

DOCKET

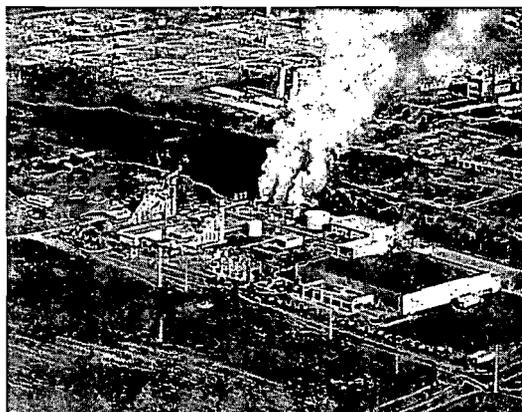
92-SPPE-1C

DATE JUN 05 2005

RECD. APR 26 2010

**INITIAL STUDY/MITIGATED NEGATIVE
DECLARATION (IS/MND)**

LM6000 Fleet Upgrade



Central Valley Financing Authority-
Carson Cogeneration Project
Docket No. 92-SPPE-1

June 5, 2008

Prepared for:

Central Valley Financing Authority
2591 Laguna Station Road
Elk Grove, CA 95758

Prepared by:

URS

2870 Gateway Oaks Drive, Suite 150
Sacramento, CA 95833

TABLE OF CONTENTS

1.0 PROJECT SUMMARY..... 1-1

1.1 EXECUTIVE SUMMARY 1-1

1.2 DECLARATION..... 1-2

1.3 ORGANIZATION OF THE IS/MND 1-2

1.4 PROJECT LOCATION 1-3

1.5 PROJECT DESCRIPTION..... 1-3

1.6 PROJECT BACKGROUND 1-7

1.7 DESCRIPTION OF PROPOSED CHANGES 1-7

1.7.1 Present Generation Equipment 1-7

1.7.2 LM6000 Upgrade Components..... 1-8

1.7.3 Construction Area 1-8

1.7.4 Construction Procedure..... 1-8

1.7.5 Construction Vehicles and Equipment..... 1-9

1.7.6 Construction Schedule 1-9

1.8 NECESSITY OF THE MODIFICATION..... 1-10

1.9 MODIFICATION WAS NOT KNOWN AT THE TIME OF THE
CERTIFICATION 1-10

1.10 WHY THE CHANGE SHOULD BE PERMITTED..... 1-10

2.0 ENVIRONMENTAL CHECKLIST 2-1

1. AESTHETICS..... 2-3

2. AGRICULTURAL RESOURCES 2-4

3. AIR QUALITY 2-5

4. BIOLOGICAL RESOURCES 2-10

5. CULTURAL RESOURCES 2-11

6. GEOLOGY AND SOILS 2-12

7. HAZARDS AND HAZARDOUS MATERIALS 2-13

8. HYDROLOGY AND WATER QUALITY..... 2-15

9. LAND USE AND PLANNING..... 2-19

10. MINERAL RESOURCES 2-20

11. NOISE..... 2-21

12. POPULATION AND HOUSING..... 2-22

13. PUBLIC SERVICES 2-23

14. RECREATION 2-24

15. TRANSPORTATION AND TRAFFIC..... 2-25

16. UTILITIES AND SERVICE SYSTEMS 2-26

17. MANDATORY FINDINGS OF SIGNIFICANCE..... 2-28

3.0 LIST OF PREPARERS..... 3-1

4.0 REFERENCES..... 4-1

LIST OF TABLES

Table 1.7-1	Estimated Vehicles and Equipment Needed for LM6000 Upgrade
Table 1.7-2	Proposed Schedule of LM6000 Upgrade
Table 2.3-1	Maximum Quarterly and Annual Emissions from the Modified Facility
Table 2.3-2	Quarterly Emission Changes for the Modified Gas Turbine
Table 2.3-3	Maximum Background Concentrations, 2004-2006 ($\mu\text{g}/\text{m}^3$)
Table 2.3-4	Modeled Maximum Project Impacts, CVFA Turbine Upgrade Project
Table 2.3-5	Proposed CVFA Facility Emission Mitigation

LIST OF FIGURES

Figure 1	Site Location Map, Carson Cogeneration Facility
Figure 2	Carson Cogeneration Project System Schematic

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE: LM6000 Fleet Upgrade
DATE: June 2008
PROJECT APPLICANT: Central Valley Financing Authority
LEAD AGENCY: Central Valley Financing Authority
CONTACT PERSON: Kevin Hudson, (916) 732-7101

1.0 PROJECT SUMMARY

The purpose of this report is to describe the changes necessary to upgrade existing LM6000 PA turbines to LM6000 PC Sprint units. The upgraded unit provides more power and higher efficiency with fewer net carbon dioxide emissions than the superseded unit. The project requires evaluation under the California Environmental Quality Act (CEQA). The California Energy Commission (CEC or Commission) issues permits for thermal energy units in California, and therefore has general jurisdiction. For units less than 100 MW, the CEC may issue an exemption and the project is permitted under local authority. That is the intent with this study.

The CEC permitting process requires certain information and organization concerning the project description and necessity of the modification, as well as whether the information requiring the modification was known at the time of the original permit. An environmental checklist or equivalent is required under CEQA that addresses each of the 17 discipline areas (e.g. air quality, biology, etc.). This document is formatted to align with each of the information areas for the CEC in Chapter 1, and provides the environmental checklist in Chapter 2.

1.1 EXECUTIVE SUMMARY

On June 23, 1993, the CEC issued an Initial Study Mitigated Negative Declaration (IS/MND) for the Central Valley Financing Authority's (CVFA) Carson Cogeneration Project and granted a Small Power Plant Exemption (SPPE) that exempts the project from the Commission's power plant siting requirements. The project has been in operation continuously since its construction in 1994 with scheduled outages only for maintenance and in response to load requirements. CVFA proposes to modify the combined cycle LM6000 turbine at the Carson Cogeneration Project. The modification would consist of upgrading the LM6000PA unit to LM6000PC Sprint/EFS model (water injected for nitrogen oxides [NO_x] control). This upgrade is expected to increase output by about 7.9 megawatts (MW) to the combustion turbine while reducing the carbon footprint (greenhouse gases) on a per-megawatt-hour basis. The upgrade also improves the plant's efficiency (heat rate), resulting in lower consumption of natural gas per-megawatt-hour. The additional mass flow contribution to the heat recovery steam generator may increase steam turbine output up to about 0.7 MW. Control systems would be upgraded from GE Mark V to Mark VI.

The turbine upgrade is a “project” pursuant to the California Environmental Quality Act and therefore requires evaluation by the lead agency, which is in this case CVFA. Implementation of the project would result in benefits to power generation and air quality, without causing significant adverse impacts, and is in the best interests of CVFA.

1.2 DECLARATION

CVFA has determined that the above project would have no significant impact on the environment and is therefore exempt from the requirement of preparation of an Environmental Impact Report (EIR). This determination is based on the attached Initial Study and the following findings:

- The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.
- The project does not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The project will not have impacts that are individually limited but cumulatively considerable.
- The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.
- No substantial evidence exists that the project will have a negative or adverse effect on the environment.
- The project incorporates all applicable mitigation measures or environmental commitments identified in the Initial Study (attached).
- This Mitigated Negative Declaration reflects the independent judgment of the lead agency.

1.3 ORGANIZATION OF THE IS/MND

This Initial Study/Mitigated Negative Declaration (IS/MND) is based on the requirements of CEQA Guidelines sections 15063 and 15071 (Title 14, California Code of Regulations (CCR) §§ 15063 and 15071), describing the contents of an Initial Study and Negative Declaration. The IS/MND provides the following:

- A. A description of the project, including the location of the project;
- B. An identification of the environmental setting;
- C. An identification of environmental effects by use of a checklist, matrix or other method.
- D. A discussion of ways to mitigate the significant effects identified, if any;

- E. An examination of whether the project would be consistent with existing zoning, plans and other applicable land use controls;
- F. The name of the person or persons who prepared or participated in the initial study.
- H. A proposed finding that the project will not have a significant effect on the environment;
- G. Mitigation measures, if any, included in the project to avoid potentially significant effects.

This IS/MND organization is based on CVFA's determination that the effects of the LM6000 Fleet upgrade would not substantially differ from the original project evaluated in 1992 through 1994 for any of the other environmental impact concerns.

