex. 200, p. 6.6-6.) NEPA provides no specific standards or thresholds for noise and vibration, but instead, it defers to state/local requirements.

The California Office of Planning and Research has published guidelines for preparing noise elements in general plans. These guidelines include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed below in **Noise Table 1**. Following the guidelines table is Table **NOISE A2**, which compares and quantifies common noises in the community in terms of their decibels (dBA) levels.

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## Noise Table 1
## Land Use Compatibility for Community Noise Environment

| LAND USE CATEGORY | COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | |
| Residential - Low Density Single Family, Duplex, Mobile Home | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Residential - Multi-Family | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Transient Lodging – Motel, Hotel | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Schools, Libraries, Churches, Hospitals, Nursing Homes | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Auditorium, Concert Hall, Amphitheaters | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Sports Arena, Outdoor Spectator Sports | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Playgrounds, Neighborhood Parks | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

## Noise Table 1
## Land Use Compatibility for Community Noise Environment, Continuted

| LAND USE CATEGORY | COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Office Buildings, Business Commercial and Professional | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Industrial, Manufacturing, Utilities, Agriculture | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| | | |
|---|---|---|
| | **Normally Acceptable** | Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. |
| | **Conditionally Acceptable** | New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. |
| | **Normally Unacceptable** | New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design. |
| | **Clearly Unacceptable** | New construction or development generally should not be undertaken. |

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

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## NOISE Table A2

## Typical Environmental and Industry Sound Levels

| Noise Source (at distance) | A-Weighted Sound Level in Decibels (dBA) | Noise Environment | Subjective Impression |
|---|---|---|---|
| Civil Defense Siren (100') | 140-130 | | Pain Threshold |
| Jet Takeoff (200') | 120 | | Very Loud |
| Very Loud Music | 110 | Rock Music Concert | |
| Pile Driver (50') | 100 | | |
| Ambulance Siren (100') | 90 | Boiler Room | |
| Freight Cars (50') | 85 | | |
| Pneumatic Drill (50') | 80 | Printing Press<br>Kitchen with Garbage Disposal Running | Loud |
| Freeway (100') | 70 | | Moderately Loud |
| Vacuum Cleaner (100') | 60 | Data Processing Center<br>Department Store/Office | |
| Light Traffic (100') | 50 | Private Business Office | |
| Large Transformer (200') | 40 | | Quiet |
| Soft Whisper (5') | 30 | Quiet Bedroom | |
| | 20 | Recording Studio | |
| | 10 | | Threshold of Hearing |

Source: Handbook of Noise Measurement, Arnold P.G. Peterson, 1980; Exhibit 200, p 6.6-22.

## SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The Rice Solar Power Project (RSEP) will be constructed in a remote, largely undeveloped area of Riverside County, near the junction of SR 62 and Blythe-Midland Road. The ambient noise regime in the project vicinity consists of aircraft traffic, highway traffic, wind, and wildlife. The nearest sensitive receptors are occupied residences located approximately 15 miles northeast at the rural crossroads community of Vidal Junction, California. The nearest town is Parker, Arizona (population 3,181) approximately 32 miles east. A residential settlement is located at the Metropolitan Water District of Southern California's Iron Mountain Pumping Plant, approximately 17 miles west. (Ex. 200, p. 6.6-6.)

Because there are no noise-sensitive receptors located within fifteen miles of the project site, and considering the fact that the ambient noise regime in the surrounding area includes highway traffic and aircraft traffic, it is extremely unlikely that the existing, ambient noise at the nearest sensitive receptor would be so low that attenuated noise from the RSEP would cause a 5 dBA increase in the ambient noise level. Thus, experts for both the Staff and the Applicant agreed that monitoring of existing ambient noise is not required. This view was not contested by any party. (Ex. 200, p. 6.6-7.)

2. Construction Impacts and Monitoring

Construction of RSEP is expected to occur over a period of approximately 30 months. (Ex. 1, p. ES-6.) Construction of an industrial facility such as a power plant is typically noisier than the levels allowed under usual noise ordinances. However, in order to allow the construction of new facilities, construction noise during certain hours of the day is commonly exempt from enforcement by local ordinances. In the case of the RSEP, however, the Applicant predicts that, due to the great distance of the project from the nearest sensitive receptors, there will be no noise impacts due to project construction. (Ex. 1, § 5.7.3.2, Table 5.7-4.) For its own analysis, Staff assumed an average construction noise of 89 dBA Leq at 50 feet from the noise center which is the upper range of noise levels for construction equipment. Accordingly, project construction noise would attenuate to 25 dBA at the nearest noise receptors, 15 miles away. (Ex. 200, p. 6.6-7.) We find this level is not significant.

Furthermore, there are no LORS that limit construction noise levels for the project. The Riverside County Code restricts noisy construction work to daytime hours when a project is within one-quarter mile of a noise-sensitive receptor. Given the distance between the proposed project site and the nearest noise sensitive receptor, this code limitation does not apply. No limit on construction hours needs to be enforced for the RSEP project to mitigate for noise impacts.

In the unlikely event that actual construction noise should annoy the nearest residents, we have adopted Conditions of Certification **NOISE-1** and **NOISE-2**, which would establish a public notification process to inform the nearest residents of the project construction and operation, and a Noise Complaint Process that would require the Applicant to resolve any complaints regarding project noise.

Turtle Mountains Wilderness Area is the nearest wilderness area to the RSEP. It is located north of the project site approximately 2.3 miles from the project's most-northern fenceline. The Applicant predicts an average construction noise level of 89 dBA Leq at 50 feet. This noise level would attenuate to roughly 41 dBA Leq at the nearest edge of the wilderness area, a level that does not typically cause annoyance. (*Id*., p. 6.6-8.) Given that construction will be temporary and human activities in the preserve are for limited, short-term durations, we find that the construction impact on the wilderness area will be less than significant.

Usually the loudest noise during construction involving a steam turbine is created by the steam blows. The process is a flushing action, directing steam to the atmosphere for the purpose of cleaning out any debris in the steam system which may have accumulated during construction. A series of short steam blows, lasting two or three minutes each, is performed several times daily over a period of two or three weeks. At the end of this procedure, the steam line is connected to the steam turbine, which is then ready for operation. These steam blows can produce noise as loud as 129 dBA at a distance of 50 feet. Based only on an attenuation calculation due to distance, this would attenuate down to approximately 65 dBA at the receptors fifteen miles from the project site[1]. Based on the facts that (1) the receptors are located fifteen miles away, (2) the noise would be temporary (two to three weeks), and (3) would last only two to three minutes at a time, we determine that steam blows would not cause a significant

[1] This predicted level does not account for additional attenuation due to air and ground absorption, and topography; attenuation due to these factors can be considerable over the long distance of fifteen miles.

impact. In the unlikely event that steam blow noise bothered nearby residents, Conditions of Certification **NOISE-1** and **NOISE-2**, will provide a Noise Complaint Process that would require the applicant to resolve any complaints regarding project noise. (Ex. 200, p. 6.6-8.)

Other potential noise impacts could involve pile driving or vibration. However, due to the distance from the construction site to the nearest receptors, any impacts from these construction noises will not be significant. (*Id*., p. 6.6-9.) Construction workers will be protected from noise impacts through the noise control programmed required in Condition of Certification **NOISE-3**.

3. Operation Impacts and Mitigation

The operational noise from RSEP would be unnoticeable to residents of Vidal Junction the nearest community to the project. The maximum facility fenceline noise level of 49 dBA will occur at the south fenceline of the RSEP facility. The evidence shows this noise will attenuate to 4 dBA at Vidal Junction. Operational noise will not impact the nearest residents to the project who are 15 miles away. (Ex.1, § 5.7.3.3.3; Table 5.7-8.) The nearest boundary of the wilderness area is approximately 2.3 miles from the proposed project's most-northern fenceline. Operational noise at the project would likely result in roughly 28 dBA $L_{eq}$ at the nearest edge of the wilderness area. A noise level of 28 dBA does not cause annoyance and is well within the acceptable LORS limit. (*Id*., p. 6.6-10.)

The RSEP would operate during daytime hours, when solar insolation is available. There are no receptors within 15 miles of the project and operational sounds from the project will attenuate to 4 dBA when they reach the nearest receptors. Therefore, operational noise from the project will have no impact on human receptors. If, however, problems arise, Condition of Certification **NOISE-1** and **NOISE-2** provide for notification and resolution of any problems.

4. Cumulative Impacts

A cumulative impacts refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, 15355.) There are no noise-sensitive receptors within 15 miles of the project site. Nor are there any identified projects under active development that would generate significant noise within 15 miles of the project site. (Exs. 1, p. 5.7-13, 200, p. 6.6-15.) Therefore, noise or vibrations generated by the RSEP will be

attenuated by distance to the point of precluding the possibility for cumulative noise impacts from the project.

## FINDINGS OF FACT

Based on the evidence of record, we make the following findings:

1. A change in level of at least 5 dB is required before any noticeable change in community response to noise would be expected.

2. The evidence establishes that an increase in background noise levels up to 5 dBA in a residential setting is insignificant; an increase of more than 10 dBA is considered significant

3. The nearest sensitive noise receptors to the RSEP are individual residences located approximately 15 miles from the project's border.

4. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to day-time hours, and providing a notice and complaint process to the public.

5. Aggregate construction noise would attenuate to less than 25 dBA at a distance of 15 miles from the project site, a noise level which is generally considered to be very quiet. Given the lack of receptors in the vicinity of the project site, noise impacts due to construction activity will be insignificant.

6. The evidence establishes that construction noise at the nearest edge of the Turtle Mountains Wilderness Area would result in roughly 41 dBA Leq, a level that does not typically cause annoyance. Given that construction on the project will be temporary and human activities in the wilderness area are for limited, short-term durations, we find that the construction impacts on the wilderness area would be less than significant.

7. In the unlikely event that construction noise should annoy residents nearest the RSEP, Conditions of Certification **NOISE-1** and **NOISE-2**, will provide a public notification process to alert nearest residents of the project construction and operation, and a Noise Complaint Process that will require the Applicant to resolve any complaints regarding project noise.

8. Condition of Certification **NOISE-3** will require that, prior to construction, the project owner must gain approval of a noise control program to reduce employee exposure to high noise levels during construction in order to comply with applicable OSHA and Cal/OSHA standards.

9. Operation of the Rice Solar Energy Project will not significantly increase noise levels above existing ambient levels at the nearest receptors, who are located 15 miles from the project.

10. The Rice Project will not create ground or air borne vibrations which will cause significant off-site impacts.

11. Implementation of the Conditions of Certification below ensure that project-related noise emissions will not cause significant adverse impacts to the closest noise receptors.

12. The noise from the Rice Project will not create a significant adverse cumulative impact.

13. The record contains analysis of a reasonable range of alternatives and their contribution to noise impacts. These are the impacts of the Reduced Acreage Alternative, the North of Desert Center Alternative, the SR 62/Rice Valley Road Generation Tie Line Alternative, and a No Project Alternative.

14. None of the Alternatives mentioned above would result in reducing significant construction or operational noise impacts of the proposed project upon sensitive receptors.

15. Implementation of any of the Alternatives mentioned above is not necessary or preferable as a means of reducing project related noise impacts to below a level of significance.

## CONCLUSIONS OF LAW

1. The Commission concludes that implementation of the following Conditions of Certification ensure that the Rice Solar Power Project will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision.

2. The project will not cause significant indirect, direct, or cumulative adverse noise impacts.

## CONDITIONS OF CERTIFICATION

**NOISE-1** At least 15 days prior to the start of ground disturbance, the project owner shall notify all residences and businesses, if any, within three miles of the project site boundaries and one-half mile of linears, by mail

or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project and include that telephone number in the above notice. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

**Verification:** Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

## NOISE COMPLAINT PROCESS

**NOISE-2** Throughout the construction and operation of RSEP, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- Take all feasible measures to reduce the noise at its source if the noise is project related; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts, and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

**Verification:** Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a

complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

**NOISE-3** The project owner shall submit to the CPM for review and approval a noise control program and a statement, signed by the project owner's project manager, verifying that the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction to comply with applicable OSHA and Cal/OSHA standards.

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program and the project owner's project manager's signed statement. The project owner shall make the program available to Cal/OSHA upon request.

**NOISE-4** Following the project's first achieving a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations sections 5095–5099 and Title 29, Code of Federal Regulations section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

**Verification:** Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal/OSHA upon request.

## NOISE COMPLAINT RESOLUTION FORM

| **Rice Solar Power Project (09-AFC-10)** |
|---|
| **NOISE COMPLAINT LOG NUMBER** _____<br><br>Complainant's name and address:<br><br>Phone number: _____ |
| Date complaint received: _____<br>Time complaint received: _____ |
| Nature of noise complaint: |
| Definition of problem after investigation by plant personnel:<br><br>Date complainant first contacted: _____ |
| Initial noise levels at 3 feet from noise source _____ dBA Date: _____<br>Initial noise levels at complainant's property: _____ dBA Date: _____<br><br>Final noise levels at 3 feet from noise source: _____ dBA Date: _____<br>Final noise levels at complainant's property: _____ dBA Date: _____ |
| Description of corrective measures taken:<br><br>Complainant's signature: _____ Date: _____ |
| Approximate installed cost of corrective measures: $ _____<br>Date installation completed: _____<br>Date first letter sent to complainant: _____ (copy attached)<br>Date final letter sent to complainant: _____(copy attached) |
| This information is certified to be correct:<br><br>Plant Manager's Signature: _____ |

(Attach additional pages and supporting documentation, as required).

## E. VISUAL RESOURCES

Visual resources are the features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts to determine whether the project has the potential to cause substantial degradation to the existing visual character of the proposed project site and its surroundings, substantially affect a scenic vista or damage scenic resources, or create a new source of substantial light or glare affecting day or nighttime views in the project area. (Cal. Code Regs., tit. 14 § 15382, Appendix G.)

We consider the following CEQA significance criteria in evaluating the potential project impacts:

- Would the project have a substantial adverse effect on a scenic resource?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rocks, outcroppings, and historic buildings within a state scenic highway?
- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? (CEQA Guidelines, Appendix G.)

We also consider the project's compliance with applicable laws, ordinances, regulations, and standards (LORS). The applicable LORS are identified are identified in **Appendix A** to this Decision.

This evaluation is based on the following evidence: 10/2910 RT 21, 64-104; Exs. 1, § 5.13, 3, 4 [156-158]; 53; 200, § 6.12.

### SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Regional Setting

The Rice Solar Energy Project (RSEP) will be located in unincorporated eastern San Bernardino County, California. The project is in the Colorado Desert, within a sub-region of the Sonoran Desert. The Colorado Desert (situated primarily

below 1,000 feet above mean sea level) is distinguished from the high Mojave Desert to the north primarily by elevation and corresponding vegetation types.

The Colorado Desert is characterized by low, barren mountain ranges with jagged peaks and sloping alluvial fans or bajadas at their feet, with arid, sparsely vegetated open valleys in between. This provides expansive panoramic views. Dark browns and garnets are the dominant mountain hues in this region, although blues and purples prevail as viewing distance increases. The desert floor is dominated by lighter brown and tan soils with intermittent interruption by grey-green low-lying creosote bush and golden bursage scrub vegetation. (Ex. 200, p. 6.12-5.)

2. Project Setting

The RSEP is within Rice Valley, which is a small desert valley with flat to gently sloping terrain. Much of the Valley south of the project site consists of the Rice Valley Sand Dunes. This system of 30- to 40-foot tall sand dunes is part of a massive sand sheet, which extends from Cadiz and Ward Valleys to the west, representing a part of one of the largest dune systems in the California Desert. Low, barren mountain ranges enclose the Valley. The Turtle Mountains are to the north, the West Riverside and Riverside Mountains are to the east, the Big and Little Maria Mountains are to the south, and the Arica and Granite Mountains are to the west. (Ex. 200, p. 6.12-5.)

The 1,410-acre RSEP site will be located on private land. The site is south of the Riverside-San Bernardino County line (defined by State Route 62]) and 20 miles west of the California-Arizona state line. The site is entirely surrounded by public lands under BLM jurisdiction.

The Riverside County General Plan use designation for the site and the non-federal lands that surround it is Open Space – Rural (OS-R). OS-R land is defined as remote, privately-owned space areas with limited access and a lack of public services. The new generation tie-line that will extend approximately 10-miles to the southeast of the site and new interconnection substation constructed to connect the project with the Western 161/230-kV Parker-Blythe #2 transmission line will be located predominantly within BLM lands. These lands are classified under the California Desert Conservation Area (CDCA) Plan as Multiple-Use Class M (Moderate Use). (Ex. 200, p. 6.12-5.)

The site occupies the former Rice Army Airfield, a World War II military flight training center that opened in 1942 and closed in 1944 and subsequently operated as a private airfield until closing around 1956. A few areas of foundation or concrete from the two paved 5,000 foot runways and hardstands still remain but there are no standing structures. Any remaining features of the airfield can be seen aerially but not from SR 62, and although the abandoned town of Rice is located immediately east of the site, its remains are not readily visible form SR 62.

In addition to SR 62, which runs adjacent to the north boundary of the project site, other existing and visible man-made features within the project viewshed include the Atchison Topeka & Santa Fe (ATSF) Arizona-California Railroad line and the California Aqueduct. These features obstruct views of the natural terrain surface in views of the Turtle Mountains to the north but they do not obstruct views of the mountains. The earth berm supporting the ATSF rail line is visible and marked by extensive rock graffiti. (Ex. 200, pp. 6.12-5 - 6.12-6.)

In addition, two tall communication poles and associated low communication lines are located a short distance east of the project site to the south of the highway. ATSF railroad crossings and associated warning lights, located roughly two miles to the west and six miles to the east of the project site, respectively, are among the only other man-made intrusions in the larger project viewshed.

**Visual Resources Figure 1** below presents existing views of the project area landscape setting from various locations along State Route 62 (SR 62).

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**Visual Resources Figure 1**
**Rice Solar Energy Project Existing Landscape Setting (Photos)**

a. View from SR 62 looking south over site, to Rice Valley, Big Maria Mountains

b. View north from SR 62: ATSF rail line and rock graffiti; Colorado Aqueduct; Turtle Mountains

c. View south from SR 62 over abandoned Town of Rice

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: William Kanemoto

VISUAL RESOURCES

There are four BLM wilderness areas (WAs) within 10 miles of the project site: the Rice Valley, Turtle Mountain, Riverside Mountains, and Palen/McCoy WAs. Turtle Mountain, the nearest wilderness area, lies approximately two miles north of the project site. There is very low recreational use of the WAs. (Ex. 200, pp. 6.12-6 - 6.12-7.)

Turtle Mountain is the nearest wilderness area to the RSEP site. It is roughly two miles north of the site. The Rice Mountain Wilderness is three miles south of the RSEP site.

3. Project Components

The visual analysis evaluated the following components of the RSEP:

- **Solar power plant** that includes a footprint of approximately 2.14 square miles (1,370 acres), 17,500 heliostats arranged in a circular formation, with a diameter of 1.63 miles. Each heliostat would be 24 feet long by 28 wide, 12-foot pedestal height, and a 14.5 overall height. A single concrete solar receiver tower consisting of 538-foot-tall tower, 100-foot tall cylindrical solar receiver, and 15-foot crane (overall height: 653 feet).

