

**Rio Mesa Solar Electric Generating Facility (RMSEGF)  
(11-AFC-4)**

**Applicant's General Comments and Comments to Conditions of Certification  
on the Preliminary Staff Assessment**

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**GEOLOGY & PALEONTOLOGY**

**GENERAL COMMENTS**

1. CEC has requested information on two additional geologic formations; Applicant will not be able to provide the information until after December 3, 2012 because the dating process for these two additional formations requires at least three months to process. This supplemental paleontological information is not necessary to form impact conclusions for either the PSA or FSA as agreed to by Staff based on an email communication received on September 17, 2012.
2. The PSA appears to conflate the Society of Vertebrate Paleontology's definition of "significant paleontological resources" with CEQA's mandate that the CEC identify potentially significant environmental impacts and feasible mitigation measures. The PSA must be revised to more accurately reflect CEQA requirements.
3. While the Society of Vertebrate Paleontology (SVP) provides advisory guidance regarding potentially significant paleontological resources, the CEC has not appropriately used this guidance to develop a legally sufficient threshold of significance pursuant to CEQA. The PSA states that "a vertebrate fossil is considered scientifically important unless otherwise demonstrated," and suggests that a single fossil impact would be significant under CEQA. As discussed below, any such implication would not conform to CEQA. Other lead agencies that have incorporated SVP guidance recovery also explicitly recognize that 100% recovery of all fossils, including fossils that may be considered "scientifically significant" by the SVP, is not feasible, reasonable, and not required to support a less than significant finding relative to potential paleontological impacts.
  - a. CEQA requires that an EIR must describe feasible mitigation measures that can minimize a project's *significant* environmental effects. 14 Cal. Code Regs. §§ 15121(a), 15126.4(a). Mitigation is not required for insignificant environmental impacts. Pub. Res. Code §§ 21100(b)(3), 21150; 14 Cal. Code Regs. § 15126.4(a)(3).
  - b. Mitigation measures must be "feasible," meaning the measure must be capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. Pub. Res. Code § 21061.1. Mitigation measures are not required to avoid an impact entirely, but instead may limit the scope or magnitude of a proposed activity. 14 Cal. Code Regs. § 15370(b).
  - c. Under CEQA, "[a] less than significant impact does not necessarily mean no impact at all." *Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884, 899. CEQA's standards "allow for a finding of an insignificant degree of impact, not necessarily a zero impact." *National Parks & Conserv. Ass'n v County of Riverside* (1999) 71 Cal.App.4th 1341, 1359.
4. Consistent with CEQA and the federal National Environmental Policy Act (NEPA), lead agencies that utilize or incorporate the SVP guidance have also concluded that a finding of less than significant impacts or effects to paleontological resources does not require the complete

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avoidance or recovery of vertebrate or other "scientifically significant" fossils. In each of these instances, the impact analysis explicitly considers practicality, economic factors, and the extent to which a reasonable, representative sample of such resources can be obtained. The PSA must be revised to include the additional context, such as feasibility, practicability, cost, and related factors, that must be included in a legally defensible CEQA threshold and that are consistent with the precedents cited below.