1.4 PROJECT LOCATION

The CVFA-Carson Cogeneration Project is located on a 10-acre parcel owned by Sacramento County approximately seven miles south of downtown Sacramento and four and a half miles south of the Sacramento Executive Airport. The project site is bordered by Laguna Station Road to the east and is directly south of the Sacramento Regional Wastewater Treatment Plant (SRWTP). The primary entrance is from the service road running east-west off Laguna Station. The local setting is shown in Figure 1.

1.5 PROJECT DESCRIPTION

The CVFA-Carson Cogeneration Project consists of a 101.2 megawatt (MW) peaking, 54 MW baseload natural gas-fired cogeneration power plant. The power plant produces electricity that is purchased by the Sacramento Municipal Utility District (SMUD) and steam that is used at the SRWTP to heat digester sludge and buildings' heating, ventilation and air conditioning systems. Steam is also used to operate refrigeration compressors of the ice plant. The CVFA filed an application for SPPE on July 6, 1992 with the CEC. The CEC has exclusive jurisdiction to certify sites for thermal power plants that generate 50 MW or more in California (Warren-Alquist Act [Act]), Pub. Resources Code section 25000, *et seq.*). According to the Commission Decision (1993), Section 25541 of the Act allows the CEC to exempt power plants with a generating capacity of up to 100 MW and modifications to existing generating facilities that do not add capacity in excess of 100 MW, from the site certification process if it finds that no substantial adverse impact on the environment or energy resources will result from the construction or operation of the proposed facility or from the modifications. SCA received notification from the CEC that the upgrade is not subject to CEC jurisdiction because 1) the existing facility operates under an SPPE, and 2) the modifications will increase the facility's capacity by less than 50 MW.

The CEC approved the Carson Cogeneration Project for a Small Power Plant Exemption on June 23, 1993, and the Carson Cogeneration Project has been in operation since its construction in 1994.

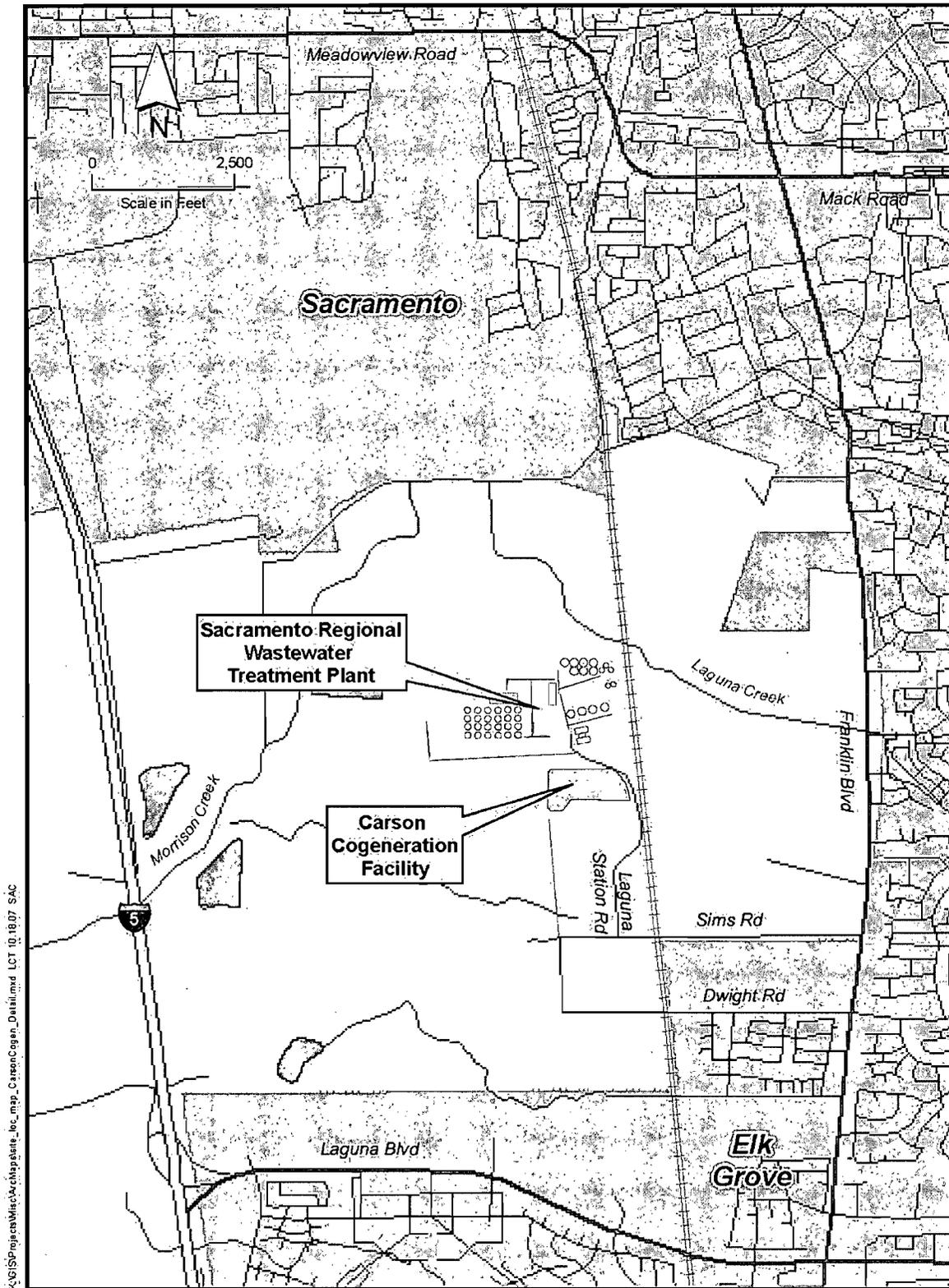


Figure 1
Site Location Map, Carson Cogeneration Facility

The Carson Cogeneration natural gas-fired combined cycle cogeneration plant provides up to 101.2¹ MW of peaking power and 54 MW of baseload electricity to SMUD and provides process steam to the SRWTP and Carson Ice located in south Sacramento. The plant consists of the following elements:

- The Combined cycle power block is configured with one 42.5 MW (nominal) General Electric (GE) LM6000PA natural gas and digester gas-fired combustion turbine generator (CTG), one heat recovery steam generator (HRSG) with natural gas and digester gas-fired duct burner, and one 14 MW nominal (20 MW maximum) steam turbine generator.
- One simple cycle, natural gas-fired GE LM6000PA CTG rated at 42.5 MW (nominal), and
- A 0.4-mile transmission/fiber optic line to the existing SRWTP substation.
- The project also includes one fuel gas compressor, a diesel-fired backup generator, and a cooling tower. Project site buildings and structures on the site include a plant control and administration building, storage tanks, switchyard, a water treatment building, a warehouse/machine shop, a chiller, and a water chemical feed building.

The project is fueled by natural gas supplied by SMUD's 76-mile gas pipeline system connected from the town of Winters to three combined cycle co-generation facilities, including the Procter & Gamble Cogeneration Facility, the Campbell Soup Cogeneration Facility and the combined cycle Cosumnes Power Plant.

Water for cooling is provided by treated wastewater from the adjacent SRWTP. Drinking water, sanitary supply and water for power augmentation and emissions control is supplied by the City of Sacramento under contract to SMUD.

Wastewater from the project includes blowdown from the circulating water system and the HRSGs, area washdown, sanitary water, and neutralized chemical wastes. The sanitary wastewater is discharged to the SRWTP sewer system. Non-contact stormwater runoff is discharged to the SRWTP under permit and indirectly to Morrison Creek.

Upgrading the LM6000 unit would be performed as part of the scheduled maintenance cycle, in a manner nearly identical to the regular maintenance activity. The turbine would be removed for maintenance, as it has been more than three times since initiating operations. During maintenance, the turbine would be sent to the manufacturer's depot and be fitted with additional equipment to inject water and new monitoring controls added. The upgraded turbine would then be shipped back to the facility, installed in the same turbine compartment and connected to the same infrastructure, but with an added pump skid and conveyance piping.

¹ The CEC authorized the exemption for the additional 1.2 MW over the 100 MW rating based on better-than-expected efficiency when the plant was first operated.