- **Construction staging area (or laydown area)** of approximately 65-acres that would be located next to SR 62 and within the project fence line.

- **Plant night lighting** that includes lighting at building exteriors, entrances and driveways, around outdoor equipment, and other plant facilities.

- **Linear facilities** that include a 10-mile-long single circuit 230-kV gen tie-line, and approximately 4.6 miles of new unpaved roads and 5.4 miles of existing unpaved roads.

- **Interconnection substation** of approximately 300 feet by 400 feet that would be constructed at the point of connection with the existing transmission line. (Ex. 200, pp. 6.12-13 -6.12-14.)

The dimensions of RSEP's major features are summarized below in **Visual Resources Table 1**.

**Visual Resources Table 1**
**Approximate Dimensions of the Major Project Buildings**

| | Length (feet) | Width (feet) | Eave Height (feet) | Square Footage |
|---|---|---|---|---|
| **Permanent Buildings** | | | | |
| Administration | 153 | 63 | 13 | 9,639 |
| Warehouse | 102 | 63 | 24 | 6,426 |
| Control/operations | 93 | 64 | 13 | 5,952 |
| Steam generation | 195 | 152 | 150 | 29,640 |
| Electrical | 94 | 34 | 13 | 3,196 |
| Water treatment | 120 | 60 | 30 | 6,000 |
| Heliostat assembly building | 400 | 200 | 30 | 80,000 |
| **Temporary Buildings** | | | | |
| Guard house | 12 | 30 | 10 | 360 |
| Construction trailers | various | various | various | various |

4. Key Observation Points

The evidence describes the methodologies used to evaluate RSEP's visual impacts, including an assessment of compliance with applicable laws, the extent of any alteration to the existing viewshed, and the introduction of a substantial change to nighttime or daytime lighting levels. Impacts criteria include the type of visual change, duration of view, viewer sensitivity, and number of viewers. (Ex. 200, pp. 6.12-3 - 6.12-4; 6.12-14 - 6.12-25.)

The evidence of record includes analyses of the project's construction and operational impacts based upon the following key observation points (KOPs):

- KOP1 – Eastbound SR 62 (Middle-Ground Distance)
- KOP2 – Westbound SR 62 (Middle-Ground Distance)
- KOP 3 – Northbound Rice Road/Rice Valley Wilderness Area
- KOP 4 – Westbound SR 62, 4.2-mile segment (Middle-Ground Distance)
- KOP 5- Views from Turtle Mountain Wilderness Area (Ex. 200, pp. 6.12-7 – 6.12-12.)

**Visual Resources Figure 2** below shows the project site in relation to the KOPs and the solar tower receiver viewshed. The project would potentially be visible to **background distances** of over 20 to 30 miles to the east and west on SR 62 and up to 15 miles south of the site. (Ex. 200, p. 6.12-7.) **Visual Resources Figure 3** below shows the shows the project site in relation to the KOPs and the heliostat field viewshed. The heliostats would come into view to SR 62 motorists

roughly one mile to the west and three miles to the east, for an overall distance of roughly four miles from the highway. (Id.)

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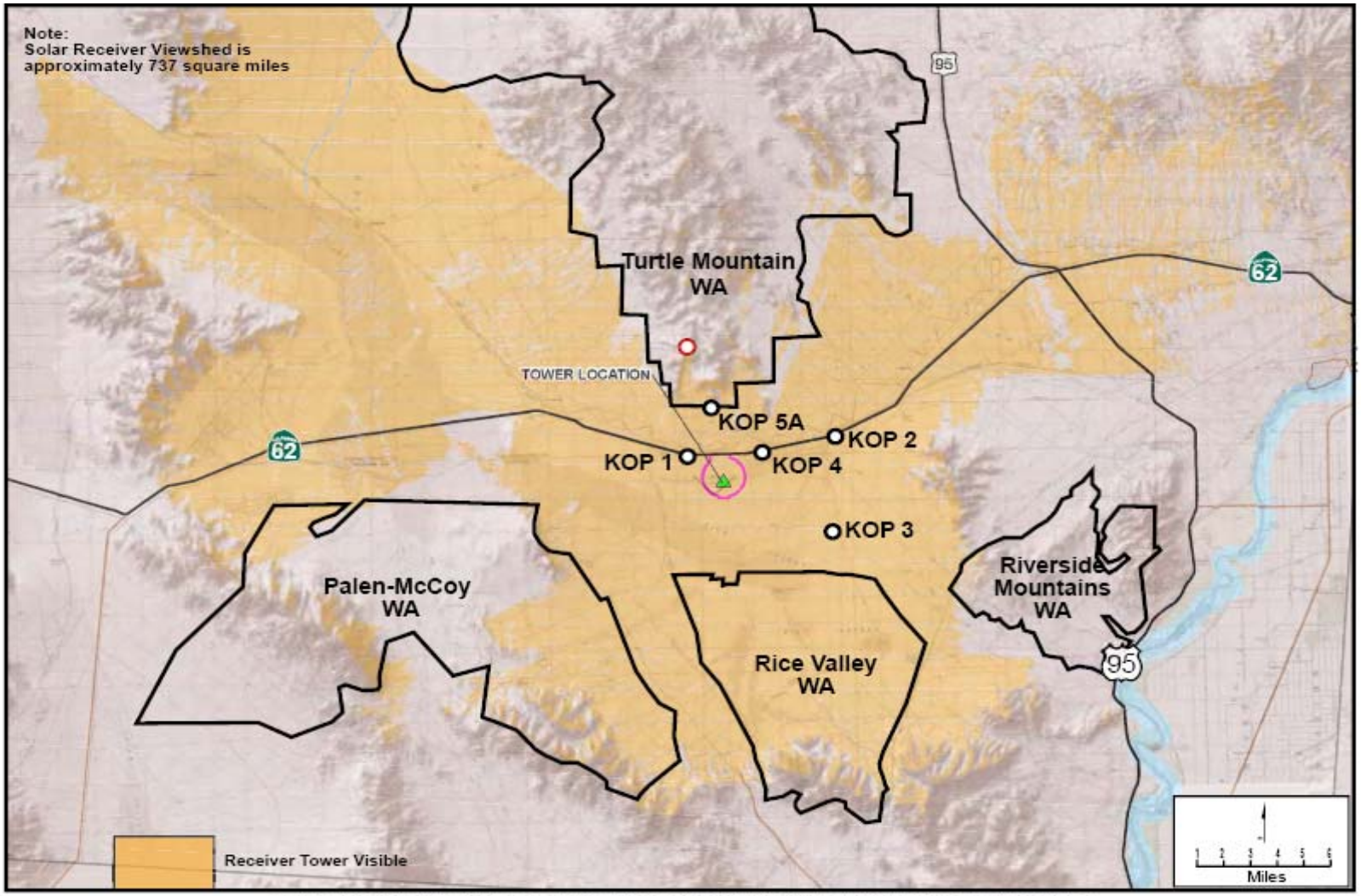
**Visual Resources Figure 2**

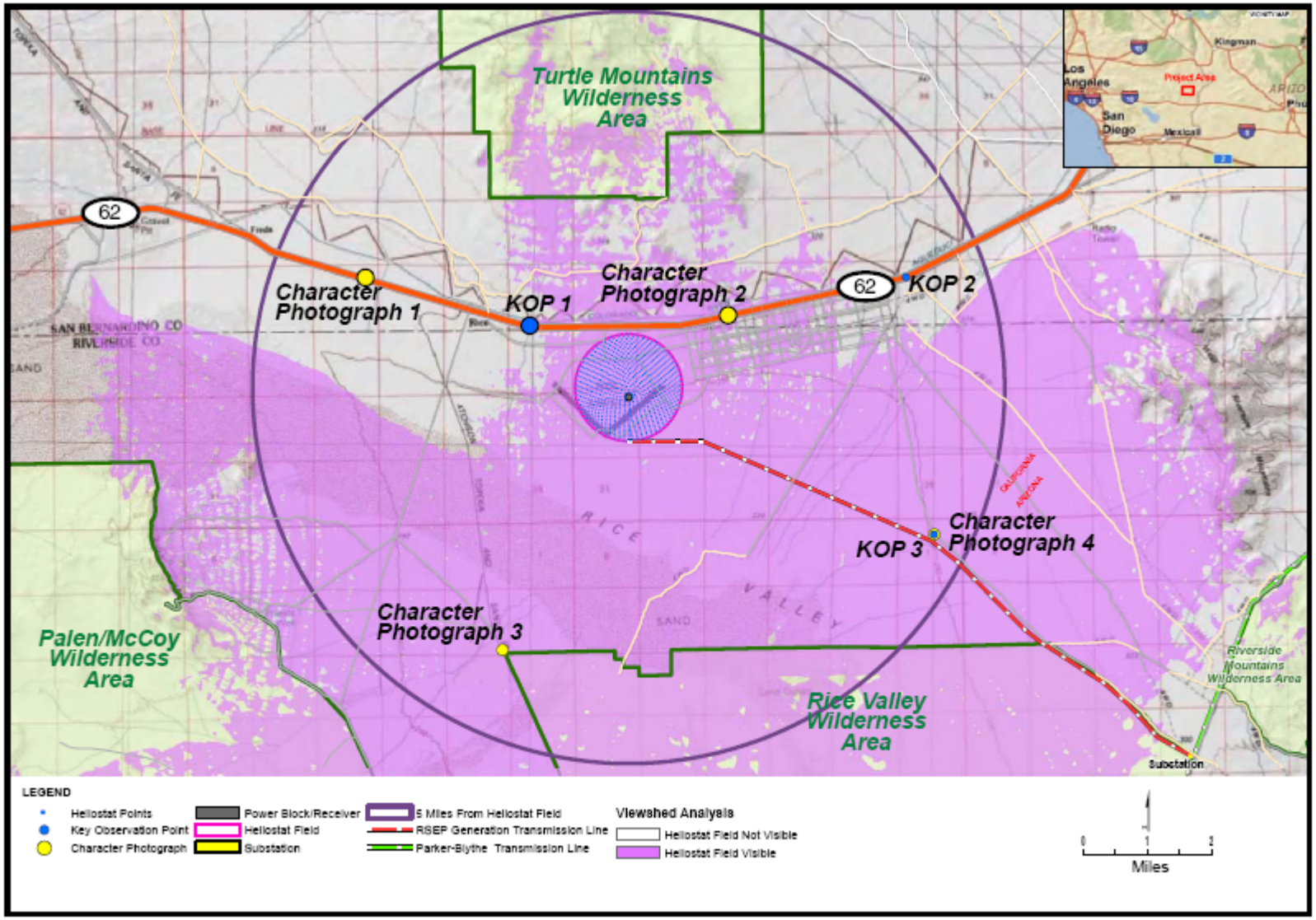
**Rice Solar Energy Project - Project Setting, Key Observation Points and Solar Receiver Tower Viewshed**




VISUAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: CH2MHill; WKA

**Visual Resources Figure 3**
**Rice Solar Energy Project – Heliostat Field Viewshed**




VISUAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Data Response #157

5. Impact on Scenic Vistas

There are no specific scenic vista locations designated in the project viewshed. (Ex. 200, p. 6.12-25.) However, BLM attributes high viewer sensitivity to all areas of the CDCA because preservation of scenery is a primary CDCA objective. We also note that a key feature of the desert landscape is the potential for large structures to be seen over great distances where even slightly elevated viewpoints exist. This is due to the large open areas of level topography and the absence of intervening landscape features. (Ex. 200, p. 6.12-7.) Thus, the project viewshed as a whole can be reasonably described as highly scenic.

Staff contends that various KOPs with high levels of viewer concern for scenic values would be affected by the project, including motorists on SR 62 and visitors to the Turtle Mountain and Rice Valley Wilderness Areas. (Ex. 200, pp. 6.12-28 – 6.2-29.) However, the evidence establishes that there are few visitors to the wilderness areas, few, if any, hiking trails that would provide hikers with the simulated KOP viewpoint, and a relatively small number of motorists (2,200 per day) traveling along SR 62. (See, e.g., 10/29/10/RT 73, 87-88.) Thus, it appears that viewer concern for scenic values would be minimally affected by the RSEP.

6. Impact on Scenic Resources

SR 62 is part of a 140-mile segment of SR 62 eligible for State Scenic Highway designation, called the “29 Palms Highway.” Much of the eligible segment is deemed “highly pristine” and free of substantial man-made visual intrusion. While visual intrusion in a scenic corridor of SR 62 could affect its eligibility for nomination as an officially designated State Scenic Highway, the evidence indicates that project impacts alone are insufficient to jeopardize eligibility. (Ex. 200, p. 6.12-25.)

The evidence also shows that there are no rock outcroppings or other notable geographic features on the project site. The site’s former use as the Rice Army Airfield may be of historical interest, but the remnants of the airfield are not evident to motorists on SR 62, nor is the former town of Rice.

Thus, the integrity of the visual setting does not appear to be an important contributing factor to the site’s status as an historic property. We therefore find that the project would not substantially damage scenic resources or significantly affect SR 62’s eligibility as a State Scenic Highway.

7. Construction Impacts and Mitigation

The proposed project laydown, parking, and other construction-related facilities will be located along 0.72 miles of highway frontage south of SR 62 at the north project site boundary. (Ex. 200, p. 6.12-22.) These facilities will occupy the immediate visual foreground of the motorists on SR 62 and would represent a high level of adverse visual change during the 30-month construction phase and the time required for full restoration of the ground disturbance that will be caused by these temporary facilities.

For instance, the existing scrub vegetation will be replaced by the visually dominant presence of equipment, construction materials, parked vehicles and disturbed ground. We find that these disturbances represent a high level of visual change and significant, temporary (though long-term) impact.

The evidence also establishes that site grading also represents a substantial construction-related visual component of the project. More particularly, surface disturbance of the proposed site will result in high contrast between the disturbed area and the desert surroundings. This is due to the high contrast between the disturbed soil color and albedo (this is a measure of a measure of how strongly it reflects light from light sources such as the Sun), and the color and albedo of the existing undisturbed, vegetated surface. (Ex. 200. pp. 6.12-22, 6.12-23.)

Thus, we find that the temporary grading impacts will be significant. With implementation of Condition of Certification **VIS-3** the grading impacts will be mitigated to less than significant levels. To reduce the construction-related impacts to less than significant levels, we adopt Condition of Certification **VIS-3**. Under this Condition, the soil surface and set-back area south of SR 62 must remain undisturbed to the maximum extent feasible.

8. Operation Impacts and Mitigation

As summarized below, the evidence shows that the project will affect visual sensitivity and result in visual change in the project area. However, these impacts, if significant and capable of mitigation, will be mitigated to less than significant levels. Impacts that are significant, unavoidable, and unmitigable are addressed in the Statement of Overriding Considerations and Findings below. In the following discussions, the distance-zone term ‘foreground’ refers to viewing distances under ½-mile. The term ‘middle-ground’ refers to distances between ½

and 4 or 5 miles, ‘near middle-ground’ refers to that portion of middle-ground under roughly one mile, and the term ‘background’ to distances over 5 miles.

***KOP 1 - Eastbound SR 62 (Middle-Ground Viewing Distance [1 mile])***

KOP 1 represents potential viewers of the RSEP from eastbound SR 62, approximately 1 mile northwest of the project site. The view is toward the southeast where the RSEP site is seen at middle-ground viewing distance. **Visual Resources Figure 4,** (View 4A) represents the existing view from this KOP.

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**Visual Resources Figure 4, View 4A and 4B**
**Rice Solar Energy Project - KOP 1 – Eastbound State Route 62**

KOP 1 - Existing view from eastbound State Route 62, looking southeast toward Rice Valley and the Rice Solar Energy Project

KOP 1 - Simulated view from eastbound State Route 62, looking southeast with Rice Valley and the Rice Solar Energy Project in the view

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC 5.13-6

VISUAL RESOURCES

As shown, the landscape is characterized by flat, tan desert plain in the foreground and middle ground, with dark, jagged mountain ranges of the West Riverside Mountains and Riverside Mountains in the background to the

southeast. These middle ground and background portions of the view are the focus of motorists' attention. (Ex. 6.12-8.)

The visual quality of this landscape is moderately high because of the relatively high-level intactness and unity of the landscape from the absence of human development and disturbance in surrounding area. Panoramic, long-distance views are present to the south over much of this segment of SR 62. According to Staff, these middle-ground and background distance portions of the view are the focus of motorists' attention.

Man-made features are present in the foreground of this view. Staff suggests that these features are not highly intrusive and do not block scenic views to the south of the road. The AT & SF rail line and the Colorado Aqueduct are to the north and parallel SR 62 for six miles to the west and east of the RSEP site. They are 150 feet and 500 feet (respectively) from SR 62. Staff states that these facilities do not obstruct scenic view primarily because they tend to be overlooked by motorists drawn to the scenic views of the valley to the south. (Ex. 200, p. 6.12-9.)

According to Staff, viewer concern is moderately high due to the eligible State Scenic Highway status of SR 62, its designated County scenic highway status, and the "presumed high proportion of recreation-and scenery-oriented travelers in this area." (Id.) We note that the latter statement is not directly supported by the evidence. Data obtained from Cal-Trans estimates that SR 62 averages approximately 2,200 vehicles per day. Seven to 21 percent of these motorists were trucks. There is no evidence presented on the motorists' destinations or purpose for traveling on SR 62. Thus, the evidence suggests that viewer concern is moderate at best.

Viewer exposure from eastbound SR 62 to approximately one mile west of the project site is low to moderate. Until motorists reached KOP1, they would experience partially screened views of the site due to the orientation of the road and the intervening topography that blocks views until motorists reach a westward turn in the road. However, once motorists are between KOP1 and KOP 2, the site comes into full view as shown by **Visual Resources Figure 2** above. (Id.)

Thus, overall visual sensitivity for SR 62 motorists appears to be moderately low to moderate. (Ex. 200, pp. 6.12-8 - 6.12-9.)

As shown in view 4B of **Visual Resources Figure 4** above, after the project is constructed, at approximately one mile from the site, the mirror field would not be visible. View 4B presents a simulated view of the project from KOP 1.

The 653-foot tall receiver tower is visible in eastbound views and contrasts with the open sky above the ridgeline of the mountains. The 100-foot receiver will be bright and visually intrusive. They will exhibit vertical form and line contrast as seen against the open sky above the ridgeline of the mountains in the distant background. The glare from the receiver would be contrastive and Staff anticipates that it would strongly draw the attention of motorists and be a distraction. Color contrast will be moderate with an appropriately colored surface. Thus, Staff estimates that the overall visual contrast for eastbound motorists would be high for a distance of at least two to three miles. (Ex. 200, pp. 6.12-14 – 6.12-15.)

From this KOP, the solar receiver tower would exert strong scale dominance given the setting characterized by flat, horizontal topography. It would exert strong spatial dominance by attracting attention to the bright receiver.