- a. In June 2012, Caltrans released a Draft Environmental Impact Report/Environmental Impact Statement for the I-710 Corridor (Long Beach Freeway) Project in Los Angeles County available at <http://www.dot.ca.gov/dist07/resources/envdocs/docs/710corridor/>. The I-710 Project Area includes sediments from the Holocene and Pleistocene eras. See, e.g., I-710 Draft EIR/EIS at p. 3.11-2. The I-710 Draft EIR/EIS concludes that "[e]arthmoving operations could result in the destruction of fossils and fossiliferous rock units within the construction disturbance limits. It is often not possible to completely eliminate impacts to fossil resources. It is understood that earthmoving activity could, unavoidably, destroy some fossils. These types of impacts can be mitigated by collecting and preserving a representative sample of the entire fossil assemblage and associated geological information in the areas disturbed by project construction." *Id.* at 3.11-6. Applying this standard, which contemplated that certain fossils would be unavoidably impacted by the project, the DEIR concluded that impacts to paleontological resources would nevertheless be less than significant with the recovery of a representative sample, but not all potentially affected fossils in the project area.
- b. The Bureau of Land Management (BLM) has published a detailed discussion of measures appropriate for protecting and mitigating for impacts to paleontological resources (BLM Manual H-8720-1, *General Procedural Guidance For Paleontological Resource Management*)(Manual 8720). The BLM is also the lead federal permitting agency for the project, and will issue permits for certain project elements and review the project's environmental impacts in accordance with NEPA requirements. Manual 8720 acknowledges that mitigation is required for impacts to vertebrate or other important fossils, but expressly provides that, even in the case of scientifically important fossil impacts, mitigation "may be accomplished...by obtaining representative samples of the fossils." Manual 8720 also does not require full monitoring of excavations and earth moving in fossil-bearing strata designated under the BLM's classification approach up to the level of "Class 4" soils, the most sensitive level identified within and adjacent to the project site. In these cases, Manual 8720 states that it may be more appropriate to "spot check" Class 4 or less sensitive strata in conjunction with a mitigation and monitoring program (Manual 8720-1, Sections III-3 through III-4). As a result, Manual 8720 does not require that sufficient paleontological impact mitigation must include the recovery of all potentially impacted, scientifically important fossils.
- c. BLM has also issued *Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources* (IM 2009-11), which state that "factors such as locality or specimen significance, economics, safety, and project urgency will be considered when developing mitigation measures." IM 2009-11 also indicates that the mitigation planner has discretion to recommend whether "total or partial recovery or sampling" is appropriate for a specific site (BLM IM 2009-11, 1-10 through 1-11). As a result, IM 2009-11 specifically recognizes that mitigation requirements for paleontological impacts must take account of

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- practicality and feasibility factors and allows for mitigation approaches that may not include the recovery of all potentially impacted, scientifically important fossils.
- d. San Diego County adopted *Guidelines for Determining Significance of Paleontological Resources*, in 2007 and amended the guidelines in 2009. The San Diego County guidelines do not require paleontological-specific monitoring even in areas considered to have the highest potential for paleontological resources when the volume of soil disturbed is 2,500 cubic yards or less. In addition, the guidelines consider fossil finds of less than 12 inches to be consistent with a negative result (e.g., a report to the effect that “no fossils were found” would be issued even if sub-12-inch fossils were discovered) when smaller levels of earth movement occur in sensitive soils (San Diego County *Guidelines* pages 15-17). The San Diego guidelines, which were developed with technical support from the San Diego Museum of Natural History, do not require the recovery of all fossils from sensitive strata to avoid significant impacts to paleontological resources.
  - e. The San Bernardino County Development Code (Code) includes one of the most comprehensive paleontological protection requirements enacted by any local jurisdiction in California. The Code requires fossil monitoring and recovery when development occurs in high-potential or sensitive rock strata in a manner consistent with the SVP recommendations. Consistent with CEQA feasibility and practicability requirements, however, the extent the required paleontological mitigation is limited to specific levels of expense that vary with by type and size of the applicable project (Code § 82.20.030(f)). The San Bernardino County paleontological protection requirements specifically consider cost and feasibility and do not require the recovery of all fossils from sensitive strata to mitigate for project impacts.
  - f. The CEC has recently approved five solar energy projects, all of which involve boring or auguring to fix support structures potentially into strata that were determined to have high paleontological sensitivity. In each case, the final CEC certification concluded that project impacts to paleontological resources were less than significant with the incorporation of mitigation measures that were substantially similar to the proposed measures in the PSA (see, e.g., Rice Solar Energy (certification approved in 2010), Beacon Solar Energy (certification approved in 2010), Genesis Solar (certification approved in 2010), Palen Solar (certification approved in 2010), and Abengoa Mojave Solar (certification approved in 2010)). As discussed above with respect to the I-710 DEIR issued by Caltrans, these mitigation measures do not, and cannot ensure that impacts to each and every fossil in a project site are avoided. Notwithstanding this fact, none of the CEC certifications concluded that paleontological resource impacts would be significant.
  - g. Other lead agencies conducting CEQA review for renewable energy projects have also determined that potential impacts to formations with high paleontological sensitivity due to the insertion of supporting posts or piles would be mitigated to less than significant levels through monitoring programs consistent with the SVP and proposed PSA recommendations. These jurisdictions include Kern County (see, e.g., Antelope Valley Solar DEIR (2011), Catalina Renewable Energy Project DEIR (2011), and Beacon Photovoltaic Project (2012)), and Imperial County (Campo Verde Solar Project DEIR (2012)).
5. The PSA concludes that where conventional grading excavation is conducted, impacts to paleontological resources will be adequately mitigated by the proposed conditions of

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certification and even yield a net gain to the science of paleontology. Eighty five percent of all project disturbances would yield this net gain. Staff is concerned that pylon insertion would not allow for recovery of fossil units. The PSA analysis should be revised to describe and consider the fact that impacts associated with pylon insertion will avoid approximately 99.8% of all sub-surface paleontological resources.