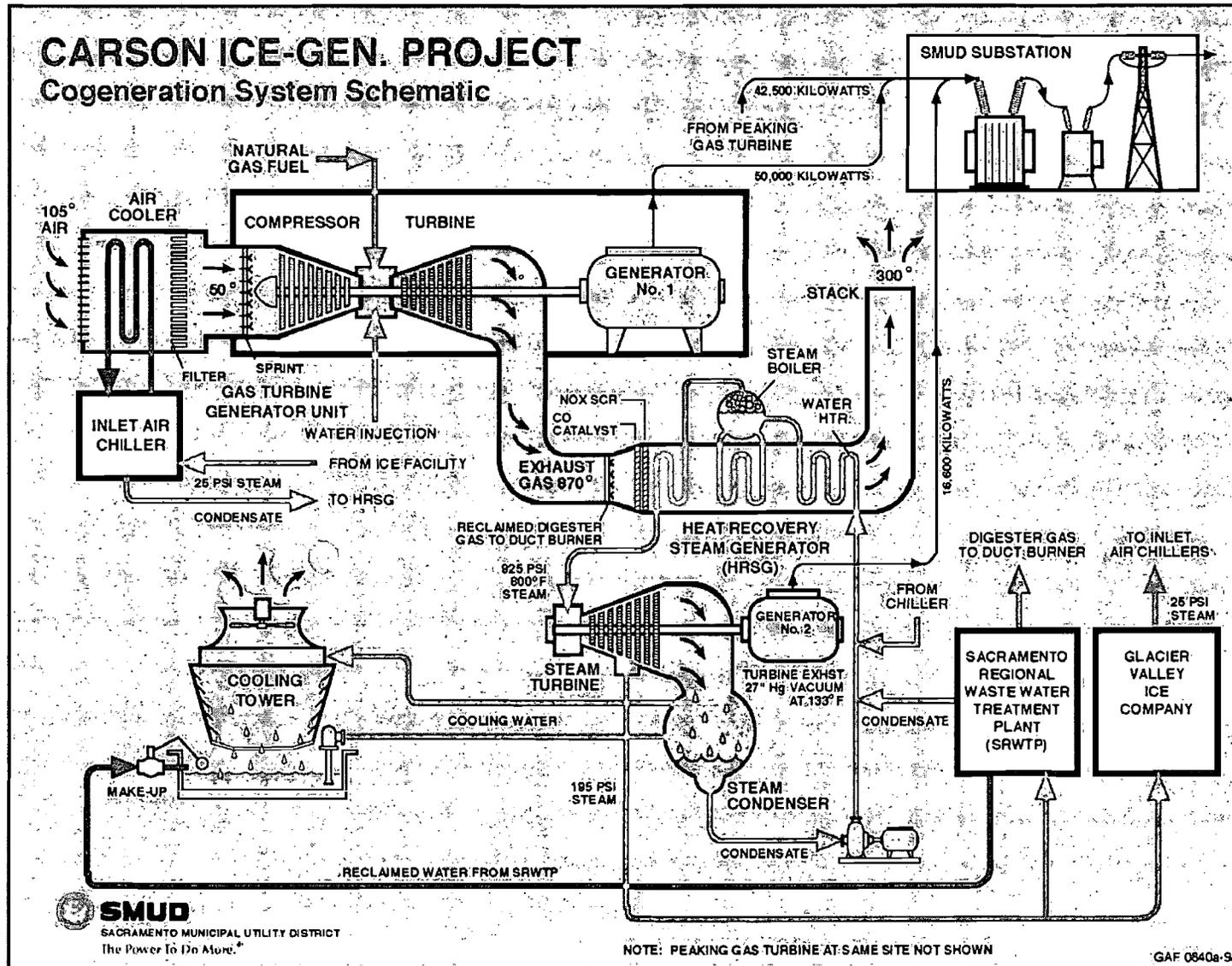


Figure 2
 Carson Cogeneration Project System Schematic

For the proposed upgrade, there will be a small increase in reclaimed water use for evaporative cooling in the cooling tower from an increase in capacity of approximately 3 MW resulting from the PA to PC upgrade. No additional evaporative cooling in the cooling tower is required for the additional 5 MW of capacity resulting from the Sprint water injection. Any evaporative cooling effect in the compressor section resulting from the power augmentation water is lost as the water is converted to steam in the hot section of the burner and power turbine. The benefit of power augmentation water use is distinguishable by the fact that the resulting mass flow rate increase in the compressor and hot section of the turbine provides added mechanical forces to act upon the turbine blades, thereby producing more torque. The torque on the shaft produces greater amperage at a constant generator shaft speed, which in turn produces more output power (Figure 2).

The proposed upgrade will result in more energy being produced (approximately 7 to 8 MW per CTG) with only a slight increase in fuel flow, but less carbon dioxide (CO₂) and NO_x on a MW-hour rate basis. There would be slightly greater water use for NO_x reduction, but not more than the available water entitlement, and only a small amount of additional water will be required for cooling, in keeping with policies for powerplant cooling. There would be no changes in the plant's footprint area, the number of employees, the generation or use of hazardous materials, or the plant's visual and aesthetic conditions. The proposed work would be located within the developed area, would reduce impacts specifically to greenhouse gases, and impact avoidance measures and mitigation can be incorporated into the upgrade. As a result, this IS/MND is the appropriate vehicle to accomplish Carson Cogeneration Project requirement for additional generation and provides energy efficiency benefits.

1.6 PROJECT BACKGROUND

On June 23, 1993, the CEC issued a Mitigated Negative Declaration for the Carson Cogeneration Project and granted an SPPE that exempts the project from the Commission's power plant siting requirements. The project has been in operation continuously since its construction in 1994 with scheduled outages only for maintenance and in response to load requirements. The project was constructed in 1994 and became operational in 1995.

1.7 DESCRIPTION OF PROPOSED CHANGES

1.7.1 Present Generation Equipment

Present generation equipment consists of a combined cycle power block configured with one 42.5 MW (nominal) GE LM6000 natural gas or digester gas-fired CTG; one HRSG with natural gas or digester gas-fired duct burners; one 14 MW (nominal, 20 MW maximum) steam turbine generator; and one simple cycle, natural gas-fired GE LM6000PA CTG rated at 42.5 MW (nominal).

The project also includes one fuel gas compressor, a back-up diesel generator, and a cooling tower. Project site buildings and structures include a plant control and administration building, storage tanks, switchyard, a water treatment building, warehouse/machine shop, a chiller and a water chemical feed building.

1.7.2 LM6000 Upgrade Components

After upgrades, the equipment would incorporate LM6000 components as follows:

Combined cycle power block configured with one 50 MW (nominal) GE LM6000PC Sprint/EFS natural gas or digester gas-fired CTG, one HRSG with natural gas or digester gas-fired duct burners, and one 14 MW nominal (20 MW maximum) steam turbine generator. One CTG would still be in the combined cycle configuration with the steam turbine and the peaking CTG would remain as simple cycle LM6000PA. The simple cycle peaking unit is not proposed to be upgraded at this time. A small concrete foundation, pump skid, and conveyance piping would be added for the Sprint upgrade at the combined cycle CTG.

- The fuel gas compressor, backup diesel generator, storage tanks, and cooling tower and switchyard would be the same as pre-upgrade. Buildings on the site would remain the same as pre-upgrade.

1.7.3 Construction Area

The upgrade construction area would consist of the paved and developed areas of the Carson Cogeneration Project plant. Upgrade construction would be nearly the same as a standard turbine maintenance “change out,” in which the operating turbine is shut down and disconnected, and the surrounding enclosures are partly dismantled. The serviced turbine is lifted out of bearing races onto a flatbed truck and transported to the out-of-state maintenance facility. Once serviced and upgraded, the turbine is returned to the facility by flatbed; lifted into the bearing races; and piping reconnected to fuel, electrical controls and water. Control system enhancements are made at this time for compatibility with the upgraded turbine. The enclosing turbine structure is re-assembled and the turbine is tested, commissioned and cycled for operation.

In the upgrade, the LM6000 turbine would have vanes changed, additional ports for water injection installed, and upgraded control components and sensors installed. At the Carson Cogeneration Project facility, additional foundation, pump, piping for water and conduit for control systems would be installed. In all other respects the upgrade would be the same as a normal maintenance overhaul.