We note that KOP1 lies outside of the segment of SR 62 in which the mirror field would be visible. (Ex. 200, p. 6.12-14.) From this point eastward for a distance of roughly 1-1/2 miles, the heliostat field would be behind the motorists. Thus, the visual impacts are limited to the solar receiver tower and receiver.

View blockage from this KOP will be moderate as the receiver tower would intrude into views of the Rice Valley and mountains in the background. Overall, from KOP1, visual change would be high. We concur with Staff's assessment that the impact would be adverse, but the evidence persuades us that the impact would not be significant primarily because the viewers of concern are motorists within one mile of the site, presumably traveling at the posted speed limit. These motorists would have a somewhat blocked view of the mountain ridgelines and be distracted by the tower and receiver for too short a period of time for the impact to be significant.

Even so, we agree with Staff-proposed Condition of Certification **VIS-1** that requires the project facility surfaces to blend with the visual background.

***KOP 2 - Westbound SR 62 (Middle-Ground Viewing Distance [3.5 miles])***

KOP 2 represents potential viewers of the project from westbound SR 62, approximately 3.5 miles northeast of the RSEP site. The view is to the southwest and the site is viewed near the boundary of middle-ground/background viewing distances. (Ex. 200, p. 6.12-9.) **Visual Resources Figure 5** (View 5A) represents the existing view from this KOP. From this view, the heliostat field is not within sight. The heliostats do not become visible until westbound motorists are within about one mile of this KOP. (Ex. 200, p. 6.12-6.)

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## Visual Resources Figure (View 5A and View 5B)
## Rice Solar Energy Project - KOP 2 - Westbound State Route 62

KOP 2 - Existing view from westbound State Route 62, looking southwest toward Rice Valley and the Rice Solar Energy Project

KOP 2 - Simulated view from westbound State Route 62, looking southwest with Rice Valley and the Rice Solar Energy Project in the view

**CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION**
SOURCE: AFC 5.13-7

VISUAL RESOURCES

This KOP's view characteristics are similar to those described above for KOP 1. The valley floor in the foreground consists of a typically light tan, flat desert floor with sparse desert grasses and shrubs. Wood distribution poles parallel the highway and are highly visible in the foreground. In the background, the Arica Mountains and more distant Granite and Maria Mountains can be seen in westward views. Though not shown on the photo, the low ridges of the Turtle Mountains can be seen in middle-ground distances of as little as one mile. (Ex. 200, p. 6.12-9.) For the reasons given above regarding KOP1, we find that overall visual sensitivity of motorists is moderately low to moderate. (Ex. 200, pp. 6.12-9 - 6.12-10.)

As shown in view 5B of **Visual Resources Figure 5** above (a simulation), after the project is constructed, at a distance of 3.5 miles or greater, the project contrasts with site surroundings. At this distance, the receiver will exert moderately high visual and spatial dominance due primarily to the brightness of the receiver and height of the tower. However, at this distance, the overall magnitude of the structure is small and does not penetrate the mountain ridgeline. (Ex. 200, p. 6.12-16.) And, color contrast would be reduced with appropriate coloring of the facility structures. In this view, the receiver tower will be seen against the foreground of distribution poles that echo its vertical form. Thus, the greatest source of contrast would be the brightness of the receiver. Overall contrast appears to be moderate.

The solar receiver and tower would exert moderately high visual spatial and scale dominance due to the receiver's brightness. However, view blockage will be moderately low at this distance because the tower will not penetrate views of the mountain ridgeline. Thus, overall, the visual change at this distance appears to be moderate to moderately high.

However, as discussed above regarding KOP 1 this adverse impact is not significant. The evidence persuades us that the impact would not be significant primarily because the viewers of concern are motorists within one mile of the site, presumably traveling at the posted speed limit. These motorists would have a somewhat blocked view of the mountain ridgelines and be distracted by the tower and receiver for too short a period of time for the impact to be significant.

We also find that implementation of Condition of Certification **VIS-1**, will minimize the contrast impacts.

***KOP 3 - Northbound Rice Road/Rice Valley Wilderness Area (Middle Ground/Background Viewing Distance [5 miles])***

KOP 3 represents potential viewers of the project from northbound Rice Valley Road, including views of visitors to the Rice Valley Wilderness Area. (Ex. 200. pp. 6.12-9 -6.12-10.) KOP 3 is approximately 5 miles southwest of the RSEP site where the RSEP generator tie-line would intersect with Rice Valley Road. The view is to the northwest.

**Visual Resources Figure 6** (View 6A) represents the existing view from this KOP.

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**Visual Resources Figure 6**
**Rice Solar Energy Project – KOP 3**
**Northbound Rice Road/Rice Valley Wilderness Area**

KOP 3 - Existing view from the intersection of the transmission line and an off-highway vehicle road, looking northwest toward the Rice Solar Energy Project

KOP 3 - Simulated view from the intersection of the transmission line and an off-highway vehicle road, looking northwest with the transmission line and the Rice Solar Energy Project in the view

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: AFC 5.13-8

VISUAL RESOURCES

Visual quality is moderately high due in part to the high level of intactness and unity that comes from vast, unobstructed, panoramic views of a pristine, largely unaltered natural landscape. In this setting the absence of man-made intrusions over a vast viewshed constitutes one of its principal vivid qualities. Viewer concern is considered moderately high. The area is used by OHV recreationists accessing the Rice Valley Wilderness Area on closed, designated trails and is representative of the experience of visitors enroute to the wilderness.

Viewer exposure is moderately low overall. Travelers on northbound Rice Valley Road would experience open, unobstructed views of the project site from KOP 3 and throughout the Rice Valley. View duration will be extended since travel within the WA would take place on unimproved roads and, within the WA, on foot. However, viewer numbers in and out of the WA are believed by BLM to be extremely low. Accounting for distance and low viewer numbers, overall visual sensitivity of the WA is moderate. (Ex. 200, pp. 6.12-10 - 6.12-11.)

As shown in view 6B of **Visual Resources Figure 6** above (a simulation), after the project is constructed, the overall project contrast would be moderately high. Even at a five- mile distance the mirror field occupies a substantial area of the field of view. Because of the intact character of the panoramic views, color, texture, and form, contrast would be high. As discussed above, implementation of Condition of Certification **VIS-1** will reduce color contrasts of project features. However, we find that in the context of the setting's moderate visual sensitivity, this moderately high level of visual change is adverse but will result in less than significant impacts that decrease further with greater distance from the project site. (Ex. 200, pp. 6.12-17 - 6.12-18.)

***KOP 4 - Westbound SR 62 (Middle Ground Viewing Distance [1 mile])***

KOP 4 represents potential viewers of the project from SR 62 in the roughly 4.6-mile segment in which the project site and proposed mirror fields would be visible (Ex. 200, p. 6.12-11.) **Visual Resources Figure 7** (View 7A) represents the existing view from this KOP.

**Visual Resources Figure 7, View 7A and 7B**
**Rice Solar Energy Project - KOP 1 – Westbound State Route 62**

Character Photo 2

Simulation from Character Photo 2

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Data Response #157-2

VISUAL RESOURCES

Visual quality is moderately high for the same reasons as discussed above regarding KOPs 1 and 2. Visual quality is also affected by the presence of an existing man-made intrusion, which is a telecommunications tower close to the highway. From this perspective, the height of the transmission tower appears to exceed that of the proposed SREP tower receiver. Viewer concern appears to be moderate for the reasons discussed above regarding KOP1. Viewer exposure is high within this portion of the project viewshed as views of the site are unobstructed and at close distance. But given that there are only 2,200 daily motorists on SR 62, there are not a significant number of viewers. Nor do these motorists traveling along SR 62 view the project site for more than few minutes. (Ex. 200, p. 6.12-11.)

As shown in view 7B of **Visual Resources Figure 7** above (a simulation), after the project is constructed, the mirror fields will be prominently visible for roughly 3 miles of the highway for westbound motorists, and for roughly one mile for eastbound motorists. Because the mirrors have a diameter of 1.6 miles, they will be seen at an oblique angle, and will extend across the entire field of view, occupying much of the view within a one mile distance. Furthermore, views will be strongly drawn by the bright solar receiver, and high contrast of the tall receiver tower. The vast expanse of the mirror field will be highly prominent. Indeed, for a portion of this segment, the heliostats will dominate and block views from the highway. Thus, it appears that visual dominance at a distance of one mile or less would be high. (Ex. 200. p. 6.12-19.)

Given the vast extent of the mirror field seen at close distances, and the high contrast of the tall, brightly lit receiver tower, overall project contrast from this portion of the highway –at a distance of one mile or less - would be high. (Ex. 200. pp. 6.12-18 - 6.12-19.)

However, as discussed above regarding KOP1 and KOP2, while the impacts would be adverse, they will not be significant.

***KOP 5 - Views from Turtle Mountain WA (Middle Ground Viewing Distance)***

KOP 5 includes two simulated post-construction views created by Staff in Google Earth, from elevated ridges within the Turtle Mountain Wilderness Area at distances ranging from 2 to 4.8 aerial miles from the project site. (Ex. 200. p. 6.12-11.) **Visual Resources Figure 8** below shows these views (Views 8A and 8B.)

As shown, the views are facing south toward the project site, and are representative of the views of climbers within the Turtle Mountain Wilderness Area. In each view, the bajada or alluvial fan descending from the foot of the mountains is visible in the foreground, with the expanse of the Rice Valley in the distance. The Little and Big Maria Mountains are approximately 15 miles away in the background. (Ex. 200, p. 6.12-12.)

Staff asserts that visual quality and viewer concern within the Turtle Mountains is moderately high based in part on BLM's determination that that all areas of the CDCA have high viewer sensitivity. (*Id*.) The evidence shows however, that there are relatively few recreational uses of the nearby wilderness areas. Moreover, the evidence strongly indicates that there are very few – if any- viewers who could access the simulated KOPs. Thus, viewer exposure appears very low as does overall viewer sensitivity. (10/29/10 RT 73, 87-88; Ex. 200. pp. 6.12-11 - 6.12-12.)

As shown in view 8A of **Visual Resources Figure 8** above, which simulates an elevated middle-ground viewpoint in the Turtle Mountains, the heliostat fields would exhibit moderate form contrast and strong color and texture contrast. The latter would vary according to changing brightness levels of diffuse reflected sun. At 1,380-foot elevation and a distance of 2 miles, the project appears as a thin contrasting line. Visual dominance is moderate and depends on how much attention the receiver and heliostat field will attract due to brightness. While the heliostat field would block views of the portion of the Valley floor that it occupies, at this distance, it would represent a moderately low portion of the view field. Thus, overall, contrast from this KOP would be high and visual change from elevated viewpoints could also be high. (Ex. 200. p. 6.12-20.)

As shown in View 8B ( roughly 4.8 miles from the project site at an elevation of approximately 2,428 feet or roughly 2,100 feet or more above the project site, at the top of a ridge) visual magnitude of the mirror field declined substantially as compared to the view from KOP 5A. The vertical angle of view remains relatively oblique, and foreground features, particularly intervening ridges of the Turtle Mountains, are beginning to block a part of the view of the project. Form contrast would be moderately low; color and texture contrast would be moderately high as discussed with respect to KOP 5A. (Ex. 200. pp. 6.12-21 - 6.12-22.)

Visual dominance is moderate. The overall portion of the view occupied by the project is also moderate. Dominance would depend to a degree on how much attention the solar receiver and mirror field attract due to brightness. At this

distance, the dominance of these bright objects is anticipated to be moderate. (Ex. 200. p. 6.12-21.)

The project heliostat field would block views of the portion of the valley floor that it occupies. But, at this distance, this would represent a moderately low portion of the field of view. The solar receiver tower would intrude into background views of the valley and mountains to a minor degree due to the continuous brightness of the receiver.

9. Glare Impacts

According to the Applicant, at 62 miles (the distance from the nearest point on SR 62 to the solar receiver tower), reflected luminous flux would be 200 lumens. While this level of brightness is not a hazard, it represents a very bright, intrusive and distracting object in the field of view. (Ex. 200, p. 6.12-21.) The evidence indicates that the receiver could be visible as a bright object in the field of view to a distance of ten miles or more.

The majority of mirrors (including those nearest to SR 62) in the heliostat field will point south toward the receiver tower and are therefore not expected to direct light toward the highway. A smaller number of mirrors will, however, face north toward SR 62. (Ex. 200, p. 6.12-21.) These mirrors are expected to be shielded by the heliostats to the north (whose backs face SR 62) and will not direct concentrated solar energy toward motorists. The evidence supports Staff's conclusion that the aggregate brightness of the heliostat field will not be a hazard to observers on the ground but could be a distracting nuisance at various times.

To minimize potential adverse impacts on the solar receiver tower and heliostat field on motorists or aviation activities, we adopt Conditions of Certification **TRANS-6** and **TRANS-7**, which collectively require the project owner to prepare a Heliostat Positioning Plan and a Solar Energy Receiver Luminance Monitoring Plan. We note that even with implementation of these Conditions, illumination from the solar receiver could remain bright, intrusive and distracting for considerable distances. (Ex. 200. p. 6.12-21.) But, as discussed above, given that motorists on SR 62 are the viewer of concern, the exposure would be of such limited and minimal duration the adverse impact would not be significant. (Ex. 200. p. 6.12-22.)

10. Viewer Sensitivity to and Concern Regarding Impacts

As reflected in the PMPD as initially presented, we found that that the evidence did not unequivocally support a finding that the RSEP would result in significant adverse visual impacts. Conclusions regarding who would be significantly and negatively affected by this impact remained somewhat vague.

Staff's comments on the PMPD are noted. However, the organization identified as Desert Survivors made a salient point at the PMPD Conference held on December 3, 2010, and in its written comments, regarding the overall issue of viewer sensitivity and concern that was not developed in the evidentiary record or fully evaluated by the PMPD.

Desert Survivors is self-described as a group that walks the deserts, beholds the views, and is awed by the vast open spaces of this complex of desert valleys and surrounding mountains. According to Desert Survivors, its members lead hikes in the Turtle Mountains Wilderness, the Riverside Mountains Wilderness, the Little Marias, and Palen Wilderness. Desert Survivors further asserts that its members camp in the Arica Mountains off the Rice Midland Road and along the Parker-Blythe "transmission line road proposed to be linked the Rice Project"

Desert Survivors' comments indicate that its members seek out and travel to these destination locations for subjective psychic and emotional reasons that are not readily quantified but should not be dismissed or minimized.

Where unique and important natural areas such as wilderness areas are involved, it is essential that an evaluation of viewer sensitivity and concern include a robust, fact based assessment of impacts on wilderness and scenic areas. The assessment must capture the reasons for which visitors seek out these destinations and how the visitation and viewing experiences might be affected. The evidentiary record in this proceeding does not give weight and significance to these factors beyond identifying and evaluating hypothetical impacts associated with simulated and arguably inaccessible KOPs.

These comments from Desert Survivors suggest the possibility of greater impacts to viewer sensitivity and concern than was initially presented or understood. As a result, we recognize there is a reasonable argument of direct and cumulative significant visual impacts to visitors (albeit few visitors) of the nearby destination areas (i.e., wilderness areas and Joshua Tree National Park) caused by the introduction of the receiver tower and 360 degree luminance from the top of the

receiver tower. The receiver tower could also affect glare perceptions discussed below.

We further recognize that any such impacts could be mitigated only by moving the project to another another site or changing the project design and technology. As more fully discussed in the **Alternatives** section of this Decision, neither alternative is feasible for satisfying the project objectives.

In order to supplement our evaluation of this matter and more fully recognize the points raised by Desert Survivors, we have reexamined the existing evidence of record and have decided to supplement the original PMPD with a Statement of Overriding Considerations and Findings, below, to address the potentially significant and unmitigable impacts to viewer sensitivity and concern.

11. Nighttime Lighting

Outdoor night lighting is proposed in various locations including building exterior entrances and driveways, around outdoor equipment in the power block and switchyard areas, and various other areas. The Applicant proposes compliance with standard Energy Commission lighting requirements such as restricting lighting on-site and using shielding to avoid “backscatter” illumination. (Ex. 200, p. 6.12-13.)

The evidence shows that nighttime light pollution impacts would be of particular concern to visitors to the Turtle Mountain and Rice Valley Wilderness Areas. The pristine, completely unlit night sky conditions of the existing setting is a part of the attraction of virtually all WAs within the California Desert, and is often cited as a valued attraction of the desert for campers. However, it appears that these night light pollution effects of the project, with appropriate mitigation measures as proposed by the Applicant and described in Staff-recommended (and adopted) Condition of Certification **VIS-2**, will not be substantial beyond background distances of very roughly 4 or 5 miles. **VIS-2** imposes conditions and standards for the project’s use of temporary and permanent exterior lighting.

According to the evidence, the radius of effect from FAA aviation lighting and illuminated power block, parking and other associated facilities would correspond roughly to the boundary of the adjoining WAs. Therefore, campers within the boundaries of the WAs would be minimally affected. This, together with the fact that the number of such visitors to either WA is believed to be extremely low, supports our conclusion that such effects would be less-than-significant.

The evidence also shows that motorists on SR 62 will experience these adverse light pollution effects within the same general radius of effect as the WAs. Sensitivity of night time motorists will likely be moderate because the brightness of auto headlights would be brighter than the project lighting effects being considered; the overall number of night motorists will be relatively low, and the experience for such motorists would be of relatively short duration. Consequently, we find that light pollution impacts to nighttime motorists are adverse, but not significant. (Ex. 200, pp. 6.12-26 – 6.12-27.)

12. Impacts of Telecommunications Interconnections

As more fully discussed in the **Transmission System Engineering** section of this Decision, the project requires the installation of telecommunications interconnections between the RSEP and either or both Western's Parker and Blythe substations. The following alternative telecommunication system options are evaluated in this Decision: 1) optical ground wire (OPGW) – both above ground and underground; 2) microwave (radio-frequency) transmission; 3) power line carrier/broadband-over-Power-Line (BPL) and; 4) all-dielectric, self-supporting (ADSS) optical cable.

The evidence shows that indirect impacts could result from any of these interconnections but construction of a microwave tower at the Headgate Rock substation, the Black Point substation, and possibly an intermediate microwave tower in the Rice Valley are the only options that would result in significant visual impacts that would require mitigation. Staff concluded, and we concur, that implementation of Conditions of Certifications **VIS-1** and **VIS-3** (discussed above) will reduce the impacts to less than significant levels. (Ex. 200, pp. 6.12-23 - 6.12-24.)

13. Closure and Decommissioning

The Applicant will submit a decommissioning plan upon permanent closure of the facility. The plan would address compliance with applicable LORS, removal of equipment and shutdown procedures, site restoration, potential decommissioning alternatives, and the costs and source of funds for decommissioning activities. The removal of the existing facility would leave a very prominent visual impact over the entire site. Visual recovery from land disturbance after closure and decommissioning could take place, although over a long period of time, with

implementation of an active and comprehensive revegetation program for the site as set forth in Condition of Certification **VIS-3**. (Ex. 200, pp. 6.12-24 - 6.12-25.)

14. Cumulative Impacts

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. [14 Cal. Code Regs., § 15355.]