Total project disturbance is 641,281 cubic yards; pylon disturbance was calculated using  $0.57^1$  cubic yards per pylon x 170,000 pylons, which equals 96,900 cubic yards.

Unrecoverable pylon disturbance would be calculated by defining the volume of sensitive paleontological resources (paleosol) and the volume of pylon disturbances within that paleosol as calculated below. Conservatively assuming that the paleosol area is 7 feet thick on average and 799 acres across the project site, the volume within the fence line of the paleosol would be approximately 9,023,938 cubic yards. The volume of the pylon disturbance within the paleosol ( $0.57^1$  cubic yards per pylon x 170,000 pylons x 21 percent of site underlain with paleosol<sup>2</sup>) is 20,349 cubic yards or approximately 0.2%.

Conservatively assuming the entire project site is underlain with paleosol to 7 feet (42,971,133 cubic yards), potential project impacts from the pylons is 96,900 cubic yards. Accordingly, the worst-case potential pylon disturbance is still only 0.2% of the potential paleosol resource.

There is no basis under CEQA for concluding that an impact of approximately 0.2% of the paleosol, almost complete avoidance of a resource, could possibly constitute a significant impact.

In the Specific Comments below, Applicant points out several examples, but not all instances, of changes conforming to this comment.

6. Revise the PSA to acknowledge that, in conjunction with the previous recovery of hundreds of surface fossils, Applicant will ensure that a representative sample of construction-related on-site fossils are also recovered as outlined in proposed Conditions of Certification **PAL-1** through **PAL-7**. Therefore, combined recovery already performed, full monitoring within the power block and common area disturbances, the avoidance of 99.8 percent of sensitive paleontological resources under the heliostat field render any impacts potentially associated with heliostat pylon insertion as less than significant.
7. Please replace "pedestal" or "pole" with the term "pylon". Also, please note that the pylons do not require installation of foundations, as they are vibrated directly into the ground.

## FINDINGS OF FACT

No findings of fact listed are listed in this section.

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<sup>1</sup> A 16" diameter boring to 11' deep per pylon.

<sup>2</sup> See Final Paleontological Resource Delineation Plan, page 3-1 where it references 21% of the project site is underlain with Qpv sediment.

### PROPOSED CONDITIONS OF CERTIFICATION

1. **Pages 5.2-32 through 5.2-34, PAL-3:** Please move Verification to directly after the first paragraph. Please remove Numbers 1 and 2, as neither describes content of the PRMMP. If assurance is required (1), then that would take the form of a separate instrument. Identification of persons (2) is inappropriate for this sort of forward-looking plan. That happens later and is managed by the PRS. Please revise Item 9 as edited below. Negotiations with a repository cannot be concluded and an agreement cannot be put in place until after excavations are completed for the simple reason that such institutions need to know what they are to receive before they can agree to receipt.

**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 resources 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.

**Verification:** The PRMMP shall be developed in accordance with the guidelines of the Bureau of Land Management and the Society of Vertebrate Paleontology (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. To the extent that it is germane to the identified sensitive sediment, 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;

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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 that meets the Secretary of the Interior's and Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;
9. ~~Institutions that would be approached to curate~~ ~~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 for review and approval. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

4. **Pages 5.2-35 and 5.2-36, PAL-5:** Please move Verification to directly after the first paragraph and revise as follows:

**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.

**Verification:** The project owner shall ensure that the PRS and PRM(s) have the authority to ~~halt or~~ redirect construction around the immediate area of the find, 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 ~~provided~~ ~~proposed~~ in a letter or email from the PRS and the project owner to the CPM along with reasons for that change prior to the change in monitoring and will 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.

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2. The project owner through the PRS 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 recurring 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 by 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 placed in the monthly compliance reports. The summary shall include the name(s) of the PRS and 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.