1.7.4 Construction Procedure

The LM6000 upgrade would consist of the following steps:

- Mobilize temporary spare LM6000 to Carson Cogeneration Project site.
- Shut down target LM6000 unit, allow to cool, and dismantle part of enclosure.
- Disconnect fuel, controls and water piping.
- Load target LM6000 on 45-foot flatbed trailer.
- Install spare LM6000 at Carson Cogeneration Project site, connect, test and bring to operation.
- Target LM6000 is transported by road to the out-of-state service facility.

- Target LM6000 is upgraded by installation of new variable inlet guide vanes, new controls and air and water injection manifold and spray nozzles, exhaust diffuser, new LPT/LPT mid shaft and LPC stator. Upgrade takes approximately 6 to 8 weeks.
- Upgraded LM6000 is returned by flatbed truck to Carson Cogeneration Project.
- The spare LM6000 is removed from service and disconnected, and the enclosure partly dismantled.
- The spare turbine is lifted from bearing races to flatbed trailer, or installed in place of the next target turbine.
- The upgraded LM6000 is lifted into bearing races, connected to existing and added equipment and commissioned for operation.

1.7.5 Construction Vehicles and Equipment

The actual equipment to be used to remove and transport the LM6000 for upgrading will be determined once the project commences, but is expected to be similar to that listed in Table 1.7-1.

TABLE 1.7-1: Estimated Vehicles and Equipment Needed for LM6000 Upgrade

Vehicles and Equipment	Number of Vehicles	Construction Activity
Personal transport vehicles	10 per day	Transport workers to project construction site.
Truck-mounted welding units	1 to 2	Site manufacturing.
Flatbed truck/tractor trailer	3 trucks	Delivers LM6000 for maintenance.
Wheeled grade-all	1	Unload and maneuver parts.
Tracked crane	1	Lift LM6000 from bearing races to truck.
Concrete Truck	3 to 4	Install small Sprint pump foundation.

1.7.6 Construction Schedule

The upgrade is proposed to be constructed in spring 2010. It is particularly important to avoid outages during the summer months, when energy use is highest. CVFA plans to upgrade the LM6000, according to the schedule in Table 1.7-2.

TABLE 1.7-2: Proposed Schedule of LM6000 Upgrade

Activity	Date
Change out Turbine (Carson Cogeneration Project 1A)	January 2010
Install LM6000 (Carson Cogeneration Project 1A)	March 2010

The CVFA has determined that spring and fall electrical loads are lowest and, therefore, supportable from external sources, and will accommodate summer cooling and winter heating electrical load demands.

1.8 NECESSITY OF THE MODIFICATION

This LM 6000 modification is necessitated by the ongoing demands to increase electrical power production to meet the regional demands and the District policy of reducing greenhouse gas emissions and increasing efficiency wherever possible. When the District has greater demands for electricity than it can meet with its own generation sources, electricity must be bought from other sources at a cost that fluctuates with the market. If replacement energy could be found, that energy would be acquired at considerable additional cost to ratepayers. This replacement energy would increase the District's exposure to price volatility and lead to additional consumption of natural resources, with associated environmental impacts, including air, water quality, and global climate change impacts. This cost fluctuation is undesirable for ratepayers and subjects them to price oscillations that can result in less power reliability. To the extent the District can generate and control its own sources of energy, the price volatility is lower and risk to power is lower.

1.9 MODIFICATION WAS NOT KNOWN AT THE TIME OF THE CERTIFICATION

The proposed project modification was not known and could not have been known at the time of the SPPE submittal in 1992. The LM6000PC Sprint/EFS unit was introduced by GE in 2003 and was not available in 1992, when the project was initiated.

1.10 WHY THE CHANGE SHOULD BE PERMITTED

The proposed project modification would allow Carson Cogeneration Project to operate at a higher efficiency, producing more power with less net emissions of CO₂ per MW-hr and total NO_x than currently possible without the upgrades. The change would be consistent with SMUD's policies to improve energy efficiency and air quality, and reduce sources of greenhouse gases according to California state laws (AB 32, the California Global Warming Solutions Act of 2006).

2.0 ENVIRONMENTAL CHECKLIST

The following section uses a checklist based on Appendix G of the CEQA Guidelines to identify potential environmental effects of the project. In each section, the checklist answers specific questions regarding potential for significant impacts. Below each section of the checklist is a narrative explanation of the rationale supporting the determination in the checklist, an examination of whether the project would be consistent with existing zoning, plans and other applicable land use controls, as well as a discussion of ways to mitigate the significant effects identified, if any. The checklist that follows is numbered sequentially (e.g 1, 2, 3,) to assist in using it as a “stand-alone” document when appropriate.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input checked="" type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Signature

Date

1. AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The IS/MND for the CVFA (1993) identified potential impacts from new lighting required for the project and by creating a water vapor plume from the cooling towers. The impacts were mitigated by conditions previously applied to the facility. The activities necessary to complete the upgrade are largely the same as a typical maintenance cycle and would not change any existing conditions for visual resources at the site.

The proposed LM6000 modification would have no impact on visual and aesthetic resources and no mitigation is required.

2. AGRICULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
II. Agricultural Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project does not contain farmland resources nor any land zoned for agricultural use. There are no agricultural resources in the vicinity of the project. The proposed upgrade would occur entirely within paved and developed building areas. As such, the project will have no impact on agricultural resources and no mitigation is required.

3. AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Concurrent with this analysis, the CVFA is preparing an application that will be submitted to the Sacramento Metropolitan Air Quality Management District (SMAQMD) for Authority to Construct the LM6000 upgrade. The analysis for this report was taken from that permit application, and more detailed information is provided there.

- a) The proposed upgrade would not conflict with or obstruct implementation of the applicable air quality plans. The proposed project would result in a modified base load turbine that would emit nitrogen oxides (NO_x), carbon monoxide (CO), reactive organic compounds (ROC), particulate matter less than 10 microns in diameter (PM₁₀), and sulfur oxides (SO_x). The SMAQMD application presents emissions from the upgraded base load turbine and from the modified facility, and compares these proposed emissions to the existing plant emission levels.

To ensure CO emissions remain compliant at lower temperatures, mitigation consists of close monitoring and installation of the appropriate CO catalyst, as necessary.

The modified gas turbine would result in an approximate 1.1 percent increase in the quarterly emissions in sulfur oxides (SO_x) as shown in Tables 2.3-1 and 2.3-2.

TABLE 2.3-1: Maximum Quarterly and Annual Emissions from the Modified Facility

Pollutant	1st Quarter ¹ (lb/quarter)	2nd Quarter ¹ (lb/quarter)	3rd Quarter ¹ (lb/quarter)	4th Quarter ¹ (lb/quarter)	Annual (lb/year)
NO _x	19,289	19,483	19,678	19,678	78,128
CO	48,822	49,364	49,907	49,907	198,000
ROC	8,984	9,078	9,172	9,172	36,406
SO _x	5,722	5,785	5,849	5,849	23,205
PM ₁₀	9,349	9,447	9,545	9,545	37,887

¹ Quarterly and annual emissions exclude the emergency IC engine.

TABLE 2.3-2: Quarterly Emission Changes for the Modified Gas Turbine

Pollutant	1st Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)	Increase in Quarterly Emissions?
NO _x	-6,546	-6,619	-6,692	-6,692	No
CO	0	0	0	0	No
ROC	0	0	0	0	No
SO _x	61	62	63	63	Yes
PM ₁₀	0	0	0	0	No

The increase in SO_x emissions of about 250 lb/year (1.1 percent) does not exceed the SMAQMD best available control technology (BACT) threshold. In addition, the modified gas turbine is accompanied by an approximate 25 percent decrease in NO_x emissions. This approximate increase of about 1.1 percent SO_x emissions and decrease in NO_x emissions on an annual basis would not obstruct implementation of the air quality plan. No inputs are expected and no additional mitigation is required.

- b) The SMAQMD application provides information for the Agency to determine if the project violates any air quality standards. The base load gas turbine and duct burner emit NO_x, CO, and PM₁₀. Emission factors for the existing base load gas turbine and duct burner were obtained from the existing facility's Permits to Operate No.12829 and 11014 (December 20, 2000) and Authority to Construct No. 12453 (January 18, 1996).

The project only results in SO₂ emission increases. The maximum ground-level impacts on ambient air quality for this pollutant (as modeled in the original SPPE) added to maximum observed background concentrations from 2004 through 2006, results in impacts below the applicable ambient air quality standards, as shown in Tables 2.3-3 and 2.3-4.