The record contains a thorough cumulative impacts analysis. As shown by the evidence, the RSEP is potentially associated with two types of visual impact:

- Those within the immediate, local project viewshed, essentially comprising foreseeable future projects in the Chuckwalla Valley; and

- Those of foreseeable future solar and other renewable energy projects within the southern California Colorado (Sonoran) Desert, or other broad regional basin of the project's affected landscape type. The widest applicable basin of cumulative effect would include all of the southern California desert, or the Sonoran and Mojave Desert landscapes extending into neighboring states. This analysis, focusing on regional effects of renewable projects only, is considered appropriate because the potential cumulative contribution of all other types of permissible development within this region is comparatively minor, and is dwarfed by the potential cumulative effect of renewable projects. (Ex. 200, p. 6.12-38.)

<u>Existing Cumulative Conditions</u>. Existing cumulative, developed facilities potentially affecting the local project viewshed include the ATSF Arizona-California Railroad line, the Colorado River Aqueduct, and the telecommunications tower observed in Figure 7 above. These projects, though paralleling SR 62 at close distance and quite evident, have had limited effects on the most valued portions of the project viewshed and scenic views. Even with these facilities present, the viewshed has remained relatively intact, natural in character, and highly scenic. (Ex. 200, p. 6.12-38.)

<u>Foreseeable Future Projects</u>. Foreseeable projects within the project viewshed include the proposed Ward Valley solar thermal power plant, Clean Air Solar II 900 MW solar project (no technology specified), a potential 13,000-acre project; and the Cadiz Lake solar thermal power plant. Taken together, these four projects including the RSEP would result in substantial manmade visual intrusion

into a visually intact and scenic area of SR 62. This intrusion could potentially render SR 62 ineligible for designation as a State scenic highway. More specifically, these four projects would affect over 50 miles of the most scenically intact portions of that highway, altering it from a natural, scenically intact desert landscape into one characterized by the strong visual influence of these industrial facilities. In addition, cumulative night light pollution impacts in the project area could become cumulatively considerable. However, the evidence does not establish that the potentially significant visual impacts of the RSEP in combination with past and foreseeable future projects in the local viewshed of Rice Valley and of SR 62 cannot be mitigated to less than significant levels. (Ex. 200, pp. 6.12-38, 6.12-39.)

Foreseeable future projects also include renewable projects in the California Desert. Although it is not likely that all of the future solar and wind development projects proposed in the region would be constructed, it is reasonable to assume that some of them will. With this very high number of renewable energy applications currently filed with BLM, the potential for profound widespread cumulative impacts to scenic resources within the southern California desert is clear. These cumulative impacts could include a substantial decline in the overall number and extent of scenically intact, undisturbed desert landscapes, and a substantially more urbanized character in the overall southern California desert landscape. In particular, the number of current renewable applications before the BLM and Energy Commission that could potentially be prominently visible from the desert region's major highways is proportionally high. Likewise, the cumulative length of potentially affected highways also appears proportionately high. Because these highways are the location from which the vast majority of viewers experience the California desert, this potential effect is of concern to staff. Viewed in the cumulative context of the Southern California desert region as a whole, the potential visual impacts of renewable energy projects are thus considered to be cumulatively considerable and potentially significant. However, there is no evidence that the impacts are unmitigable except as discussed above under Viewer Sensitivity and Concern and below under Statement of Overriding Considerations and Findings. (Ex. 200, pp. 6.12-39 - 6.12-40.)

15. Compliance with LORS

Based on the foregoing and as summarized by the Applicant in Section 5.13 of the AFC (particularly Table 5.13-6), we find that the RSEP will comply with all applicable LORS.

## FINDINGS OF FACT

Based on the evidence of record, we find and conclude as follows:

1. The Rice Solar Energy Project will be located on private land but the tie-line and substation will be located primarily on undeveloped public land administered by the BLM.

2. SR 62, which borders the project site on the north, is eligible for designation as a State Scenic Highway.

3. There are four Wilderness Areas within a 10-mile radius of the RSEP site, with the Turtle Mountain WA being the nearest two miles north of the project site.

4. Construction of the project, grading, and the 65-acre lay down area will result in prominent visual changes to the area landscape. Condition of Certification **VIS-3** will reduce impacts from construction to less than significant levels.

5. The project assessment evaluated five KOPs and the project's potential to cause various visual impacts within the KOP viewshed.

6. With implementation of the Conditions of Certification, any potentially significant impacts will be reduced to less than significant levels to the extent possible.

7. We find that there is a cumulative significant environmental impact to visitors of the nearby destination area (i.e., wilderness areas and Joshua Tree National Park) caused by the introduction of the receiver tower and 360 degree luminance from the top of the receiver tower. We also find that the receiver tower could also significantly affect glare perceptions of these viewers. These potential impacts cannot be mitigated to less than significant levels.

8. The linear facilities will incrementally add to the visual presence of the project. Condition of Certification **VIS-1** has been identified to reduce visual impacts from the transmission line.

9. There is no evidence that the RSEP located in a topographically isolated valley, will create or contribute to significant, unmitigable cumulative visual impacts because of the project's effect on the undeveloped landscape and the potential for development of other similar projects in the CDCA.

## STATEMENT OF OVERRIDING CONSIDERATIONS AND FINDINGS

Our analysis of the RSEP finds that there is a reasonable argument that the introduction of the receiver tower and 360 degree luminance from the top of the receiver tower could result in significant unmitigated environmental impacts. Our analysis further finds that receiver tower could also affect viewer glare perceptions. Thus, if the project will be approved, the California Environmental Quality Act (CEQA) requires the Energy Commission to take the following two actions as set forth in Public Resources Code section 21081:

> " (a) The public agency makes one or more of the following findings with respect to each significant effect:
>
> (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
>
> (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
>
> (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.
>
> (b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment."

(Public Res. Code, §§ 21002, 21002.1, 21081.)

1. Significant Project Impacts

As identified and discussed above in this **Visual Resources** section**,** we find there is a reasonable argument that the RSEP will have direct and cumulative significant environmental impacts to visitors of the nearby destination area (i.e., wilderness areas and Joshua Tree National Park) caused by the introduction of the receiver tower and 360 degree luminance from the top of the receiver tower. We also find that the receiver tower could significantly affect glare perceptions of these viewers. Except for these potential significant impacts, all RSEP-caused direct, indirect, and cumulative impacts will be mitigated to less than significant levels, as identified and discussed in the specific topic sections of this Decision.

2. Project Benefits

The RSEP, if constructed and operated as proposed, will provide the following benefits to California and its residents as discussed in the **Greenhouse Gas (GHG) Emissions** and **Socioeconomics and Environmental Justice** sections of this Decision:

- RSEP will provide 150 MW of renewable energy power, which will assist in meeting California's Renewable Portfolio Standard, which specifies that retail sellers of electricity serve 20 percent of their load with renewable energy by 2010. (Pub. Util. Code, § 399.11 et seq.) Gubernatorial Executive Orders increase the requirement to 33 percent by 2020. (Governor's Executive Order S-14-08.)

- Producing electricity from renewable resources provides a number of significant benefits to California's environment and economy, including improving local air quality and public health, reducing global warming emissions, developing local energy sources and diversifying our energy supply, improving energy security, enhancing economic development and creating green jobs. (2009 CEC Integrated Energy Policy Report, p. 231.)

- Scientific studies quantify the negative impacts of global climate change to California's and the world's population, environment, food supplies, flora and fauna, coastal regions, and public health. In order to reduce the impact, the State has adopted goals to reduce greenhouse gas emissions through renewable energy development.

- RSEP will assist the state in meeting its ambitious greenhouse gas reduction targets by generating 150 MW of electricity with vastly lower greenhouse gas emissions than existing fossil fuel burning generating facilities.

- By generating electricity with the use of only a small amount of fossil fuels, RSEP will reduce California's dependence on fossil fuels.

- RSEP will provide construction jobs. The number of construction workers would range from a minimum of 29 in the first month to a maximum of 438 in the twelfth month of construction. The project is expected to require a total of 47 permanent full-time employees. The power plant construction work force, which will require numerous highly trained employees, is expected to be drawn from the Riverside/San Bernardino County region and La Paz County, Arizona. (See, e.g, Ex. 1, § 5.10.2.3.1, Table 5.10-11.)

- Construction and operation of the RSEP will provide a boost to the economy from the purchase of major equipment, payroll, and supplies, increased sales tax revenue, and property taxes. Additional indirect economic benefits, such as employment in local service industry jobs and induced employment, will result from these expenditures as well.

3. Comparison of Project Alternatives

As is discussed in the **Alternatives** section of this Decision, none of the project alternatives will significantly reduce the above-referenced project impacts while still meeting the defined project objectives. The no-project alternative, which would eliminate the project's impacts, would also eliminate its benefits. The distributed solar energy (photovoltaic or thermal) generation and other renewable technologies are required in addition to large scale projects such as this in order to meet our renewable energy and GHG policy goals; the two complement, rather than compete with each other.

4. Site Characteristics

The RSEP site is located in an unincorporated area in the eastern portion of Riverside County, approximately 32 miles west of Parker, Arizona and approximately 40 miles northwest of Blythe, California. The project footprint would include approximately 1,387 acres of previously disturbed privately-owned property. Approximately nine miles of the 10-mile generation tie line would be located on public land. The site is in close proximity to transmission infrastructure.

5. Testimony of Terry O'Brien

On October 21, 2010, Terry O'Brien, Deputy Director of the California Energy Commission Siting, Transmission and Environmental Protection Division, representing the Energy Commission Staff, submitted written testimony entitled "Testimony of Terry O'Brien, Statement Regarding Overriding Considerations." (Ex. 201). Staff did not support an override relating to the issue of visual impacts. However, during the December 3, 2010, Committee Conference to hear comments on the PMPD, Mr. O'Brien indicated that Staff would not oppose an override finding if the PMPD was revised with a finding of significant immitigable visual impacts. (12/3/10 RT 53:21-54:55.)

6. Applicant's Testimony

In anticipation of a possible finding of significant immitigable visual impacts, the Applicant submitted additional testimony to underscore evidence contained in the Application for Certification and Staff Assessment/Draft Environmental Impact Statement. (Ex. 48) As restated by the Applicant, the evidence of record

establishes that the project will result in public benefits such as, but not limited to, the following:

- By furthering the displacement of GHG producing power plants, RSEP has the distinction and unique ability to store energy for delivery of electric power to the grid after the sun goes down.

- RSEP contributes to reductions in GHG emission from both a State and a regional perspective. Specifically, the RSEP is expected to generate on average approximately 450,000 megawatt-hours (MWh) per year and will displace the use of approximately 5.51 billion cubic feet of natural gas per year typically used by modern high-efficiency natural gas-fired plants, and reduce the emission of greenhouse gases by approximately 176,850 metric tons in carbon dioxide equivalent (CO2e) per year, when compared to a high-efficiency natural gas plant.

7. Official Notice

In arriving at the following findings, we have taken official notice of the following documents:

- Climate Action Team Report to Governor Schwarzenegger and the Legislature. CalEPA, March 2006.
- Governor's Executive Order Order S-14-08
- AB 32 Scoping Plan. CARB, December 2008.
- Integration of Renewable Resources. CAISO, Nov. 2007.
- 2007 Integrated Energy Policy Report. CEC, Nov. 2007.
- 2009 Integrated Energy Policy Report. CEC. Nov. 2009.
- Draft Final Opinion on Greenhouse Gas Regulatory Strategies:

  Joint Agency Proposed Final Opinion. CPUC/CEC 2008.
- Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California. CEC (MRW and Associates). May 2009.

Based upon the above evidence and evidence as more fully discussed in the PMPD (all of which is in the existing record), we find that overriding considerations warrant the approval of the project as mitigated through the Conditions of Certification we adopt herein. We further find that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

8. Summation

On balance, the broad benefits derived from the RSEP convincingly outweigh the substantially mitigated impacts identified herein. Based upon the above evidence, we find that overriding considerations warrant the approval of the project as mitigated through the Conditions of Certification we adopt herein. We further find that the project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity. The Committee also finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the cumulative significant effects on the environment.

Thus, based on the evidence and the conclusions drawn in other sections of this Decision, we make the following findings and conclusions pertinent to this override:

1. Climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.

2. There is a reasonable argument that the RSEP will have direct and cumulative significant environmental impacts to visitors of the nearby destination area (i.e., wilderness areas and Joshua Tree National Park) caused by the introduction of the receiver tower and 360 degree luminance from the top of the receiver tower. We also find that the receiver tower could significantly affect glare perceptions of these viewers. These potential impacts cannot be mitigated to insignificant levels.

3. This Decision imposes all feasible mitigation measures to reduce the significant impacts of the project to the lowest possible, though still significant, levels.

4. The project will provide the following benefits:

    a. Contribution of 150 MW of renewable energy power toward meeting California's Renewable Portfolio Standard and our renewable energy and GHG policy goals.

    b. A significant reduction in greenhouse gas emissions when compared with existing fossil fuel-burning generating facilities.

    c. Other important benefits to California's environment and economy include improving local air quality and public health, developing local energy sources, and diversifying our energy supply.

    d. Reduction of California's dependence on fossil fuels.

e. RSEP will provide construction jobs. The number of construction workers would range from a minimum of 29 in the first month to a maximum of 438 in the twelfth month of construction. The project is expected to require a total of 47 permanent full-time employees.

f. Provide a boost to the economy from the purchase of major equipment, payroll, and supplies, increased sales tax revenue, and property taxes. Additional indirect economic benefits, such as indirect employment, and induced employment, will result from these expenditures as well.

5. The project is required for public convenience and necessity and that there are no more prudent and feasible means of achieving such public convenience and necessity.

## CONCLUSION OF LAW

1. Conditions of Certification have been identified to reduce significant impacts identified in the proposed assessment.

2. The above described project benefits outweigh the significant impacts identified above.

3. It is appropriate to approve the RSEP despite its remaining significant environmental impacts.

4. Therefore, this decision overrides the remaining significant unavoidable direct and cumulative impacts that may result from this project, even with the implementation of the required mitigation measures described in this Decision.

## CONDITIONS OF CERTIFICATION

### SURFACE TREATMENT OF NON-MIRROR PROJECT STRUCTURES AND BUILDINGS

**VIS-1** The project owner shall treat all non-mirror surfaces of the outermost row or rows (as needed) of heliostats in the northern 180-degree circumference of the mirror field; and all other project structures and buildings visible to the public such that: a) their colors minimize visual intrusion and contrast by blending with their existing visual background: in the case of lower buildings and structures, bajadas and mountain slopes as seen from the highway; in the case of foreground generation tie line towers, the valley floor; in the case of the solar tower, the pigment of natural cement substantially similar to the simulation shown in Exhibit 53 to this proceeding; b) colors and finishes of all components, including mirror support structures, tie line poles and conductors, do not create glare or specular reflection; and c) their colors and finishes are consistent

with local policies and ordinances. The generation tie line conductors and arms shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. This measure shall include coloring of security fencing with vinyl or other non-reflective coating to blend visually to the greatest feasible extent with the background soil.

The project owner shall submit for CPM review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The treatment plan shall include:

A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

B. A list of each major project structure, building, tank, pipe, mirror support, and wall; the generation tie line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;

C. One set of color brochures or color chips showing each proposed color and finish;

D. A specific schedule for completion of the treatment; and

E. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

**Verification:** At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to Riverside County for review and comment. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the same key observation points identified in (d) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

**TEMPORARY AND PERMANENT EXTERIOR LIGHTING**

**VIS-2** To the extent feasible and consistent with safety and security considerations, the project owner shall design and install all temporary and permanent exterior lighting so that:

A lighting does not cause excessive reflected glare

B lighting does not illuminate the nighttime sky either directly or indirectly

C mounting heights of all lighting fixtures will not allow light to fall on the mirror surfaces of the solar thermal power generation reflector systems in any night time position

D illumination of the project and its immediate vicinity is minimized as to times of use and extent

E lighting on the solar receiver tower shall be the minimum needed to satisfy safety and security concerns.

Permanent night lighting shall comply with all applicable standards, best practices and regulations including specifically, the following Illuminating Engineering Society documents for Lighting Zone 1 per CEC-400-2008-017-CMF-Rev I:

- RP-33-99 Lighting for Exterior Environments
- DG-13-99 Outdoor Lighting
- TM-10-00 Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting
- TM-15-07 Luminaire Classification System for Outdoor Luminaires

**Verification:** At least 90 days prior to ordering any exterior lighting, the project owner shall contact the CPM to show compliance with all of the above requirements. This shall include, but not be limited to, final lighting plans, fixture and control schedules, fixture and control cut sheets and specifications, a photometric plan showing vertical and horizontal footcandles at all property lines to a height of 20 feet, and the proposed time clock schedule or occupancy sensor programming.

Prior to construction and prior to commercial operation, the project owner shall notify the CPM that the installation of the temporary and permanent lighting has

been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 90 days after receiving the notification the project owner shall implement the modifications and notify the CPM when the modifications are competed and ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form as specified in the Compliance General Conditions, including a proposal to resolve the complaint, and a schedule for implementation of the proposed resolution. The project owner shall notify the CPM within 48 hours after completing the resolution of the complaint. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days and included in the Annual Report.

**CONSTRUCTION AREA BUFFER ZONE, SCREENING AND RESTORATION.**

**VIS-3** To address potential impacts to motorists on SR 62 during and after the period of project construction, all construction laydown, administration, parking and other construction-related facilities shall be setback from SR-62 a minimum of 100 feet, or greater where feasible. The soil surface and vegetation of the set-back area south of the highway shall remain undisturbed to the maximum extent feasible, except to accommodate the minimum practical number of access drive-ways, or to enhance existing native vegetation.

All construction-related lighting shall be shielded, downwardly directed, with all direct lighting limited to within the project site.

Following completion of construction, the project owner shall provide a re-vegetation plan describing how the staging site will be restored, and the buffer zone area enhanced, following construction. The plan shall call for beginning of restoration of the site within the shortest feasible time following completion of construction. Under the plan, all disturbed areas shall be graded to conform to surrounding natural contours, and re-vegetated with locally native species.

**Verification:** At least 90 days prior to start of construction, the project owner shall present to BLM's Authorized Officer and the CPM a revised staging area site plan including a set-back from SR-62 of at least 100 feet. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The project owner shall not begin construction until receiving CPM approval of the revised plan.