TABLE 2.3-3: Maximum Background Concentrations, 2004-2006 ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	2004	2005	2006
SO2	1-Hour	21	26	21
	24-hour	5.3	5.3	8.0
	Annual	2.6	2.6	2.6

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Note: All background concentrations from North Highlands – Blackfoot Way monitoring station.

TABLE 2.3-4: Modeled Maximum Project Impacts, CVFA Turbine Upgrade Project

Pollutant	Averaging Time	CVFA Project Impact ^a ($\mu\text{g}/\text{m}^3$)	Upgrade Impact ^b ($\mu\text{g}/\text{m}^3$)	Background Conc. ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	State Standard ($\mu\text{g}/\text{m}^3$)	Federal Standard ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hour	10.4	11.6	26	38	655	–
	24-hour	2.96	3.3	8.0	11.3	105	365
	Annual	0.4	0.44	2.6	3.0	–	80

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^a Entire facility including peaking turbine (from Table 9, May 1993 CEC Initial Study, Docket No. 92-SPPE-1).

^b Assumes impacts increase by 500/450 based on increase in maximum turbine firing rate.

The results indicate that the modified gas turbine will not cause or contribute to violations of any state or federal SO₂ air quality standards. Additionally, SO_x is a PM₁₀ and PM_{2.5} precursor pollutant. The SMAQMD is nonattainment for the federal and state PM₁₀ standards and for the state PM_{2.5} standard. However, the increase in SO_x emissions from the project will have an insignificant impact on PM₁₀ and PM_{2.5} ambient air quality for the following reasons:

- Project SO_x and PM₁₀ emissions have been fully mitigated;
- Any increase in PM₁₀ and PM_{2.5} ambient concentrations as a result of the small increase in SO_x emissions will be more than offset by the substantial decrease in NO_x emissions from the project; and
- A worst-case analysis of the maximum potential contribution of the increased SO_x emissions to the modeled PM₁₀ and PM_{2.5} ambient impacts indicates that the project will not contribute significantly to exceedances of the ambient air quality standards.

Section c below discusses the mitigation provided by the original project and demonstrates that project SO_x increases have been fully mitigated by the emission offsets provided when the project was originally approved by the CEC.

SO_x and NO_x are both considered to be PM₁₀ and PM_{2.5} precursor pollutants. However, SO_x is arguably a more potent PM₁₀ precursor based on analyses of emissions inventory data and particulate sample chemical compositions in the northern San Joaquin Valley. In

this area, the SO_x to PM₁₀ interpollutant conversion ratio is a roughly a factor of 2 lower than the NO_x to PM₁₀ interpollutant ratio, indicating that SO_x is twice as likely on a mass basis to form PM₁₀. (See SJVAPCD 2007 PM₁₀ Maintenance Plan and associated chemical mass balance modeling.) Therefore, in terms of potential for increasing particulate emissions, each pound of SO_x emitted is roughly equivalent to 2 pounds of NO_x. However, Table 2.3-2 indicates that the NO_x emission reductions from the project are over 100 times greater than the SO_x emission increases from the project. Thus, the project results in a net decrease in potential particulate emission formation from precursor pollutants by approximately a factor of 50 (100/2). Finally, the original CVFA project was modeled to have maximum PM₁₀ impacts of 15.5 µg/m³ for 24 hours and 2.2 µg/m³ for annual (see Table 9, May 1993 CEC Docket No. 92-SPPE-1). If we conservatively assume that all of these modeled impacts were due to the base load turbine alone, and the base load turbine was modeled at 60 lb/day and 20,805 lb/yr PM₁₀, then the maximum increased ambient impact from the SO_x emissions increase of 0.6 lb/day and 250 lb/yr, assuming all of the SO_x (MW 64) was converted to ammonium sulfate PM₁₀ (MW 132), would be as follows:

$$0.6 \text{ lb/day SO}_2 \times 132/64 \text{ MW} \times 15.5 \text{ } \mu\text{g/m}^3/60 \text{ lb/day PM}_{10} = \\ 0.3 \text{ } \mu\text{g/m}^3 \text{ increased 24-hour impact}$$

$$250 \text{ lb/yr SO}_2 \times 132/64 \text{ MW} \times 2.2 \text{ } \mu\text{g/m}^3/20,805 \text{ lb/yr PM}_{10} = \\ 0.05 \text{ } \mu\text{g/m}^3 \text{ increased annual impact}$$

These worst-case calculated impacts are considerably below the EPA significance thresholds of 5 µg/m³ for 24-hour impacts and 1.0 µg/m³ for annual impacts. Therefore, the project will not contribute significantly to exceedances of the ambient air quality standards for PM₁₀ and PM_{2.5}.

Based on the foregoing analyses, ambient air quality impacts associated with the proposed modification are expected to be negligible, and no mitigation is required.

- c) The modified gas turbine will result in an approximate 1.1 percent increase in the quarterly emissions in sulfur oxides (SO_x) as detailed in Tables 2.3-1 and 2.3-2. In addition, the modified gas turbine is accompanied by an approximate 25 percent decrease in NO_x emissions. The increase in emissions does not exceed the SMAQMD Best Available Control Technology (BACT) threshold. CO, ROC, and PM₁₀ emission rates remain unchanged from current emission rates for the base load turbine and are consistently below the current permit limits.

Mitigation has been provided for all applicable emissions increases from the original CVFA project in the form of offsets, as required under SMAQMD regulations. Only SO_x emissions increase as a result of the LM6000 upgrade. SO_x emission increases were not required to be mitigated by the SMAQMD; however, the CEC required SO_x mitigation in its SPPE. SO_x is a PM₁₀ precursor, and the combined SO_x plus PM₁₀ emissions were used in the original application to mitigate the combined SO_x and PM₁₀ emission increases. The small increase in SO_x emissions associated with the turbine upgrade project continues to be fully mitigated, as shown in Table 2.3-5.

TABLE 2.3-5: Proposed CVFA Facility Emission Mitigation

	Q1	Q2	Q3	Q4	TOTAL
Maximum Quarterly Emissions (lb/quarter)					
CVFA Plant Total PM ₁₀	9,349	9,447	9,545	9,545	37,886
CVFA Plant Total SO _x	5,661	5,724	5,786	5,786	22,957
Proposed SO _x Increase	61	62	63	63	249
Total =	15,071	15,233	15,394	15,394	61,092
Mitigation Provided (lb/quarter) ^a					
SRWTP 1993 PM ₁₀	1,727	1,661	1,587	1,296	6,271
SRWTP Road Paving PM ₁₀	2,024	2,996	2,996	2,024	10,040
Swansons 1993 PM ₁₀	7,753	6,974	7,176	8,439	30,342
Campbell Soup 2000 PM ₁₀	600	600	600	600	2,400
Swansons 1993 SO ₂	630	637	644	1,392	3,303
SRWTP 1993 SO ₂	5,861	5,638	5,388	4,398	21,285
Total =	17,995	17,906	17,791	17,549	71,241
Excess Mitigation Provided =	2,924	2,673	2,397	2,155	10,149

^a Mitigation data from Tables 13, 16, and 18 of the May 1993 CEC Initial Study, Docket No. 92-SPPE-1.

Finally, this project provides an excellent use for the digester gas produced from the SRWTP, combined with natural gas to produce electricity. It is a good example of methane gas conversion to electricity. The combustion of methane (originating from the treatment digesters) in the gas turbine reduces the greenhouse gas (GHG) mass loading from the treatment plant. Methane has a Global Warming Potential (GWP) 24 times greater than carbon dioxide. Ambient air quality impacts associated with the proposed project are expected to be less than a significant impact for the criteria pollutants for which the project region is in non-attainment under applicable federal or state ambient air quality standards, including emissions for ozone precursors. No impacts would occur and no mitigation is required.

- d) This project is not expected to expose sensitive receptors to substantial pollutant concentrations and is judged to have no impact. The CVFA is located at the SRWTP, east of the settling basins, and separated by the wetlands and buffer zone property surrounding the treatment plant. The nearest residences are located 0.83 mile to the southeast and about 1 mile to the west. The upgraded turbine would be in the same location as the original equipment and it would be more efficient. The separation would be sufficient to protect sensitive receptors from substantial pollutant concentrations.
- e) The project is not expected to create objectionable odors affecting a substantial number of people. The proposed modification to the cogeneration power plant is expected to have no impact on odor generation. The equipment upgrades to the power plant are intended to make the facility more efficient while generating more power. The modified gas turbine will result in an approximate 1.1 percent increase in the quarterly emissions in sulfur oxides (SO_x), but will not exceed the SMAQMD BACT threshold. The potential for these emissions to create any objectionable odors is judged as having no impact.

The proposed LM6000 modification would have no effects on air quality resources and no mitigation is required.

4. BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The property is located within an industrial area and has been previously used for industrial uses. The project would occur entirely within the paved and developed area of an existing power plant. The project site has virtually no resources suitable to support significant biological resources. Therefore, the project would have no impacts on any biological resources and no mitigation is required.

5. CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All of the property has been previously developed with industrial activity and is paved and constructed. The area was surveyed prior to 1993, and a determination made that the area was likely to contain a relatively high density of prehistoric cultural resources. However, since the project would not excavate any material, the LM6000 upgrade would have no impact on cultural resources and no mitigation is required.

6. GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

According to the IS/MND (1993), moderate earthquake shaking can be expected at the site during the lifetime of the Carson Cogeneration Project. The condition was to design and build the facility to withstand this level of shaking by conforming to the Zone 3 provisions of the 1991 Uniform Building Code (or latest adopted edition). The turbine upgrades will likewise comply with these seismic standards and therefore would not be damaged by expected earthquakes.

The turbine upgrades are proposed on an area that is paved and developed, and therefore would not prevent any additional mineral resources from use. As the site is paved, and the turbine upgrades would not excavate new areas, there would be no additional wind or water erosion of soils. As the project is located inside a previously constructed power plant it will not have any effect on geological features, nor be significantly damaged by expected seismic conditions, and no mitigation is required.

7. HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES POTENTIALLY SIGNIFICANT IMPACT		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VII.	Hazards and Hazardous Materials. Would the project:				
	a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The IS/MND (1993) described the analysis of potential risks to the public and identified that natural gas, anhydrous ammonia and sodium hypochlorite were hazardous materials of concern. The project would have limited amounts of ammonium hydroxide, sulfuric acid and similar materials on site to support construction. Removal and replacement of the LM6000 is expected to use small amounts of cleaners and lubricants in addition to those already present on site, but conditions are generally the same as during operation, and no new hazardous materials are anticipated. The same plans, containment structures and procedures implemented to prevent

accidental releases of dangerous quantities remain active on the project site and would remain so throughout the LM6000 modification.

Since no substantial new hazardous materials will be used to implement the project, the proposed LM6000 modification would have no effects on hazards and hazardous materials, and no mitigation is required.

8. HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VIII.	Hydrology and Water Quality. Would the project:				
	a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would not change any surface water quality, drainage patterns or contribute additional runoff to the stormwater system. Therefore, there would be no impacts to surface water, drainage patterns or stormwater runoff.

The Carson Cogeneration Project uses a combination of reclaimed water from the SRWTP and potable water, (a combination of groundwater and surface water) delivered from the SRWTP, to meet the combined evaporative cooling, sanitary and ice-making needs. Under the proposed project some of the potable water would be used for water injection. To analyze the impacts of the project, it is important to define the source and use of the various water sources. The reclaimed water source is measured by a combination of quantitative and calculated methods and is in essentially excess supply. The potable water source is metered for the combined uses of the closed cycle heat recovery steam generator boiler water for steam turbine power and extraction steam used for ice making, water injection for NO_x emissions control, balance of plant and sanitary use. Potable water is also used for ice making at the adjacent ice manufacturing plant such that higher potable water use is not generally the result of a change in power generation, but for seasonal and annual variations for ice production. The following paragraphs describe the analysis that was provided in the IS/MND (CEC 1993), the constituent parts of the water supply and conclude that potable water use would increase slightly but would remain below the quantities estimated and permitted in the SPPE.

The IS/MND determined that implementation of the project would cause a net decrease in effluent discharged to the Sacramento River as a result of the cogeneration facility's evaporation of cooling water that would come from reclaimed water. The decrease of 0.72 million gallons per day was considered insignificant when compared to typical dry weather discharge of 150 million gallons per day from the SRWTP.

The IS/MND determined that the project would use 232 acre-feet per year (AFY) of potable groundwater annually. The water would come from the Sacramento ground water basin and would contribute to the annual groundwater overdraft of 20,000 AFY (estimated in 1994). Since 1994, the Central Sacramento Valley Water Authority under Sacramento Water Agency made some political and policy directions that are improving the groundwater situation. The 1994 MND concluded that although the project would increase groundwater overdraft, it amounted to an insignificant amount (1.16 percent).

The SPPE-permitted average potable water use at the Carson Cogeneration Project was 232 AFY. In practice, the plant uses an average of 68.6 AFY with approximately 39.5 AFY going for combined cycle combustion turbine NO_x control and 4.5 AFY used for Peaker plant combustion turbine NO_x control. An additional 24.6 AFY is used for drinking water, sanitation and related uses (Balance of Plant or BOP). The adjacent ice plant used 158 AFY in 2007 for a total of 226.6 AFY.

All water for project cooling comes from reclaimed water. The estimated reclaimed water use in the SPPE was projected at 806.5 AFY, but in practice the Carson Cogeneration Project uses approximately 414 AFY.

After the Sprint upgrade, the power plant water use would increase to 107.4 AFY (55.7 AFY NO_x control + 22.6 AFY Sprint injection + 4.5 AFY Peaker NO_x control + BOP). Assuming the

water for ice production is the same (158 AFY), total water use is estimated to be 265.4 AFY. This exceeds the existing SPPE projected SWA use by 14.4 percent.

The groundwater overdraft estimated in 1993 would increase from 1.16 percent to 1.33 percent (an increase of 0.17 percent). Total plant water use for the upgrade (reclaimed water plus potable water) is 679.4 AFY, which is less than the anticipated total plant water use of 1,038.5 AFY for the original SPPE.

Subsequent to the IS/MND, groundwater challenges were addressed by a newly formed consortium of water interests including business and agricultural leaders, citizens groups, environmentalists, local governments, and water managers. The Water Forum stakeholders identified two coequal objectives documented in the Water Forum Agreement (WFA):

- Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030, and
- Preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River.

The Water Forum lead agencies (the City and County of Sacramento) certified an Environmental Impact Report in December 1999. The WFA prescribes, in addition to the recognition of current and future efforts of water purveyors, a regional conjunctive use program for the lower American River and connected groundwater basin (CCOMWP, City-County Office of Metropolitan Water Planning, 2000).

One of the seven elements of the WFA is groundwater management. A Groundwater Management Plan (GMP) is a planning tool that assists overlying water providers in maintaining a safe, sustainable and high quality groundwater resource within a given groundwater basin. Implementation of the WFA groundwater management element includes adherence to an agreed-on long-term average annual pumping limit (sustainable yield) for each of the three geographic subareas of the groundwater basin in Sacramento County. The Carson Cogeneration Project is located in the Central Basin, between the American and Cosumnes Rivers.

The Sacramento County Water Agency (SCWA) is responsible for providing wholesale water to a large portion of the Central Basin that includes the Laguna, Vineyard, Elk Grove, Rancho Cordova communities and the surrounding unincorporated area (Zone 40). SCWA diverts firm and intermittent surface water from, at, or near, the mouth of the American River or from the Sacramento River. SCWA uses groundwater and surface water conjunctively to meet water system demands. SCWA also provides the non-reclaimed water for Carson Cogeneration Project.

In parallel with the Water Forum, SCWA updated the Zone 40 Water Supply Master Plan. A goal of this plan is to ensure the long-term viability of groundwater supplies in the region. The Central Sacramento County Groundwater Basin stakeholders, in coordination with the SCWA and the Water Forum Successor Effort developed the comprehensive Central Sacramento County Groundwater Management Plan (CSCGMP) for Zone 40. The CSCGMP establishes a framework for maintaining sustainable groundwater resources for the various users overlying the Central Basin. It includes specific goals, objectives, and an action plan for the governance body as the steps necessary to manage the basin are taken in coordination with the various stakeholders. The

CSCGMP meets the requirements of the State Water Code and lays the foundation for development and implementation of an Integrated Regional Water Management Plan.

The Zone 40 GMP was created to measure the effectiveness of the conjunctive use program outlined in the Zone 40 Water Supply Master Plan. In October 2004, SCWA adopted the Zone 40 GMP (SCWA, 2004).