At least 60 days prior to start of operation, the project owner shall present to the CPM a restoration and revegetation plan for the staging and buffer areas. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The project owner shall not begin operation until receiving CPM approval of the revised plan.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

# *APPENDICES*

## Air Quality

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| 40 Code of Federal Regulations (CFR) Part 52 | Nonattainment New Source Review (NSR) requires a permit and requires Best Available Control Technology (BACT) and Offsets. Permitting and enforcement is delegated to Mojave Desert Air Quality Management District (MDAQMD).<br><br>Prevention of Significant Deterioration (PSD) requires major sources or major modifications to major sources to obtain permits for attainment pollutants. The RSEP is a new source that does not have a rule listed emission source thus the PSD trigger levels are 250 tons per year for NOx, VOC, SOx, PM10, PM2.5 and CO. |
| 40 CFR Part 60 | New Source Performance Standards (NSPS), Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Establishes emission standards for compression ignition internal combustion engines, including emergency generator and fire water pump engines. |
| 40 CFR Part 93<br>General Conformity | Requires determination of conformity with State Implementation Plan for projects requiring federal approvals if project annual emissions are above specified levels. |
| **State** | |
| Health and Safety Code (HSC) Section 40910-40930 | Permitting of source needs to be consistent with Air Resource Board (ARB) approved Clean Air Plans. |
| HSC Section 41700 | Restricts emissions that would cause nuisance or injury. |
| California Code of Regulations (CCR) Section 93115 | Airborne Toxics Control Measure for Stationary Compression Ignition Engines. Limits the types of fuels allowed, establishes maximum emission rates, establishes recordkeeping requirements on stationary compression ignition engines, including emergency generator and fire water pump engines. |
| **Local (Mojave Desert Air Quality Management District, MDAQMD)** | |
| Rule 201 and 203 Permits Required | Requires a Permit to Construct before construction of an emission source occurs. Prohibits operation of any equipment that emits or controls air pollutant without first obtaining a Permit to Operate. |
| Rules 401, 402, and 403 Nuisance, Visible Emissions, Fugitive Dust | Limits the visible, nuisance, and fugitive dust emissions and would be applicable to the construction period of the project. |
| Rule 404 Particulate Matter - Concentration | Limits the particulate matter concentration from stationary source exhausts. |
| Rule 405 Solid Particulate Matter Weight | Limits the discharge of solid particulate matter based on weight of material processed. |
| Rule 406 Specific Contaminants | The rule prohibits sulfur compound emissions in excess of 500 ppmv. |
| Rule 407 Liquid and Gaseous Air Contaminants | The rule prohibits carbon monoxide emissions in excess of 2,000 ppmv. |
| Rule 409 Combustion Contaminants | Limits the emissions from fossil fuel combustion. |
| Rule 431 Sulfur Content of Fuels | Limits the sulfur content of liquid fuels to no more than 0.5% by weight. |
| Rule 900 Standard of Performance for New Stationary Source | Incorporates the Federal NSPS (40 CFR 60) rules by reference. |
| Rule 1303 New Source Review | Specifies BACT/Offsets technology and requirements for a new emissions unit that has potential to emit any regulated pollutants. |

| Applicable LORS | Description |
|---|---|
| Rule 1306 Electric Energy Generating Facilities | Describes actions to be taken for permitting of power plants that are within the jurisdiction of the Energy Commission. |

## Greenhouse Gas

| Applicable Law | Description |
|---|---|
| **Federal** | |
| 40 Code of Federal Regulations (CFR) Part 98 | This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of $CO_2$ equivalent emissions per year. |
| **State** | |
| California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.) | This act requires the California Air Resources Board (ARB) to enact standards that will reduce GHG emission to 1990 levels by 2020. Electricity production facilities will be regulated by the ARB. |
| California Code of Regulations, tit. 17, Subchapter 10, Article 2, sections 95100 et. seq. | These ARB regulations implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.) |
| Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009 | The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 $MTCO_2$/MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs $CO_2$/MWh). |

## Alternatives

### California Environmental Quality Act (CEQA)

Energy Commission staff is required by agency regulations to examine the "feasibility of available site and facility alternatives to the Applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment." (Cal. Code Regs., tit. 20, § 1765.)

The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations, Section 15126.6(a), requires an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project."

In addition, the analysis must address the No Project Alternative. (Cal. Code Regs., tit. 14, § 15126.6[e].) The analysis should identify and compare the impacts of the various alternatives, but analysis of alternatives need not be in as much detail as the analysis of the proposed project.

The range of alternatives is governed by the "rule of reason," which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative. (Cal. Code Regs., tit. 14, §15126.6[f][3].) However, if the range of alternatives is defined too narrowly, the analysis may be inadequate (*City of Santee v. County of San Diego* [4th District, 1989] 214 Cal. App. 3d 1438).

### National Environmental Policy Act Criteria

NEPA requires that the decision-makers and the public be fully informed of the impacts associated with the proposed project. The intent is to make good decisions based on understanding environmental consequences, and to take actions to protect, restore, and enhance the environment.

Alternatives identified must be consistent with BLM and Western's purpose and need for the action under consideration, which include consideration of the applicant's objectives (both are defined below). NEPA Sec. 1502.14(a) requires that an Environmental Impact Statement (EIS) rigorously explore and objectively evaluate all reasonable alternatives that are practical or feasible from the technical and economic standpoint and from using common sense, rather than simply desirable from the standpoint of the applicant. (CEQ Forty Questions, No. 1A)

As a general matter, the federal Lead Agency decision makers will ultimately determine the feasibility of each alternative at the time of project approval. It should be noted that

NEPA does not limit reasonable alternatives to ones the lead agency can adopt, and the agency should consider wide-reaching alternatives when the issue at hand is a broad one, such as a large-scale energy supply issue. (See *Natural Resources Defense Council, Inc. v. Morton* (D.C. Cir. 1972) 458 F.2d 827, 836 ("*Morton*").) Further, "[i]n determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative..." (CEQ Forty Questions, No. 2a.)

Consideration of the No Action Alternative is mandated by NEPA. Under the no-action alternative, Western would deny the interconnection request and BLM would not grant a ROW. There would be no plan amendment to the California Desert Conservation Area. As with the CEQA No Project Alternative, this is the scenario that would exist if the proposed project were not constructed.

## Biological Resources

| Applicable LORS | Description |
|---|---|
| **FEDERAL** | |
| Federal Endangered Species Act (Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.) | Designates and provides for protection of threatened and endangered plant and animal species and their critical habitat. Take of a federally-listed species, as defined in the Act, is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. |
| Migratory Bird Treaty Act (Title 16, United States Code, sections 703 through 711) | Makes it unlawful to take or possess any migratory bird (or any part of such migratory bird including active nests) as designated in the Migratory Bird Treaty Act unless permitted by regulation (e.g., duck hunting). |
| Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26)) | Requires the permitting and monitoring of discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from a regional water quality control board (RWQCB) for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request State certification that the proposed activity will not violate State and federal water quality standards. |
| Bald and Golden Eagle Protection Act (Title 16, United States Code section 668) | Provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the act. |
| Eagle Act (Title 50, Code of Federal Regulations, section 22.26) | Would authorize limited take of bald and golden eagles under the Eagle Act, where the taking is associated with, but not the purpose of activity, and cannot practicably be avoided. |
| Eagle Act (Title 50, Code of Federal Regulations, section 22.27) | Would provide for the intentional take of eagle nests where necessary to alleviate a safety hazard to people or eagles; necessary to ensure public health and safety; the nest prevents the use of a human-engineered structure, or; the activity, or mitigation for the activity, will provide a net benefit to eagles. Only inactive nests would be allowed to be taken except in the case of safety emergencies. |
| California Desert Conservation Area Plan 1980, as amended (reprinted in 1999) | Administered by the BLM, the California Desert Conservation Area (CDCA) Plan requires that proposed development projects are compatible with policies that provide for the protection, enhancement, and sustainability of fish and wildlife species, wildlife corridors, riparian and wetland habitats, and native vegetation resources. |

| Applicable LORS | Description |
|---|---|
| California Desert Protection Act of 1994 | An Act of Congress which established 69 wilderness areas, the Mojave National Preserve, expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Lands transferred to the National Park Service were formerly administered by the BLM and included significant portions of grazing allotments, wild horse and burro Herd Management Areas, and Herd Areas. |
| Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) | The BLM produced the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) as an amendment to the 1980 CDCA Plan (BLM 2002). The NECO is a federal land use plan amendment that resolves issues of resource demands, use conflicts, and environmental quality in the 5.5-million acres planning area located primarily within the Sonoran Desert in the southeastern corner of California. NECO provides reserve management for the desert tortoise, integrated ecosystem management for special status species and natural communities for all federal lands, and regional standards and guidelines for public land health for BLM lands (BLM and CDFG 2002). |
| Executive Order 11312 | Prevent and control invasive species. |
| Desert Tortoise (Mojave Population) Recovery Plan (USFWS 1994) and Draft Revised Recovery Plan (USFWS 2008a) | Describes a strategy for recovery and delisting of the desert tortoise. |
| **STATE** | |
| California Endangered Species Act of 1984 (Fish and Game Code, sections 2050 through 2098) | Protects California's rare, threatened, and endangered species. Take of a State-listed species, as defined in the Act, is prohibited without an Incidental Take Permit. |
| Protected furbearing mammals (California Code of Regulations, Title 14, section 460) | Fisher, marten, river otter, desert kit fox and red fox may not be taken at any time. |
| California Code of Regulations (Title 14, sections 670.2 and 670.5) | Lists the plants and animals of California that are declared rare, threatened, or endangered. |
| Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515) | Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations, Title 14, section 670.7). |
| Nest or Eggs (Fish and Game Code section 3503) | Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. |
| Birds of Prey (Fish and Game Code section 3503.5) | Birds of prey are protected in California making it "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes)." |
| Migratory Birds (Fish and Game Code section 3513) | Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds. |
| Nongame mammals (Fish and Game Code section 4150) | Makes it unlawful to take or possess any non-game mammal or parts thereof except as provided in the Fish and Game Code or in accordance with regulations adopted by the commission. |

| Applicable LORS | Description |
|---|---|
| Significant Natural Areas (Fish and Game Code section 1930 et seq.) | Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat. |
| Designated Ecological Reserves (Fish and Game Code section 1580 et seq.) | The CDFG commission designates land and water areas as significant wildlife habitats to be preserved in natural condition for the general public to observe and study. |
| California Environmental Quality Act (CEQA), CEQA Guidelines section 15380 | CEQA defines rare species more broadly than the definitions for species listed under the State and federal Endangered Species Acts. Under section 15830, species not protected through State or federal listing but nonetheless demonstrable as “endangered” or “rare” under CEQA should also receive consideration in environmental analyses. Included in this category are many plants considered rare by the California Native Plant Society (CNPS) and some animals on the CDFG’s Special Animals List. |
| Warren Alquist Act of 2005 (Public Resources Code sections 25000 et seq.) | A CEQA-equivalent process implemented by the Energy Commission. |
| Streambed Alteration (Fish and Game Code sections 1600 et seq.) | Regulates activities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by CDFG in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. Impacts to vegetation and wildlife resulting from disturbances to waterways are also reviewed and regulated during the permitting process. |
| California Native Plant Protection Act of 1977 (Fish and Game Code section 1900 et seq.) | Designates State rare, threatened, and endangered plants. |
| California Desert Native Plants Act of 1981 (Food and Agricultural Code section 80001 et seq. and California Fish and Game Code sections 1925-1926) | Protects non-listed California desert native plants from unlawful harvesting on both public and private lands in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Unless issued a valid permit, wood receipt, tag, and seal by the commissioner or sheriff, harvesting, transporting, selling, or possessing specific desert plants is prohibited. |
| Porter-Cologne Water Quality Control Act | Regulates discharges of waste and fill material to waters of the State, including “isolated” waters and wetlands. |
| **LOCAL** | |
| Riverside County General Plan: Land Use and Multipurpose Open Space Elements of the County General Plan (County of Riverside 2003) | Contains specific policies to preserve the character and function of open space that benefits biological resources. It also contains specific policies and goals for protecting areas of sensitive plant, soils and wildlife habitat and for assuring compatibility between natural areas and development. The RSEP area and most of eastern Riverside County is designated as Open Space Conservation in the General Plan. Although the RSEP is not within one of the 19 area plans contained within the General Plan, it is addressed in the Eastern Riverside County Desert Areas (Non-Area Plan). |

## Cultural Resources

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| Antiquities Act of 1906<br>16 United States Code (USC) 431–433<br>National Historic Preservation Act of 1966 (NHPA) | Establishes criminal penalties for unauthorized destruction or appropriation of "any historic or prehistoric ruin or monument, or any object of antiquity" on federal land; empowers the President to establish historical monuments and landmarks. Establishes a process to identify historic properties, determine effect and consultation to reduce, minimize or avoid effects. |
| Archaeological Resources Protection Act of 1979 (ARPA)<br>16 USC 470aa et seq. | Protects archaeological resources from vandalism and unauthorized collecting on public and Indian lands. |
| Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)<br>25 USC 3001–3013 | Provides for the protection of Native American graves, funerary objects, and "objects of cultural patrimony" on federal land;<br><br>Establishes the procedures for determining ownership for Native American human remains, funerary objects, and other sacred objects under federal jurisdiction. |
| **State** | |
| Public Resources Code (PRC), Section 5097.98(b) and (e) | Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendents (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance. |
| PRC, Sections 5097.99 and 5097.991 | 5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts.<br><br>5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts. |
| Health and Safety Code (HSC), Section 7050.5 | Makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery;<br><br>Requires a project owner to halt construction if human remains are discovered and to contact the county coroner. |
| **Local** | |
| Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.2–19.4 | OS 19.2 requires the review of all proposed development for archaeological sensitivity;<br><br>OS 19.3 Employs procedures to protect the confidentiality and |

| Applicable LORS | Description |
|---|---|
| | prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations.<br><br>OS 19.4 Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources. |
| Riverside County General Plan, Multipurpose Open Space Element (Chapter 5), Open Space Policies OS 19.5–19.7 | OS 19.5 allows the History Division of the Riverside County Regional Park and Open-Space District to evaluate large project proposals for their potential preservation or destruction of historic sites; requires projects to provide feasible mitigation for impacts to historic sites prior to county approval.<br><br>OS 19.6 enforces the California State Historic Building Code so that historic buildings can be preserved and used without posing a hazard to public safety.<br><br>OS 19.7 endorses the allocation of resources and/or tax credits to prioritize retrofit of historic structures. |
| Riverside County General Plan, Exhibit A, CEQA Findings of Fact and Statement of Overriding Considerations,<br>Mitigation Monitoring Program, Measures 4.7.1A, 4.7.1B, and 4.7.1C | Outlines mitigation measures for cultural resources monitoring programs. |

## Facility Design

| Applicable LORS | Description |
|---|---|
| **Federal** | Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards |
| **State** | 2007 (or the latest edition in effect) California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations) |
| **Local** | Riverside County regulations and ordinances |
| **General** | American National Standards Institute (ANSI)<br>American Society of Mechanical Engineers (ASME)<br>American Welding Society (AWS)<br>American Society for Testing and Materials (ASTM) |

## Geology, Paleontology and Minerals

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| Antiquities Act of 1906 (16 United States Code [USC], 431-433 | The proposed RSEP facility site would be partially on private land and partially on land currently administered by the BLM. Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR Part 3], 'objects of antiquity' has been interpreted to include fossils by the Federal Highways Act of 1956, the National Park Service (NPS), the BLM, the Forest Service (USFS), and other Federal agencies. |
| National Environmental Policy Act (NEPA) of 1970 (42 USC 4321, et. seq.) | Established the Council on Environmental Quality (CEQ), which is charged with preserving 'important historic, cultural, and natural aspects of our national heritage'. |
| Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701-1784) | Authorizes the BLM to manage public lands to protect the quality scientific, scenic, historical, archeological, and other values, and to develop 'regulations and plans for the protection of public land areas of critical environmental concern', which include 'important historic, cultural or scenic values'. Also charged with the protection of 'life and safety from natural hazards'. |
| Paleontological Resources Preservation Act (PRPA) (Public Law [PL] 111-011) | Authorizes Departments of Interior and Agriculture Secretaries to manage the protection of paleontological resources on Federal lands. |
| National Historic Preservation Act of 1966 (NHPA) (16 USC 470) | Establishes policies for the 'preservation of the prehistoric and historic resources of the United States', under the direction of the Secretary of the Interior and the BLM. |
| General Mining Law of 1872 | Declares all valuable mineral deposits in lands belonging to the United States to be free and open to exploration and purchase. |
| Mineral Leasing Act of 1920 | Authorizes the leasing of coal, oil & gas, phosphate, sodium and oil shale from public lands in return for payment of a royalty rate on production. |
| Materials Act of July 31, 1947 | Authorizes the sale of certain materials from the public lands including sand, stone, gravel, and common clay. |
| National Environmental Policy Act (NEPA) of 1970 (42 USC 4321, et. seq.) | Established the Council on Environmental Quality (CEQ), which is charged with preserving 'important historic, cultural, and natural aspects of our national heritage'. |

| Applicable LORS | Description |
|---|---|
| **State** | |
| California Building Code (CBC), 2007 | The CBC (2007) includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control). |
| Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), Section 2621–2630 | Mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. Portions of the site and proposed ancillary facilities are located within designated Alquist-Priolo Fault Zones. The proposed site layout places occupied structures outside of the 50-foot setback zone. |
| The Seismic Hazards Mapping Act, PRC Section 2690–2699 | Areas subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches. |
| PRC, Chapter 1.7, Sections 5097.5 and 30244 | Regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites. |
| Warren-Alquist Act, PRC, Sections 25527 and 25550.5(i) | The Warren-Alquist Act requires the Energy Commission to "give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites…" With respect to paleontologic resources, the Energy Commission relies on guidelines from the Society for Vertebrate Paleontology, indicated below. |
| California Environmental Quality Act (CEQA), PRC sections 15000 et seq., Appendix G | Mandates that public and private entities identify the potential impacts on the environment during proposed activities. Appendix G outlines the requirements for compliance with CEQA and provides a definition of significant impacts on a fossil site. |
| Society for Vertebrate Paleontology (SVP), 1995 | The "Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures" is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 by the SVP, a national organization of professional scientists. |

| Applicable LORS | Description |
|---|---|
| **Local** | |
| Riverside County General Plan 2000, Safety Element | Adopts the Uniform Building Code (UBC) (1997), which provides design criteria for buildings and excavations. The UBC is superseded by the CBC (2007). Requires mitigation measures for geologic hazards, including seismic shaking, surface rupture (adopts APEFZ Act), liquefaction, unstable soils and slopes, and flooding. |
| Riverside County General Plan 2000, Multipurpose Open Space Element | Provides for 'preservation of cultural, historical, archaeological, paleontologic, geologic and educational resources'. Also provides a map showing paleontologic sensitivity in the county. |

## Hazardous Materials Management

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.) | Contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III). |
| The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended) | Establishes a nationwide emergency planning and response program, and imposes reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials. |
| The CAA Section on Risk Management Plans (42 USC §112(r) | Requires states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq. |
| 49 CFR 172.800 | Requires that the suppliers of hazardous materials prepare and implement security plans in accordance with U.S. Department of Transportation (DOT) regulations. |
| 49 CFR Part 1572, Subparts A and B | Requires that suppliers of hazardous materials ensure that their hazardous material drivers comply with personnel background security checks. |
| The Clean Water Act (CWA) (40 CFR 112) | Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written spill prevention, control, and countermeasures (SPCC) plan to be prepared for facilities that store oil that could leak into navigable waters. |
| 6 CFR Part 27 | The CFATS (Chemical Facility Anti-Terrorism Standard) regulation of the U.S. Department of Homeland Security (DHS) that requires facilities that use or store certain hazardous materials to submit information to the DHS so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented. |
| **State** | |
| California Health and Safety Code, section 25531 to 25543.4 | The California Accidental Release Program (Cal-ARP) requires the preparation of a Risk Management Plan (RMP) and Off-site Consequence Analysis (OCA) and submittal to the local Certified Unified Program Authority (CUPA) for approval. |