In addition to surface water supplies, the Water Forum determined the estimated long-term average annual sustainable yield of groundwater from the Central Basin to be 273,000 acre-feet per year. Currently, groundwater extractions are estimated to be 250,000 AF/year. (Central Sacramento County Groundwater Management Plan, Feb 2006).

As a major component of the Zone 40 water supply and identified in the SMUD PSA, SMUD assigned to SCWA 30,000 acre-feet of surface water from SMUD's water service contract with the US Bureau of Reclamation. SMUD completed that Assignment to SCWA in October 2006.

At the time of the IS/MND, the Central Basin was in a 20,000 AFY overdraft situation. Today, as a result of agreements in the groundwater management plan, the Central Basin is taking about 250,000 AFY, but can sustain 273,000 AFY on average. SMUD is contributing 30,000 AFY surface water to mitigate groundwater withdrawals. As a result, the additional extraction of about 38.8 AFY from SCWA (comprising surface and groundwater) does not cause an environmental impact and no mitigation is required.

9. LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
IX. Land Use and Planning. Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposal does not involve the development of infrastructure or other facilities that might divide an existing community. The project is consistent with current land use and zoning ordinances of the location and would cause no new impacts. The site is not located in an area that is part of a Habitat Conservation Plan or other plan intended for the protection of natural or community resources. Because the project would not change any land use, the project would have no significant impacts and no mitigation is required.

10. MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
X. Mineral Resources. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would occur within a paved and developed site. No excavation or additional paving would occur. Therefore the project would not affect the availability of mineral resources, nor the availability of future mineral resources, and no mitigation is required.

11. NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XI. Noise. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The IS/MND (1993) noted that because the project site is separated from sensitive receptors by an approximate one-mile buffer, that there would be substantial sound attenuation. Modeling for several locations indicated sound levels that were below perceptible or ambient criteria generally 33-42 dBA. With the exception of steam blows, no significant noise impacts were identified.

Construction of the upgrade will not generate any unusual noises over those typical for operation and maintenance of the plant. The project will require no steam blows. Activities needed for the upgrade are the same as those used for periodic enclosure dismantling and turbine removal for maintenance. Noise from the removal and shipping would be similar to normal noise levels and unlikely to be noticeable by the property owners or tenants in the surrounding industrial area.

With respect to operation, the SPRINT/EFS upgrade reportedly will produce a quieter exhaust flow with less vibration in downstream components than an unmodified LM6000PA (GE press release, May 6, 2006). No noise impacts could be identified from the proposed project, and no mitigation is required.

12. POPULATION AND HOUSING

ENVIRONMENTAL ISSUES		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XII.	Population and Housing. Would the project:				
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would not provide significant additional services that would induce substantial population growth either directly or indirectly. The project would not build any houses or structure that would displace existing homes, or people necessitating the construction of replacement housing. Therefore the project will not have any effect on the local population and housing, and no mitigation is required.

13. PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XIII. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project would increase slightly the number of construction and boilermaker labor occupied at the Carson Cogeneration Project during removal and installation of the turbines. However, the plant has fire protection and on-site security that would minimize any potential for additional demand on public fire or police protection. The project would provide no additional population that would place demands on schools, parks or other public facilities. Therefore, no impact on public services could be identified, and no mitigation is required.

14. RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XIV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project will not increase any existing neighborhoods, recreational areas, or regional parks. The project will not create any recreational facilities or the need for them.

The proposed LM6000 modification would have no effects on recreation resources and no mitigation is required.

15. TRANSPORTATION AND TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XV. Transportation/Traffic. Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

As stated in the City's *Traffic Impact Guidelines* (City of Sacramento, 1996), the City of Sacramento considers a significant traffic impact at an intersection if the following criteria are met:

- The addition of project-generated traffic would increase the average stopped delay by 5 seconds or more at an intersection already operating worse than LOS C.

The project would require one large flatbed truck to drive to the site, using Interstate 5 and the Meadowview or Laguna offramps. Up to 10 additional workers would drive to the site over a period of 8 weeks in order to remove and re-install. While the project would temporarily increase traffic volumes during construction, the number of vehicles is unmeasurably small relative to the traffic volumes for local areas.

The proposed LM6000 modification would have no effects on transportation resources and no mitigation is required.

16. UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. Utilities and Service Systems. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project is in an area that is already served by utilities including water, sewer and electricity. No additional facilities, beyond new service connections are required as a result of the project. There would be no new connections to the storm drain system, nor increases in the amount of Stormwater runoff as a result of the project. No additional employees will be needed to operate the facility and therefore no new sanitary facilities will be installed. Therefore there would be no additional demands on the Stormwater and wastewater treatment systems.

The project would generate small amounts of solid waste during the retrofit, consisting of wood cribbing and bracing, paper and cardboard packaging materials. The quantity is estimated to be accommodated by the existing disposal facilities and recycling centers and within the typical existing waste quantities. There would be no long-term increase in solid waste generation as a result of this project.

Water use of the project would increase approximately 14.4 percent over the currently authorized use, but this amount is not enough to require construction of new water treatment facilities or expansion of existing water treatment facilities.

The proposed LM6000 modification would have no effects on utility resources and no mitigation is required.

17. MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XVII. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects hat will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This project does not have the potential to degrade the environment, substantially reduce habitat, or affect historic or prehistoric artifacts. Cumulatively the impacts are not significant.

The proposed LM6000 modification would have no effects on the mandatory findings criteria and no mitigation is required.

3.0 LIST OF PREPARERS

The following persons prepared or participated in preparation of this IS/MND:

SMUD and CVFA

Kevin Hudson, Project Manager

Paul Olmstead, Water Contracts Specialist, Water Quality and Quantity

Stuart Husband, Environmental Specialist, Air Quality and Impacts

Sierra Research

Jeffrey Adkins, Principal, Air Quality and Impacts

URS

EJ Koford, Project Manager, Principal Author

Kent Zenobia, Principal Engineer, Air Quality and QA/QC

Rachel Avila, Environmental Planner, Author and Document Production

Rhonda Detherage, Senior Document Production Specialist

Kathy Burbridge, Administrative Assistant, Document Production

This page intentionally left blank

4.0 REFERENCES

California Energy Commission (CEC) 1993. Initial Study for Carson Energy Group and Central Valley Financing Authority's Application for a Combined Cycle Cogeneration Facility and Ice Manufacturing Plant. Docket No. 92-SPPE-1. May

California Energy Commission (CEC) 1993. Revised Initial Study Mitigated Negative Declaration (IS/MND) for Carson Energy Group and Central Valley Financing Authority's Application for a Combined Cycle Cogeneration Facility and Ice Manufacturing Plant. Docket No. 92-SPPE-1. June

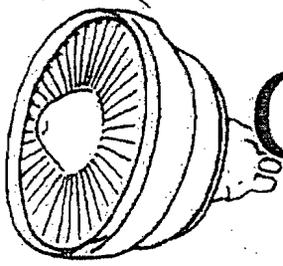
City-County Office of Metropolitan Water Planning (CCOMWP). 2000. *Memorandum of Understanding for the Water Forum Agreement*.

City of Sacramento 1996. *Traffic Impact Guidelines*. Sacramento, CA.

Sacramento County Water Agency (SCWA) 2004. *Groundwater Management Plan*. Prepared by MWH.

Sacramento County Water Agency 2006. *Central Sacramento County Groundwater Management Plan*. February

This page intentionally left blank



CVFA

Central Valley Financing Authority

P.O. Box 15830, Sacramento, CA 95852-1830

CVFA Cogeneration Project

August 7, 2008
CVFA 08-009

Sacramento County Clerk/Recorder
700 H Street, Suite 2450
Sacramento, CA 95814

**SUBJECT: NOTICE OF DETERMINATION
FINAL IS/MND FOR CENTRAL VALLEY FINANCING AUTHORITY
LM6000 UPGRADE (SCH #: 2008062015)**

Dear Sir/Madam:

Central Valley Financing Authority (CVFA) prepared a Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the above-referenced project and submitted it to the State Clearinghouse June 5, 2008 for distribution. A Notice of Availability was also submitted to the Sacramento County Clerk/Recorder the same day. The review period closed on July 7, 2008, and no state agencies submitted comments by that date. CVFA conducted additional public outreach and published notifications for the Draft IS/MND in two general circulation newspapers. No public comments were received by the closing date. Because there were no comments to the draft, CVFA adopted the IS/MND without further modifications; therefore, the Draft IS/MND is now the Final IS/MND. CVFA has adopted the Final IS/MND, approved the project, and is submitting the attached Notice of Determination and the California Department of Fish & Game Filing fee.