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|---|---|
| Title 8, California Code of Regulations, Section 5189 | Requires facility owners to develop and implement effective safety management plans to ensure that large quantities of hazardous materials are handled safely. While these requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process. |
| Title 8, California Code of Regulations, Section 5189 | Sets forth requirements for design, construction, and operation of the vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes including the American Society for Material Engineering (ASME) Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1, and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia. |
| Process Safety Management:<br>Title 8 CCR Section 5189 | Requires facility owners to develop and implement effective process safety management plans when toxic, reactive, flammable, or explosive chemicals are maintained on site in quantities that exceed regulatory thresholds. |
| California Health and Safety Code, Sections 13240 – 13243.6 | California Propane Storage and Handling Safety Act adopts regulations setting for safety standards for siting and construction of fixed propane storage systems, fire safety compliance requirements, and training requirements |
| California Health and Safety Code, Section 41700 | Requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.” |
| California Safe Drinking Water and Toxic Enforcement Act (Proposition 65) | Prevents certain chemicals that cause cancer and reproductive toxicity from being discharged into sources of drinking water. |
| **LOCAL** | |
| Riverside County Fire Code, Riverside County Code Chapter 8.32: Ordinance No. 787 | Adopts the California Fire Code, 2007 Edition, with some of its appendices, into Riverside County regulations. |

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| Disclosure of Hazardous Materials and the Formulation of Business Emergency Plans: Riverside County Ordinance 651 | Requires disclosure where businesses handle hazardous materials and requires the development of response plans; designates Riverside County Department of Environmental Health as responsible for administration and enforcement of local codes. |

## Land Use

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| California Desert Conservation Area (CDCA) Plan,1980 as Amended; 1999. | The CDCA Plan is a comprehensive, long-range plan for over 12 million acres of public California Desert lands, including the Mojave, Sonoran Desert, and a small portion of the Great Basin, with goals and specific actions for management, use, development, and protection of the lands and their resources. The Plan is administered by the BLM and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. All project sites are located within the CDCA boundaries and all but one site are on public lands, and are, therefore, subject to the CDCA Plan. |
| Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) | NECO is an amendment to the CDCA land use plan and specific management prescriptions for species and habitats on federal lands, providing in particular for the recovery of the desert tortoise; integrating land management plans for conservation of species and habitats among the three federal land managing agencies; and providing a landscape approach to managing desert ecosystems. |
| **State** | |
| Public Resources Code §25529 (Public Access - Warren Alquist Act) | Requires the Energy Commission to impose a condition of certification requiring the project owner to acquire and maintain a public access/use area when a proposed facility would be located in the coastal zone or areas with recreational, scenic, or historic value. It also requires that any facility be set back from the coast or shoreline of any major body of water to permit reasonable public access and to protect scenic and aesthetic values. |
| **Local** | |
| Riverside County General Plan (2003), as amended through December 2008 | The Riverside County General Plan provides policy direction for the entire unincorporated portion of the County and for 19 sectors of the County in the form of Area Plans. A large portion of the eastern desert area of the County, including the project site, is not covered by area plans and thus falls under direction of the countywide policies. |
| Chapter 3 – Land Use Element | This element addresses policies that direct land use and development in the County: policies that apply countywide and those that are unique to a specific region. Countywide policies are applicable to the entire unincorporated area, are contained in the General Plan and reflected on the General Plan Land Use Map. Land use designations are included in this element. |
| -Open Space/Rural (OS-RUR) Land Use Designation | The OS-RUR land use designation applies to remote, privately owned open space areas with limited access and a lack of public services. The designation is intended to ensure that development does not adversely impact the open space and rural character of the surrounding area. |
| -Eastern Riverside County Desert Areas (Non-Area Plan) | The intent of this section of Chapter 3 is to preserve the unique and spectacular open space character of the desert region of eastern Riverside County that is not a part of any Area Plan, and to maintain those existing rural and mineral resource land uses scattered throughout the area. |
| Chapter 5 – Multipurpose Open Space Element | Addresses county policies regarding renewable and non-renewable County resources. Conservation of these natural resources applies to water, agricultural resources, forests, vegetation, mineral, and energy resources. |

| Applicable LORS | Description |
|---|---|
| Riverside County Zoning Ordinance #348, amended through Ord. #348.4647 (August 20, 2009)<br><br>Article XV, §§15.1 and 15.2 Controlled Development Areas (W-2) Zoning District<br><br>Article XVb, §§15.200 and 15.201 Natural Assets (N-A) Zoning District<br><br>Article XVII §18.33 Temporary Use of Land | This title is adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses throughout the unincorporated area of Riverside County; provide economic and social advantages resulting from an orderly planned use of land resources; and encourage and guide development consistent with the Riverside County General Plan.<br><br>This section identifies uses permitted and development standards in the Controlled Development Areas zoning district. The project site is zoned W-2.<br><br>This section identifies uses permitted and development standards in the Natural Assets zoning district. Some of the properties surrounding the project site are zoned N-A.<br><br>Allows the temporary use of land in any zone classification for uses related to the construction of public utilities and other permitted activities for longer than six months. |
| Riverside County Code, Ordinance 457.102 (Building Codes & Fees) | Identifies minimum building standards for all grading, buildings, and structures, or parts thereof, in the unincorporated areas of the County of Riverside, except as excluded under federal and/or state jurisdiction. |
| Riverside County Code, Ordinance 460.151, §18.7 (Merging of Contiguous Parcels) | Establishes criteria and provides a means to merge four or fewer contiguous parcels without reversion to acreage. |
| Riverside County Ordinance 659, as amended through 659.8 (Development Impact Fees) | Establishes criteria and fees required of development projects to allow the County to construct/acquire the needed public facilities to support development and preserve open space, wildlife, and their habitats. |
| Riverside County Ordinance 859, as amended through 859.2 (Water Efficient Landscape Requirements | Incorporates the requirements of the California Water Conservation in Landscaping Act of 2006 and CCR Title 23, Division 2, Chapter 2.7 (§§490-495) |

## Land Use
## LORS that apply only to the North of Desert Center Alternative

| Applicable LORS | Description |
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| Riverside County General Plan (2003), as amended through December 2008<br><br>- Agriculture (AG) Land Use Designation | The Riverside County General Plan provides policy direction for the entire unincorporated portion of the County and for 19 sectors of the County in the form of Area Plans. A large portion of the eastern desert area of the County, including the project site, is not covered by area plans and thus falls under direction of the countywide policies.<br><br>The Agriculture land use designation has been established to help conserve productive agricultural lands within the County. Areas designated for Agriculture generally lack an infrastructure that is supportive of urban development. |
| Riverside County Desert Center Area Plan | The Plan provides a Land Use Plan, statistical summaries, and local policy direction for Desert Center and the surrounding area through 2020. |

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| Riverside County Zoning Ordinance #348, amended through Ord. #348.4647 (August 20, 2009)<br><br>Article XIII, §§13.1 and 13.2 Light Agriculture (A-1) Zoning District | This title is adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses throughout the unincorporated area of Riverside County; provide economic and social advantages resulting from an orderly planned use of land resources; and encourage and guide development consistent with the Riverside County General Plan.<br><br>The A-1 zoning district is primarily intended to designate areas as main resource production zones, classify them for general farming and ranching practices, and assign such uses as the primary emphasis for the areas. Residential and other uses are placed in a position of secondary importance, when compared to the production of food and fiber. |
| Riverside County Code, Ordinance 460.151, §§18.1-18.6 (Reversion to Acreage) | Establishes criteria and provides a means to merge more than four contiguous parcels. |
| Riverside County Code, Ordinance 448 (as amended through 448.A) Airport Operations (2000) | This ordinance establishes airport operating areas and regulates height standards and limits within those areas. |
| Riverside County Code, Ordinance 509 (as amended through 509.2) – Agricultural Preserves | Designates suitable areas of the County of Riverside as agricultural preserves, pursuant to the California Land Conservation Act of 1965 (GC § 51200, et seq.), to be devoted to agricultural and compatible uses. |
| Riverside County Airport Land Use Compatibility Plan (ALUCP); 2004 | The intent of the ALUCP to promote compatibility between airports in Riverside County and the land uses that surround them. It sets compatibility criteria applicable to local agencies, in their preparation or amendment of land use plans and ordinances, and landowners (including special districts, other local government entities, and private parties) in their design of new development. |

## Noise

| Applicable LORS | Description |
|---|---|
| **Federal** (OSHA): 29 U.S.C. § 651 et seq. | Protects workers from the effects of occupational noise exposure. |
| **State** (Cal/OSHA): Cal. Code Regs., tit. 8, §§ 5095–5099 | Protects workers from the effects of occupational noise exposure. |
| **Local**<br>Riverside County General Plan - Noise Element<br><br>Riverside County Noise Ordinance | <br>Establishes acceptable noise levels.<br><br>Limits hours of noisy construction. |

## Power Plant Efficiency

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

## Power Plant Reliability

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) pertain to the reliability of this project.

## Public Health and Safety

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| Clean Air Act section 112 (Title 42, U.S. Code section 7412) | This act requires new sources that emit more than 10 tons per year of any specified Hazardous Air Pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology. |
| **State** | |
| California Health and Safety Code section 25249.5 et seq. (Proposition 65) | These sections establish thresholds of exposure to carcinogenic substances above which Prop 65 exposure warnings are required. |
| California Health and Safety Code section 41700 | This section states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.” |
| California Public Resource Code section 25523(a); Title 20 California Code of Regulations (CCR) section 1752.5, 2300–2309 and Division 2 Chapter 5, Article 1, Appendix B, Part (1); California Clean Air Act, Health and Safety Code section 39650, et seq. | These regulations require a quantitative health risk assessment for new or modified sources, including power plants that emit one or more toxic air contaminants (TACs). |
| **Local** | |
| Mojave Desert Air Quality Management District (MDAQMD) Rule 1320 | Requires a review of new or modified sources of toxic air contaminants and preparation of related risk assessment. A permit would not be issued if the risk were greater than 10 in one million or the hazard index were greater than 1.0. It also requires the use of the best available controls for air toxics (T-BACT). |

## Socioeconomics

| Applicable LORS | Description |
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| **California Education Code, Section 17620** | The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities. |
| **California Government Code, Sections 65996-65997** | Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities. |
| **California Revenue and Taxation Code Section 70-74.7** | Property taxes are not assessed on solar facilities. Assembly Bill 1451 extended the current property tax exclusion for new construction of solar energy systems to January 1, 2017. |

## Soil & Water Resources

| Applicable LORS | Description |
|---|---|
| **Federal LORS** | |
| Title 33, United States Code (U.S.C.), Section 1251 et seq. — Federal Water Pollution Control Act (commonly called the Clean Water Act) | The Clean Water Act (CWA) established a broad national program for protecting water quality and regulating discharges of waste and pollutants into waters of the United States. It provides authority for establishment of water quality standards and waste discharge limits for point source discharges (such as those from industrial facilities, sewage treatment plants, and storm water). The act also prohibits discharges of pollutants without a permit or other authorization and allows authorized states to implement provisions of the act in lieu of the United States Environmental Protection Agency (U.S. EPA). Key CWA provisions include:<br>• Section 401 - Water Quality Certification requirement for federally permitted activities (such as construction) that may result in discharges to surface waters and wetlands.<br>• Section 402 - National Pollutant Discharge Elimination System (NPDES) permit program for point source discharges (including storm water).<br>• Section 404 – Permit program addressing discharges of dredge or fill materials into surface waters and wetlands. This section is implemented by the United States Army Corps of Engineers (U.S. ACE). |
| Title 42, U.S.C., Section 6901, et seq. — Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al) | The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA), established requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The law seeks to protect human health and the environment (including surface and groundwater) from improper management and disposal of waste and associated contaminants. |
| United States Department of the Interior, Bureau of Land Management, Northern and Eastern Colorado Desert Coordinated Management Plan (approved December | The Northern and Eastern Colorado Desert Coordinated Management Plan establishes standards, guidelines, and special area designations to address and help resolve |

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| 2002) | issues of resource demands, use conflicts, and environmental quality on public lands in the area. BLM's multiple use mandate requires the plan to address a very broad spectrum of resources and uses. The plan also incorporates provisions and designations established by the 1994 California Desert Protection Act. |
| **State LORS** | |
| California Constitution, Article 10, Section 2, and California Water Code (CWC), Section 100 | These laws require that the water resources of the state be put to beneficial use to the fullest extent possible and that the waste, unreasonable use or unreasonable method of use of water be prevented. The laws also require that conservation of such water be exercised with a view to the reasonable and beneficial use of the water in the interest of the people and for the public welfare. |
| CWC, Sections 4999 - 5009 | Requires groundwater users in Counties of Riverside, San Bernardino, Los Angeles, and Ventura to report groundwater extractions of 25 acre-feet per year or more to the State Water Resources Control Board (SWRCB). |
| CWC, Division 7, Section 13000 et seq. — Porter-Cologne Water Quality Control Act | The Porter-Cologne Water Quality Control Act (Porter-Cologne) was established to protect the water quality and beneficial uses of waters of the state. The law gives broad authority to the SWRCB and nine Regional Water Quality Control Boards (RWQCBs) to establish water quality standards and discharge prohibitions, issue waste discharge requirements, and implement provisions of the federal Clean Water Act. Under Porter-Cologne, "waters of the state" include both surface and groundwaters. |
| CWC, Sections 13240, 13241, 13242, 13243, & Water Quality Control Plan for the Colorado River Basin – Region 7 (Basin Plan) | The Basin Plan establishes the beneficial use designations and water quality objectives for surface water and groundwater in the Colorado River Basin Region. It also describes implementation plans and measures necessary to achieve standards and ensure compliance with both regional and statewide water quality plans and policies; and acts as the comprehensive water quality planning document for the Colorado River Basin Region. |
| CWC, Section 13260 | Requires persons proposing to discharge waste that could impact the quality of waters of the state to file a report of waste discharge with the appropriate RWQCB. |
| CWC, Section 13550 | This section of Porter-Cologne establishes that the use of potable domestic water for non- |

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| | potable uses (including industrial use) is a waste or an unreasonable use of the water if recycled water is available and meets the following conditions: the quality and quantity of the reclaimed water are suitable for the use; the cost is reasonable; the use is not detrimental to public health; and the use will not impact downstream users or biological resources. |
| CWC, Sections 231 and 13700 et seq. | Section 231 and Division 7, Chapter 10 of the Water Code establish the authority for development and implementation of minimum water well standards for the state. Minimum standards for the construction and destruction of water wells are established in Bulletins 74-81 and 74-90, California Well Standards, by the California Department of Water Resources (DWR). A well completion report must be filed with DWR for each well that is constructed, reworked, or destroyed. |
| Title 17, California Code of Regulations (CCR), Division 1, Chapter 5 | This chapter of the CCR addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines. |
| Title 22 , CCR, Division 4 — Environmental Health | Title 22, Division 4 is implemented by the California Department of Public Health (CDPH) (formerly known as the California Department of Health Services). The regulations address requirements for drinking water standards, water treatment and operator certification, and water recycling criteria. Section 64431 establishes the public drinking water maximum contaminant levels (MCLs), including an MCL for nitrate of 45 mg/L (equivalent to 10 mg/L for nitrate as nitrogen). Section 64449 establishes secondary drinking water standards, including a recommended total dissolved solids (TDS) level of 500 mg/l, with an upper limit of 1,000 mg/l, and a short term level of 1,500 mg/l. Article 3 also requires monitoring of potable water wells defined as non-transient, non-community water systems (serving 25 people of more for more than six months). |
| Title 23, CCR, Division 3 — SWRCB and RWQCBs | These regulations implement provisions of the CWC and the Porter-Cologne Water Quality Control Act. Among other things, the regulations address water rights, implementation of the federal Clean Water Act, discharges to land, underground tanks, and waste discharge requirements/NPDES permits. |

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| Title 27, CCR, Division 2, Solid Waste, Subdivision 1, Consolidated Regulations for Treatment, Storage, Processing or Disposal of Solid Waste. | These regulations address both the California Integrated Waste Management Board (CIWMB) and SWRCB requirements for solid waste/wastewater management units. |
| SWRCB Water Quality Order No. 2009-0009-DWQ | The SWRCB regulates storm water discharges associated with construction projects to protect water quality throughout the state. Effective July 1, 2010, Order No. 2009-0009-DWQ will supersede Order 99-08-DWQ and implement NPDES General Permit No. CAS000002 for storm water discharges associated with construction activity affecting areas greater than or equal to one acre. Those subject to the order can qualify for the permit if they meet the criteria, prepare and implement an acceptable Storm Water Pollution Prevention Plan (SWPPP) and other assessments as necessary, and file with the SWRCB all necessary Permit Registration Documents [including a Notice of Intent (NOI)] prior to beginning construction. |
| Warren-Alquist Act, Public Resources Code, Section 25500 et seq. | This law gives the California Energy Commission authority to certify the construction and operation of thermal electric power plants 50 megawatts (MW) or larger. The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies, and federal agencies to the extent permitted by federal law (Pub. Resources Code, section 25500). The Energy Commission must review power plant applications for certification to assess potential environmental and public health and safety impacts, potential measures to mitigate those impacts (Pub. Resources Code, section 25519), and compliance with applicable governmental laws and standards [Pub. Resources Code, section 25523(d)]. |
| **Local LORS** | |
| Title 8, Riverside County Code, Chapter 8.16 – Blowing Sand Control Regulations, Section 8.16.010 et seq. | These regulations require implementation of wind erosion controls and protections during excavation and ground disturbance on properties with sand or sandy loam soil. |
| Title 8, Riverside County Code, Chapter 8.124 – Sewage Discharges, Section 8.124.010 et seq. | This code section establishes the requirements and standards for the design, installation, and maintenance of onsite wastewater treatment systems (OWTS), including septic tanks and leach lines. CWC section 13282 allows RWQCBs to authorize local public agencies to issue permits and regulate OWTS. The |

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| | Riverside County Department of Environmental Health implements the County Code OWTS provisions. |
| Title 13, Riverside County Code, Chapter 13.20 – Water Wells (section 13.20.010 et seq.) | These regulations establish the minimum well standards and permitting requirements for the construction, operation, and destruction of ground water wells within Riverside County. Wells subject to the regulations include individual domestic water wells, community water supply wells, agriculture wells, exploration holes, and monitoring wells. |
| Title 15, Riverside County Code, Buildings and Construction, Chapters 15.04 (General Provisions, Administration and Enforcement), 15.12 (Uniform Building Code) and 15.24 (Uniform Plumbing Code). | These chapters of the County Code set forth building, grading, erosion/sediment control, storm water management, and septic system plumbing requirements for all construction within Riverside County, unless otherwise specifically exempted or excluded. |
| **State Policies and Guidance** | |
| State Water Resources Control Board Resolution No. 68-16 | The "Antidegradation Policy" mandates that: 1) existing high quality waters of the State are maintained until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonable affect present and anticipated beneficial uses, and will not result in waste quality less than adopted policies; and 2) requires that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters, must meet WDRs which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained. |
| **SWRCB Resolution No. 75-58 —** Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted June 19, 1975). | This SWRCB policy specifically addresses the use of inland waters for power plant cooling. The policy states that fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. The policy establishes a general hierarchy for cooling water whereby the lowest quality water reasonably available is to be utilized for evaporative cooling processes. It also includes cooling water discharge prohibitions. |

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| SWRCB Resolution No. 88-63 —Sources of Drinking Water Policy | This policy states that all surface and groundwaters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply, and should be designated as such by the RWQCBs, with the exception of certain waters (such as contaminated sources or process wastewaters). |
| State Water Resources Control Board Resolution No. 2005-0006 | Adopts the concept of sustainability as a core value for State Water Board programs and directs its incorporation in all future policies, guidelines, and regulatory actions. |
| State Water Resources Control Board Resolution No. 2008-0030 | Requires sustainable water resources management such as low impact development (LID) and climate change considerations, in all future policies, guidelines, and regulatory actions. Directs Regional Water Boards to "aggressively promote measures such as recycled water, conservation and LID Best Management Practices where appropriate and work with Dischargers to ensure proposed compliance documents include appropriate, sustainable water management strategies." |
| The 2003 California Energy Commission *Integrated Energy Policy Report (IEPR)* | The *2003 IEPR* was developed and adopted pursuant to Public Resources Code sections 25301 and 25302. It includes a water and wastewater policy stating that the Energy Commission will approve the use of fresh water for cooling purposes by power plants it licenses only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound." In addition, the policy states that the Energy Commission will also require that zero-liquid discharge technologies be used to manage project wastewater unless such technologies are shown to be "environmentally undesirable" or "economically unsound." |

## Traffic and Transportation

| Applicable LORS | Description |
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| **Federal** | |
| Code of Federal Regulations, Title14 Aeronautics and Space, Part 77 Objects Affecting Navigable Airspace (14 CFR 77/FAR Part 77) | This regulation establishes standards for determining physical obstructions to navigable airspace; sets noticing and hearing requirements; and provides for aeronautical studies to determine the effect of physical obstructions on the safe and efficient use of airspace. |
| 49 CFR, Subtitle B | Includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways. |
| **State** | |
| California Vehicle Code (CVC), division 2, chapter 2.5; div. 6, chap. 7; div. 13, chap. 5; div. 14.1, chap. 1 & 2; div. 14.8; div. 15 | Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. |
| California Streets and Highway Code, division 1 & 2, chapter 3 & chapter 5.5 | Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits. |
| California Street and Highway Code §§670-695 | Includes permit provisions from California Department of Transportation (Caltrans) including but not limited to permits for roadway encroachment during truck transportation and delivery and permits for any load that exceeds Caltrans weight, length, or width standards for public roadways. |
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| Government Code §§65940 and 65944 | Requires identification of military installations within 1,000 feet of the project site, low-level flight paths, special use airspace, and urbanized areas in the project area, and requires consultation among the project applicant, public agency, and the affected military branch to reduce the potential for impacts to military operations. |
| **Local** | |
| Riverside County Ordinance 461 | Provides road improvement standards and specifications. |
| Riverside County General Plan Transportation Element | Specifies that all County maintained roads and conventional state highways shall operate at a Level of Service (LOS) C or better. |
| Riverside County Code, Ordinance 448 (as amended through 448.A) Airport Operations (2000) | This ordinance establishes airport operating areas and regulates height standards and limits within those areas.<br><br>(Applies only to North of Desert Center Alternative) |

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| Riverside County Congestion Management Plan (CMP) | Specifies that all CMP roadways shall operate at a LOS E or better. |
| Riverside County Airport Land Use Compatibility Plan (ALUCP); 2004 | The intent of the ALUCP to promote compatibility between airports in Riverside County and the land uses that surround them. It sets compatibility criteria applicable to local agencies, in their preparation or amendment of land use plans and ordinances, and landowners (including special districts, other local government entities, and private parties) in their design of new development. |
| San Bernardino County Code, Title 5, Division 1, Highway Permit | Addresses permitting requirements for oversize/overweight vehicles. |
| San Bernardino Association of Governments CMP | Specifies that all CMP roadways shall operate at a LOS E or better. |

## Transmission Line Safety and Nuisance

| Applicable LORS | Description |
|---|---|
| **Aviation Safety** | |
| **Federal** | |
| Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space" | Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards. |
| FAA Advisory Circular No. 70/7460-1G, "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space" | Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard. |
| FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting" | Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR. |
| **Interference with Radio Frequency Communication** | |
| **Federal** | |
| Title 47, CFR, section 15.2524, Federal Communications Commission (FCC) | Prohibits operation of devices that can interfere with radio-frequency communication. |
| **State** | |
| California Public Utilities Commission (CPUC) General Order 52 (GO-52 ) | Governs the construction and operation of power and communications lines to prevent or mitigate interference. |
| **Audible Noise** | |
| **Local** | |
| Riverside County General Plan, Noise Element | References the county's Ordinance Code for noise limits. |
| Riverside County Noise Ordinance | Establishes performance standards for planned residential or other noise-sensitive land uses. |
| **Hazardous and Nuisance Shocks** | |
| **State** | |
| CPUC GO-95, "Rules for Overhead Electric Line Construction" | Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements. |
| Title 8, California Code of Regulations (CCR) section 2700 et seq. "High Voltage Safety Orders" | Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment. |
| National Electrical Safety Code | Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances. |

| Applicable LORS | Description |
|---|---|
| **Industry Standards** | |
| Institute of Electrical and Electronics Engineers (IEEE) 1119, “IEEE Guide for Fence Safety Clearances in Electric-Supply Stations” | Specifies the guidelines for grounding-related practices within the right-of-way and substations. |
| **Electric and Magnetic Fields** | |
| **State** | |
| GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California” | Specifies application and noticing requirements for new line construction including EMF reduction. |
| CPUC Decision 93-11-013 | Specifies CPUC requirements for reducing power frequency electric and magnetic fields. |
| **Industry Standards** | |
| American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines | Specifies standard procedures for measuring electric and magnetic fields from an operating electric line. |
| **Fire Hazards** | |
| **State** | |
| 14 CCR sections 1250-1258, “Fire Prevention Standards for Electric Utilities” | Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply. |

**Transmission System Engineering**

| Applicable LORS | Description |
|---|---|
| The North American Electric Reliability Corporation (NERC) | North American Reliability Council (NERC) Reliability Standards for the Bulk Electric Systems of North America provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability Standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Standards, certain aspects of the NERC/WECC Standards are either more stringent or more specific than the NERC Standards for Transmission System Contingency Performance. The NERC Reliability Standards apply not only to interconnected system operation but also to individual service areas (NERC 2006). |
| Western Electricity Coordinating Council's (WECC) | The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, "NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table" and on Section I.D, "NERC and WECC Standards for Voltage Support and Reactive Power". These standards require that the results of power |

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| | flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2006). |
| California Public Utilities Commission (CPUC) General Order 95 (GO-95*), Rules for Overhead Electric Line Construction* | Specifies uniform requirements for the construction of overhead electric lines. Compliance with this order ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of overhead electric lines, and for the safety of the general public. |
| CPUC General Order 128 (GO-128), *Rules for Underground Electric Line Construction* | Establishes uniform requirements for the construction of underground electric lines. Compliance with this order also ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of underground electric lines, and for the safety of the general public. |
| National Electric Safety Code 1999 | Provides electrical, mechanical, civil, and structural requirements for overhead electric line construction and operation. |
| California Independent System Operator (CAISO) | California ISO Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The California ISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar |

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| | to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The California ISO Standards apply to all participating transmission owners interconnecting to the California ISO controlled grid. They also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the California ISO (California ISO 2002a).<br><br>California ISO/FERC Electric Tariff provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the “Need” for the proposed project where it will promote economic efficiency or maintain system reliability. The California ISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the California ISO grid (California ISO 2007a). |

## Visual Resources

| LORS Source | LORS Policy and Strategy Descriptions | Consistency Determination | Basis of Determination |
|---|---|---|---|
| **Federal** | | | |
| **BLM** | | | |
| The California Desert Conservation Area(CDCA) Plan | Multiple-Use Class M (Moderate Use) is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety or present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause. | YES | The federal land that the RESP would occupy is designated as Multiple Use Class M in the CDCA Plan. The CDCA Plan indicates that solar electric generation plants may be allowed in Class M areas after NEPA requirements are met. |
| **State** | | | |
| **Department of Transportation** | | | |
| California Scenic Highway Program and System (California Streets and Highways Code, Division 1, Chapter 2, Article 2.5, Section 260 et seq.) | Protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. | NO | The RSEP solar receiver tower would be a substantial visual intrusion in the otherwise natural landscape viewed from State Route 62. The more pristine the natural landscape and the less affected by intrusions, the more likely an eligible highway that is nominated for designation will qualify as scenic. The RESP could jeopardize the potential for State Route 62 to be designated as a State Scenic Highway |
| **Local** | | | |
| **Riverside County** | | | |
| Riverside County General Plan (2008), Land Use Element Policy LU 6.4 | Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting | NO | The RSEP solar receiver tower would be a visually dominant and highly intrusive |

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| | them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic. | | structure in an otherwise mostly natural landscape. The brightness of the solar receiver atop the tower would attract attention. |
| Riverside County General Plan, Land Use Element Policy LU 8.1 | Provide for permanent preservation of open space lands that contain important natural resources, hazards, water features, watercourses, and scenic and recreational values. | YES | The Riverside County General Plan does not specifically identify the RSEP site as containing important scenic values. |
| Riverside County General Plan, Land Use Element Policy LU 13.1 | Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public. | NO | The landscape setting of the RSEP scenic vistas of desert and distant mountains. The RSEP would be a visually dominant and highly intrusive feature of industrial character in the otherwise predominantly natural landscape. |
| Riverside County General Plan, Land Use Element Policy LU 13.3 | Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment. | NO | The RSEP solar receiver tower would be a substantial visual intrusion in the otherwise natural landscape viewed from State Route 62 and is not compatible with the scenic values of the surrounding setting. The RSEP could jeopardize the potential for State Route 62 to be designated as a State Scenic Highway |
| Riverside County General Plan, Land Use Element Policy LU 13.4 | Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways. | YES | The project would be set back a minimum of 50 feet from SR 62. |
| Riverside County General Plan, Land Use Element Policy LU 13.5 | Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground. | NO | According to the AFC, power for construction of the project will come from extending an existing overhead 12-kV distribution line west along the south shoulder of State Route 62 about 1 mile |

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| | | | into the RSEP site.<br><br>The proposed generation tie-line would be visible from State Route 62.<br><br>Under the SR 62/Rice Valley Road Generation Tie Line Alternative, the tie-line would be sited adjacent to the immediate foreground of State Route 62. |
| Riverside County General Plan, Land Use Element Policy LU 13.7 | Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible. | YES | Signage for the RSEP would be the minimum necessary for identification and would be designed to blend with the environment. |
| Riverside County General Plan, Land Use Element Policy LU 13.8 | Avoid the blocking of public views by solid walls. | YES | The RSEP does not include solid walls that would block public views. |
| Riverside County General Plan, Land Use Element Policy LU 24.8 | Require that industrial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area. | NO | The landscape setting of the RESP has a mostly natural character. The RESP would be a visually dominant and highly intrusive feature that would degrade the scenic qualities of its surroundings. |
| Riverside County General Plan, Circulation Element Policy LU 19.1 | Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans Scenic Highways Plan. | NO | The RSEP would represent a substantial visual intrusion into the otherwise natural landscape viewed from State Route 62. The high level of scenic intactness of this portion of the eligible scenic highway makes its view corridor exceptional. The RSEP could jeopardize the potential for State |

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| | | | Route 62 to be designated as a State Scenic Highway |
| Riverside County General Plan, Multipurpose Open Space Element Policy LU 21.1 | Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County. | NO | The RSEP would be a visually dominant and highly intrusive feature in a highly intact, scenic natural landscape. The project would dominate a large proportion of views of the Rice Valley as seen from SR 62. |
| Riverside County General Plan, Multipurpose Open Space Element Policy LU 22.1 | Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses. | N/A | SR 62 is not a designated scenic highway. However, the RSEP has the potential to jeopardize designation of this eligible state scenic highway. |
| Riverside County General Plan, Multipurpose Open Space Element Policy LU 22.4 | Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan, when it is necessary to preserve unique or special visual features. | N/A | SR 62 is not a designated scenic highway.<br>However, if SR 62 were to be nominated by the County for State scenic highway status, due to the physical nature of the RSEP site and surrounding area it would not be possible to establish a scenic easement that would effectively avoid the visual impact of the project on the highway corridor. |
| Riverside County General Plan, Multipurpose Open Space Element Policy LU 22.5 | Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors. | YES | The RSEP site is primarily flat. Substantial grading would not be required in order to construct or operate the project. |
| Riverside County Ordinance 348 Land Use Ordinance Section 15.2 a | One-family residences shall not exceed 40 feet in height. No other building or structure shall exceed 50 feet in height, unless a greater height is approved pursuant to Section 18.34 of this ordinance. In no event, however, shall a building exceed 75 feet in height or any other structure exceed 105 feet in height, unless a variance is | NO | The RSEP solar receiver tower would be 653 feet in height, six times higher than the maximum allowed without a variance. |

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| | approved pursuant to Section 18.27 of this ordinance. | | |
| **San Bernardino County** | | | |
| San Bernardino County General Plan (2007), Open Space Element Goal OS 5. | The County will maintain and enhance the visual character of scenic routes in the County. | NO | SR 62 in the project viewshed is a designated County scenic route under Policy OS 5.3, as well as an eligible state scenic highway. The project would not maintain or enhance the visual character of the route's visual corridor. |
| Policy OS 5.2 | Development along scenic corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present. | NO | The present visual analysis concludes that the proposed project is not compatible with the scenic qualities present in the corridor. |
| Policy OS 5.3 | The County desires to retain the scenic character of visually important roadways throughout the County. A "scenic route" is a roadway that has scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. Therefore, the County designates the following routes as scenic highways and applies all applicable policies to development on these routes (see Figures 2-4A through 2-4C of the Circulation and Infrastructure Background Report):<br><br>**DESERT REGION:**<br><br>p. State Route 62 (Twentynine Palms Highway) . . . from the Riverside County line northeast to state line. | NO | The proposed project would introduce the bright glare of the solar receiver into the view of the Rice Valley as seen from SR 62.<br><br>The preponderance of SR 62 within the project viewshed would lie in the San Bernardino County portion of the highway. |

## Waste Management

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| Title 42, United States Code (U.S.C.), §6901, et seq.<br><br>Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al.) | The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) et al., establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation and delegation to states, enforcement provisions, and responsibilities, as well as research, training, and grant funding provisions.<br><br>RCRA Subtitle C establishes provisions for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing:<br><br>• Generator record keeping practices that identify quantities of hazardous wastes generated and their disposition;<br>• Waste labeling practices and use of appropriate containers;<br>• Use of a manifest when transporting wastes;<br>• Submission of periodic reports to the United States Environmental Protection Agency (U.S. EPA) or other authorized agency; and<br>• Corrective action to remediate releases of hazardous waste and contamination associated with RCRA-regulated facilities.<br><br>RCRA Subtitle D establishes provisions for the design and operation of solid waste landfills.<br><br>RCRA is administered at the federal level by U.S. EPA and its 10 regional offices. The Pacific Southwest regional office (Region 9) implements U.S. EPA programs in California, Nevada, Arizona, and Hawaii. |

| Applicable LORS | Description |
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| Title 42, U.S.C., §9601, et seq.<br><br>Comprehensive Environmental Response, Compensation and Liability Act | The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as *Superfund*, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things, the statute addresses:<br>• Reporting requirements for releases of hazardous substances;<br>• Requirements for remedial action at closed or abandoned hazardous waste sites, and brownfields;<br>• Liability of persons responsible for releases of hazardous substances or waste; and<br>• Requirements for property owners/potential buyers to conduct "all appropriate inquiries" into previous ownership and uses of the property to 1) determine if hazardous substances have been or may have been released at the site, and 2) establish that the owner/buyer did not cause or contribute to the release. A Phase I Environmental Site Assessment is commonly used to satisfy CERCLA "all appropriate inquiries" requirements. |
| Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes | These regulations were established by U.S. EPA to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes.<br>• Part 257 addresses the criteria for classification of solid waste disposal facilities and practices.<br>• Part 258 addresses the criteria for municipal solid waste landfills.<br>• Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (i.e., batteries, mercury-containing equipment, and lamps).<br>U.S. EPA implements the regulations at the federal level. However, California is an RCRA-authorized state, so most of the solid and hazardous waste regulations are implemented by state agencies and authorized local agencies in lieu of U.S. EPA. |
| Title 49, CFR, Parts 172 and 173.<br><br>Hazardous Materials Regulations | These regulations address the United States Department of Transportation (DOT) established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, section 262.20. |
| Federal CWA, 33 USC | The Clean Water Act controls discharge of wastewater to the |

| Applicable LORS | Description |
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| § 1251 *et seq.* | surface waters of the U.S. |
| Title 40 CFR Section 112 | This establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974.<br><br>Subpart B - The Spill Prevention, Control and Countermeasures (SPCC) Plan includes procedures, methods, and equipment at the facility to prevent discharges of petroleum from reaching navigable waters. |
| **State** | |
| California Health and Safety Code (HSC), Chapter 6.5, §25100, et seq.<br><br>Hazardous Waste Control Act of 1972, as amended | This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements.<br><br>The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified Program Agencies (CUPAs) implement some elements of the law at the local level. |
| Title 22, California Code of Regulations (CCR),<br>Division 4.5.<br><br>Environmental Health Standards for the Management of Hazardous Waste | These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers; prepare manifests before transporting the waste off site; and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters.<br><br>The standards addressed by Title 22, CCR include:<br><br>• Identification and Listing of Hazardous Waste (Chapter 11, §66261.1, et seq.).<br>• Standards Applicable to Generator of Hazardous Waste (Chapter 12, §66262.10, et seq.).<br>• Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §66263.10, et seq.).<br>• Standards for Universal Waste Management (Chapter 23, §66273.1, et seq.). |

| Applicable LORS | Description |
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| | • Standards for the Management of Used Oil (Chapter 29, §66279.1, et seq.).<br>• Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §67450.1, et seq.).<br><br>The Title 22 regulations are established and enforced at the state level by DTSC. Some generator and waste treatment standards are also enforced at the local level by CUPAs. |
| HSC, Chapter 6.11 §§25404 – 25404.9<br><br>Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) | The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs listed below.<br><br>• Aboveground Petroleum Storage Act requirements for Spill Prevention, Control, and Countermeasure (SPCC) Plans.<br>• Hazardous Materials Release and Response Plans and Inventories (Business Plans).<br>• California Accidental Release Prevention (CalARP) Program.<br>• Hazardous Materials Management Plan / Hazardous Materials Inventory Statements.<br>• Hazardous Waste Generator / Tiered Permitting Program.<br>• Underground Storage Tank Program.<br><br>The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as CUPAs. The DTSC's Calexico Field Office is the CUPA for the RSEP.<br><br>Note: The Waste Management analysis only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. |
| Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §15100, et seq.<br><br>Unified Hazardous Waste and Hazardous Materials Management Regulatory Program | While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses.<br><br>• Article 9 – Unified Program Standardized Forms and Formats (§§ 15400–15410).<br>• Article 10 – Business Reporting to CUPAs (§§15600–15620). |
| Public Resources Code, Division 30, §40000, et seq.<br><br>California Integrated Waste Management Act of 1989 | The California Integrated Waste Management Act (CIWMA) establishes mandates and standards for management of solid waste in California. The law addresses solid waste landfill diversion requirements; establishes the preferred waste management hierarchy (source reduction first, then recycling and reuse, and treatment and disposal last); sets standards for design and construction of municipal landfills; and addresses programs for county waste management plans and local implementation of solid |

| Applicable LORS | Description |
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| | waste requirements. |
| Title 14, CCR, Division 7, §17200, et seq.<br><br>California Integrated Waste Management Board | These regulations implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions.<br>• Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal.<br>• Chapter 3.5 – Standards for Handling and Disposal of Asbestos Containing Waste.<br>• Chapter 7 – Special Waste Standards.<br>• Chapter 8 – Used Oil Recycling Program.<br>• Chapter 8.2 – Electronic Waste Recovery and Recycling. |
| HSC, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq.<br><br>Hazardous Waste Source Reduction and Management Review Act of 1989 | This law was enacted to expand the state's hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (approximately 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a 4-year cycle, with a summary progress report due to DTSC every fourth year. |
| Title 22, CCR, §67100.1 et seq.<br><br>Hazardous Waste Source Reduction and Management Review | These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the act. |
| Title 23, CCR Division 3, Chapters 16 and 18 | These regulations relate to hazardous material storage and petroleum UST cleanup, as well as hazardous waste generator permitting, handling, and storage. The DTSC Riverside County CUPA is responsible for local enforcement. |
| **Local** | |
| County of Riverside General Plan, Safety Element: Policy S 6.1 | Describes the County's policies and siting criteria identified in the County of Riverside Hazardous Waste Management Plan including coordination of hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority |
| Riverside County Code Title 8 Chapters 8.60, 8.84, and 8.132, Health and Safety | Establishes requirements for the use, generation, storage, and disposal of hazardous and non-hazardous materials and wastes within the County. |

## Worker Safety and Fire Protection

| Applicable LORS | Description |
|---|---|
| **Federal** | |
| Title 29 U.S. Code (USC) section 651 et seq (Occupational Safety and Health Act of 1970) | This act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651). |
| Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations) | These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. |
| 29 CFR sections 1952.170 to 1952.175 | These sections provide federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 CFR sections 1910.1 to 1910.1500. |
| **State** | |
| Title 8 California Code of Regulations (Cal Code Regs.) all applicable sections (Cal/OSHA regulations) | These sections require that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling. |
| 24 Cal Code Regs. section 3, et seq. | This section incorporates the current addition of the International Building Code. |
| Health and Safety Code section 25500, et seq. | This section presents Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility. |
| Health and Safety Code sections 25500 to 25541 | These sections require a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility. |
| **Local (or locally enforced** | |
| Riverside County Ordinance 457 | Adopts specific building, mechanical, plumbing, and electrical codes from sources such as the California Building Standards Commission with county-specific modifications. |
| Riverside County Ordinance 787 | Adopts the 2007 edition of the California Fire Code and portions of the 2007 edition of the California Building Code with county-specific modifications. |
| Riverside County Ordinance 615 | Establishes requirements for the use, generation, storage and disposal of hazardous materials within the County. |
| Riverside County Dept. of Environmental Health, Hazardous Materials Releases | Adopts State requirements and guidelines to govern hazardous materials release response plans and inventories. |
| Chapter 22 of the 2007 California Fire Code | This section of the CFC addresses requirement for Motor Fuel-Dispensing Facilities and Repair Garages. It has been adopted by Riverside County and will apply to the fuel depot at the site. |
| NFPA 30a | This is the NFPA code for Motor Fuel Dispensing Facilities and Repair Garages (2008Edition) and is the industry standard for fuel depots. |

Docket Number: 09-AFC-10 Date: October 29, 2010

Project Name: Rice Solar Energy Project

## TENTATIVE EXHIBIT LIST

| Exhibit | Brief Description | Stipulation | Offered | Admitted | Refused | CEC Use Only |
|---|---|---|---|---|---|---|
| **Applicant's Exhibits** | | | | | | |
| **Exhibit 1** | **Application for Certification Volumes I and II,** dated October 2009, and docketed on October 21, 2009. | | | x | | |
| **Exhibit 2** | **Rice Solar Energy, LLC's Data Adequacy Supplement**, dated November 2009, and docketed on November 20, 2009. | | | x | | |
| **Exhibit 3** | **Plan of Development Completion Letter**, dated February 9, 2010, and docketed on February 18, 2010. | | | x | | |
| **Exhibit 4** | **Rice Solar Energy, LLC's Response to CEC Staff Data Requests 1 to 168**, dated March 2010, and docketed March 9, 2010. | | | x | | |
| **Exhibit 5** | **Rice Solar Energy, LLC's Response to CEC Staff Water Resources Data Requests 130, 139 - 141, 143 - 144**, dated March 2010 and docketed on March 16, 2010. | | | x | | |
| **Exhibit 6** | **Rice Solar Energy, LLC's Application for Authority to Construct General Form**, dated March 15, 2010, and docketed on March 26, 2010. | | | x | | |

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| **Exhibit 7** | **Rice Solar Energy, LLC's Draft Biological Assessment in Response to CEC Staff Data Requests 45, 47, and 48**, dated March 2010, and docketed April 1, 2010. | | | **x** | | |
| **Exhibit 8** | **Rice Solar Energy, LLC's Response to CEC Workshop Queries 9 & 10**, dated April 2010 and docketed on April 7, 2010. | | | **x** | | |
| **Exhibit 9** | **Rice Solar Energy, LLC's Response to CEC Staff Workshop Queries 4, 6 - 8 & 11**, dated April 2010, and docketed on April 12, 2010. | | | **x** | | |
| **Exhibit 10** | **Rice Solar Energy, LLC's Response to CEC Staff Workshop Queries 1 - 3**, dated April 2010, and docketed on April 19, 2010. | | | **x** | | |
| **Exhibit 11** | **Rice Solar Energy, LLC's Application for Authority to Construct & Permit to Operate**, dated April 21, 2010 and docketed on April 21, 2010. | | | **x** | | |
| **Exhibit 12** | **Rice Solar Energy, LLC's Response to CEC Staff Biological Resources, Data Requests 49-51, 54, 56, 58, 75 & Response to CEC Staff Soil & Water Resources Data Request 121**, dated April 2010 and docketed on April 27, 2010. | | | **x** | | |
| **Exhibit 13** | **Riverside County Planning Department Consistency Letter**, dated and docketed on April 27, 2010. | | | **x** | | |
| **Exhibit 14** | **Rice Solar Energy, LLC's Response to CEC Staff Workshop Query 12**, dated April 2010, and docketed on April 29, 2010. | | | **x** | | |
| **Exhibit 15** | **Rice Solar Energy, LLC's Response to CEC Data Request 61**, dated May 2010, and docketed on May 5, 2010. | | | **x** | | |
| **Exhibit 16** | **Rice Solar Energy, LLC's Response to CEC Staff Data Request 46**, dated May 2010, and docketed on May 7, 2010. | | | **x** | | |

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| **Exhibit 17** | **Rice Solar Energy, LLC's Application for Authority to Construct - Wet Surface Air Cooler**, dated May 7, 2010, and docketed on May 7, 2010. | | | **x** | | |
| **Exhibit 18** | **Rice Solar Energy, LLC's Mojave Fringe-toed Lizard Habitat Assessment**, dated May 2010, and docketed on May 14, 2010. | | | **x** | | |
| **Exhibit 19** | **Rice Solar Energy, LLC's Interim Report on Avian Point Count & Burrowing Owl Phase 2 Surveys**, dated May 9, 2010, and docketed on May 14, 2010. | | | **x** | | |
| **Exhibit 20** | **Archival Search on Rice Army Airfield and Camp Rice**, dated May 14, 2010, and docketed on May 27, 2010. | | | **x** | | |
| **Exhibit 21** | **Email from U.S. Army Corps of Engineers to the U.S. Environmental Protection Agency Documenting Non-Jurisdictional Status of RSEP**, dated May 27, 2010, and docketed on June 9, 2010. | | | **x** | | |
| **Exhibit 22** | **Rice Solar Energy, LLC's System Impact Report**, dated May 14, 2010, and docketed on June 14, 2010. | | | **x** | | |
| **Exhibit 23** | **Rice Solar Energy, LLC's Response to CEC Staff Workshop Query 13**, dated June 2010, and docketed on June 14, 2010. | | | **x** | | |
| **Exhibit 24** | **Mojave Desert Air Quality Management District's Preliminary Determination of Compliance**, dated June 10, 2010, and docketed on June 15, 2010. | | | **x** | | |
| **Exhibit 25** | **Rice Solar Energy, LLC's Project Letter Re: Federal Aviation Administration Process**, dated June 10, 2010 and docketed on June 15, 2010. | | | **x** | | |

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| **Exhibit 26** | **Rice Solar Energy, LLC's Supplementary Informational Item 1**, dated June 16, 2010, and docketed on June 16, 2010. | | | **x** | | |
| **Exhibit 27** | **Rice Solar Energy, LLC's Supplemental Information Item 2 (Materials for Air Quality & Public Health)**, dated June 2010, and docketed June 17, 2010. | | | **x** | | |
| **Exhibit 28** | **Rice Solar Energy, LLC's Supplementary Information Item 3 - Draft Historic Property Treatment Plan**, dated June 2010, and docketed June 18, 2010. | | | **x** | | |
| **Exhibit 29** | **Supplementary Information Item 4 - Preliminary Results of the Golden Eagle Aerial Surveys**, dated June 13, 2010, and docketed June 23, 2010. | | | **x** | | |
| **Exhibit 30** | **Rice Solar Energy, LLC's Letter Regarding Riverside County Impact Fees & Fire Department Requirements**, dated July 6, 2010, and docketed on July 6, 2010. | | | **x** | | |
| **Exhibit 31** | **Rice Solar Energy, LLC's Supplementary Information Item 6, Revised General Arrangement**, dated June 11, 2010, and docketed on July 13, 2010. | | | **x** | | |
| **Exhibit 32** | **Rice Solar Energy, LLC's Supplementary Information Items 7-11, Additional Information Regarding the Archaeological Features at Rice Army Airfield**, dated July 16, 2010, and docketed on July 16, 2010. | | | **x** | | |
| **Exhibit 33** | **Rice Solar Energy, LLC's Comments on the Preliminary Determination of Compliance**, dated July 15, 2010, and docketed on July 19, 2010. | | | **x** | | |
| **Exhibit 34** | **Rice Solar Energy, LLC's Proposed Conditions: Land Use & Worker Safety**, dated July 16, 2010, and docketed on July 19, 2010. | | | **x** | | |

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| **Exhibit 35** | **Rice Solar Energy, LLC's Response to CEC Staff Data Request 72 - Spring 2010 Supplemental Botanical Inventory Report**, dated July 20, 2010, and docketed on July 21, 2010. | | | **x** | | |
| **Exhibit 36** | **Letter from Western Area Power Administration to the California Office of Historic Preservation Regarding Plans to Construct the 150 Megawatt Rice Solar Energy Project**, dated July 13, 2010, and docketed on July 23, 2010. | | | **x** | | |
| **Exhibit 37** | **Golden Eagle Survey Report**, dated July 21, 2010, and docketed on July 27, 2010. | | | **x** | | |
| **Exhibit 38** | **Letter from U.S. Army Corps of Engineers to Sycamore Environmental Consultants, Inc**., dated July 27, 2010 and docketed on August 2, 2010. | | | **x** | | |
| **Exhibit 39** | **Mojave Desert Air Quality Management District's Final Determination of Compliance**, dated July 30, 2010, and docketed on August 5, 2010. | | | **x** | | |
| **Exhibit 40** | **Rice Army Airfield Cultural Features Mapbook & Index Map**, dated August 10, 2010, and docketed on August 16, 2010. | | | **x** | | |
| **Exhibit 41** | **Rice Solar Energy, LLC's Supplementary Information Item 8, Biological Resources Vegetation & Wash Channel Acreages**, dated August 23, 2010, and docketed on August 23, 2010. | | | **x** | | |
| **Exhibit 42** | **Email from Rice Solar Energy, LLC Regarding Description of Heliostat Power & Control Cables**, dated August 18, 2010, and docketed September 7, 2010. | | | **x** | | |

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| **Exhibit 43** | **Rice Solar Energy LLC's Fire Needs Assessment,** dated October 1, 2010, and docketed on October 1, 2010. | | | **x** | | |
| **Exhibit 44** | **Rice Solar Energy, LLC's Full Load Rejection Stability Plots**, dated July 16, 2010, and docketed on October 12, 2010. | | | **x** | | |
| **Exhibit 45** | **Rice Solar Energy, LLC's Responses to Supplemental Data Requests**, dated August 6, 2010, and docketed on October 12, 2010. | | | **x** | | |
| **Exhibit 46** | **Rice Solar LLC's Fall 2010 Supplemental Botanical Inventory Report**, dated October 12, 2010, and docketed on October 13, 2010. | | | **x** | | |
| **Exhibit 47** | **Rice Solar Energy LLC's, Supplementary Information Item 9, Biological Mitigation Acreage Table and Map**, dated October 15, 2010, and docketed on October 15, 2010. | | | **x** | | |
| **Exhibit 48** | **Rice Solar Energy LLC's, Opening Testimony Package Part 1 (All Sections except Biological Resources, Cultural Resources, & Worker Safety-Fire Protection)**, dated October 18, 2010, and docketed on October 18, 2010 | | | **x** | | |
| **Exhibit 49** | **Rice Solar Energy LLC's, Opening Testimony Package Part 2 (Biological Resources, Cultural Resources, & Worker Safety-Fire Protection)**, dated October 21, 2010, and docketed on October 21, 2010 | | | **x** | | |
| **Exhibit 50** | **Rice Solar Energy LLC's Revised Fire Needs Assessment,** dated October 25, 2010, and docketed on October 25, 2010. | | | **x** | | |

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| **Exhibit 51** | **Riverside County's Review of Rice Solar Energy Project for LORS Conformance,** dated August 31, 2010, and docketed on September 21, 2010 | | | **x** | | |
| **Exhibit 52** | **Rice Solar Energy, LLC's Rebuttal Testimony Package**, dated October 27, 2010, and docketed on October 27, 2010 | | | **x** | | |
| **Exhibit 53** | **Rice Solar Energy, LLC's Simulated Tower Colors as Viewed from from KOP-1 and KOP-4** | | | **x** | | |
| **Exhibit 54** | **Email Correspondence dated October 21, 2010 through October 27, 2010, regarding on-site provision of specified emergency services** | | | **x** | | |
| **Exhibit 55** | **Rice Solar Energy, LLC's Supplemental Rebuttal Testimony: Worker Safety & Fire Protection,** dated November 3, 2010 | | | **x** | | |
| **Staff's Exhibits** | | | | | | |
| **200** | **Staff Assessment and Draft EIS**- Docketed October 11, 2010 | | | **x** | | |
| **201** | **Over Ride Statement and supporting declaration of Terry O'Brien** – Docketed October 21, 2010 | | | **x** | | |
| **202** | **Testimony of Geoff Lesh – Revised Worker Safety Conditions of Certification and supporting declaration** – Docketed October 21, 2010 | | | **x** | | |

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|---|---|---|---|---|---|---|
| **203** | **Testimony of Kim Tremain – Revised Cultural Resources section and supporting declaration** – Docketed October 21, 2010[Supersedes Cultural Section of Exhibit 200] | | | **x** | | |
| **204** | **Testimony of Kristin Ford – Revised portion of Socioeconomics section and supporting declaration** – Docketed October 21, 2010 | | | **x** | | |
| **205** | **Testimony of Alan Lindsley – Revised Traffic and Transportation Condition of Certification and supporting declaration** – Docketed October 21, 2010 | | | **x** | | |
| **206** | **MDAQMD's Final Determination of Compliance –** Docketed July 30, 2010, sponsored by Sam Oktay of MDAQMD | | | **x** | | |
| **206A** | **Email Errata to MDAQMD's Final Determination of Compliance – sponsored by Sam Oktay of MDAQMD** on October 29, 2010 | | | **x** | | |
| **207** | **Rebuttal Testimony of Geoff Lesh – Revised Worker Safety Conditions of Certification and supporting declaration** – Docketed October 27, 2010 | | | **x** | | |
| **208** | **Rebuttal Testimony of Kim Tremain – Revised Cultural Resources Conditions of Certification and supporting declaration –** Docketed October 27, 2010 | | | **x** | | |
| **209** | **Rebuttal Testimony of Scott White – Revised Biological Resources Conditions of Certification and supporting declaration** – Docketed October 27, 2010 | | | **x** | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **210** | **Applicant's and Staff's Agreed Upon Conditions of Certification CUL-7, CUL-13, and CUL-14** | | | **x** | | |
| **211** | **Letter dated October 27, 2010, from Fire Captain Jason Neuman to John Kessler re Rice Solar Energy Project Fire Needs Assessment** | | | **x** | | |
| **212** | **[RESERVED]** | | | | | |

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA**
**1516 NINTH STREET, SACRAMENTO, CA 95814**
**1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION FOR THE *RICE SOLAR ENERGY POWER PLANT PROJECT***

**Docket No. 09-AFC-10**

***PROOF OF SERVICE***
**(Revised 8/5/2010)**

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## DECLARATION OF SERVICE

I, _____, declare that on _____, I served and filed copies of the attached _____, dated _____. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/ricesolar].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

**(*Check all that Apply*)**

**FOR SERVICE TO ALL OTHER PARTIES:**

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

_____ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

***AND***

**FOR FILING WITH THE ENERGY COMMISSION:**

_____sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

***OR***

_____ depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**
Attn: Docket No. 09-AFC-10
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

_____

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA**
**1516 NINTH STREET, SACRAMENTO, CA 95814**
**1-800-822-6228 – WWW.ENERGY.CA.GOV**

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***PROOF OF SERVICE***
**(Revised 8/5/2010)**

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## DECLARATION OF SERVICE

I, Maggie Read, declare that on December 22, 2010, I served by electronic mail and by CD via the US Mail, the Commission Decision on the RICE SOLAR ENERGY PROJECT, and the Notice of Availability to the Mass Mail Lists. The original documents are filed with the Docket Unit and are accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/ricesolar].

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***AND***

**FOR FILING WITH THE ENERGY COMMISSION:**

__x___sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

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docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original Signed By:

_____

Maggie Read
Hearing Adviser's Office