If you require additional information or have any questions, please do not hesitate to contact me at (916) 732-7101.

Sincerely,

Central Valley Financing Authority

Kevin Hudson, PE
Senior Project Manager

Attachments: CDFG Filing Fee, & Notice of Determination

Notice of Determination

To:

Office of Planning and Research
For U.S. Mail: Street Address:
P.O. Box 3044 1400 Tenth St.
Sacramento, CA 95812-3044 Sacramento, CA 95814

County Clerk

County of: Sacramento
Address: 700 H Street, Suite 2450
Sacramento, CA 95814

From:

Public Agency: Central Valley Financing Authority
Address: P.O. Box 15830, Mail Stop B355
Sacramento, CA 95852-1830
Contact: Kevin Hudson
Phone: (916) 732-7101

Lead Agency (if different from above):
NA

Address: _____

Contact: _____

Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2008062015

Project Title: Central Valley Financing Authority LM 6000 Upgrade

Project Location (include county): 2591 Laguna Station Road, Sacramento County, CA

Project Description:

CVFA proposes to modify the existing LM 6000 Turbine at the Carson Cogeneration Plant. The modification consists of upgrading the LM 6000 PA unit to LM 6000 PC Sprint EFS model (water injected for nitrogen oxides [NOx] control).

This is to advise that the Central Valley Financing Authority has approved the above described project on August 7, 2008 and has made the following determinations regarding the above described project:
(Date) Lead Agency or Responsible Agency

1. The project will will not have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
 A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures were were not made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan was was not adopted for this project.
5. A statement of Overriding Considerations was was not adopted for this project.
6. Findings were were not made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at: SMUD, 6201 S Street, Sacramento, CA

Signature (Public Agency) Kevin M. Hudson Title Senior Project Manager

Date August 7, 2008 Date Received for filing at OPR: _____

ENDORSED

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

AUG - 8 2008

Revised 2005

FREDERICK B. GARCIA
COUNTY CLERK/RECORDER
By [Signature]
DEPUTY

VENDOR / CUSTOMER NAME
SACRAMENTO COUNTY

INVOICE NO.	DATE	GROSS	DEDUCTIONS	DISCOUNT	NET
FILING FEE	08/04/2008	1,876.75	0.00	0.00	1,876.75

Check Amount :

*****1,876.75*

DETACH BEFORE DEPOSITING CHECK

SMUD-0279 7/05 Forms Management



SMUD

Sacramento Municipal Utility District

6201 S Street P.O. BOX 15830 Sacramento CA 95817-1899

00000479584

70-2328/0719

Bank America Illinois
Northbrook, Illinois

VOID 6 MONTHS AFTER ISSUE

VENDOR NO. 304432	DATE 08/05/2008
----------------------	--------------------

PAY EXACTLY

*****1,876.75*

*** ONE THOUSAND EIGHT HUNDRED SEVENTY-SIX USD and 75/100 ***

SMUD Commercial Disbursement Account

PAY TO THE ORDER OF SACRAMENTO COUNTY CLERK
STATE CLEARINGHOUSE AND PLANNING UN
PO Box 3044
SACRAMENTO, CA 95812-3044

REC'D # 0005519776
August 09, 2008 12:29:12 PM

Sacramento County Recorder
Frederick E. Garcia, Clerk/Recorder

Check Number 9584
RECD BY
State Fees \$1,876.75
CLERKS \$24.00
Sub Total fee \$1,900.75

Sub Total fee \$1,900.75
TMH,74/1/0

Sub Total fee \$0.00

Total fee \$1,900.75
Amount Tendered... \$1,900.75

Change \$0.00
TMH,74/1/0

Notice of Completion & Environmental Document Transmittal

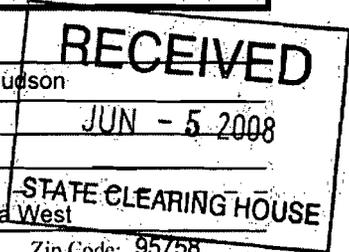
2008062015

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: LM6000 Fleet Upgrade
Lead Agency: Central Valley Financing Authority
Mailing Address: P.O. Box 15830; Mail Stop B355
City: Sacramento Zip: 95852-1830

Contact Person: Kevin Hudson
Phone: (916) 732-7101
County: Sacramento



Project Location: County: Sacramento City/Nearest Community: Elk Grove/Laguna West
Cross Streets: Glacier Way and Laguna Station Road Zip Code: 95758
Lat / Long: 38 26 44 N / 121 27 46 W Total Acres: 10 (original site)
Assessor's Parcel No.: 119-0110-004 Section: 20 Twp.: 7N Range: SE Base: MDM
Within 2 Miles: State Hwy #: Interstate 5 Waterways: Morrison Creek
Airports: Railways: UPRR Schools: Union House, Prairie

Document Type:

- CEQA: [] NOP [] Draft EIR [] NEPA: [] NOI [] Other: [] Joint Document
[] Early Cons [] Supplement/Subsequent EIR [] EA [] Final Document
[] Neg Dec (Prior SCH No.): [] Draft EIS [] Other
[] Mit Neg Dec Other: [] FONSI

Local Action Type:

- [] General Plan Update [] Specific Plan [] Rezone [] Annexation
[] General Plan Amendment [] Master Plan [] Prezone [] Redevelopment
[] General Plan Element [] Planned Unit Development [] Use Permit [] Coastal Permit
[] Community Plan [] Site Plan [] Land Division (Subdivision, etc.) [] Other

Development Type:

- [] Residential: Units _____ Acres _____ [] Water Facilities: Type _____ MGD
[] Office: Sq.ft. _____ Acres _____ Employees _____ [] Transportation: Type _____
[] Commercial: Sq.ft. _____ Acres _____ Employees _____ [] Mining: Mineral _____
[] Industrial: Sq.ft. _____ Acres _____ Employees _____ [] Power: Type Nat. Gas Uprate MW 7.9
[] Educational _____ [] Waste Treatment: Type _____ MGD
[] Recreational _____ [] Hazardous Waste: Type _____
[] Other: _____

Project Issues Discussed in Document:

- [] Aesthetic/Visual [] Fiscal [] Recreation/Parks [] Vegetation
[] Agricultural Land [] Flood Plain/Flooding [] Schools/Universities [] Water Quality
[] Air Quality [] Forest Land/Fire Hazard [] Septic Systems [] Water Supply/Groundwater
[] Archeological/Historical [] Geologic/Seismic [] Sewer Capacity [] Wetland/Riparian
[] Biological Resources [] Minerals [] Soil Erosion/Compaction/Grading [] Wildlife
[] Coastal Zone [] Noise [] Solid Waste [] Growth Inducing
[] Drainage/Absorption [] Population/Housing Balance [] Toxic/Hazardous [] Land Use
[] Economic/Jobs [] Public Services/Facilities [] Traffic/Circulation [] Cumulative Effects
[] Other

Present Land Use/Zoning/General Plan Designation:

AG-80

Project Description: (please use a separate page if necessary)

The project consists of upgrading an existing LM6000 natural gas turbine from the PA model to the PC SPRINT/EFS model in order to increase output by 7.9 megawatts, while reducing the carbon footprint on a per megawatt-hour basis. The upgrade will provide an air quality benefit by reducing nitrogen oxide emissions. The upgrade also improves the cogeneration plant efficiency, resulting in lower consumption of natural gas per megawatt-hour. The upgrade makes changes to the engine, the turbine housing internal package, controls systems, and adds a small water injection skid to improve engine efficiency by increasing the mass flow rate in the turbine.

Note: The state Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".
If you have already sent your document to the agency please denote that with an "S".

- | | |
|---|---|
| <input checked="" type="checkbox"/> Air Resources Board | <input type="checkbox"/> Office of Historic Preservation |
| <input type="checkbox"/> Boating & Waterways, Department of | <input type="checkbox"/> Office of Public School Construction |
| <input type="checkbox"/> California Highway Patrol | <input type="checkbox"/> Parks & Recreation |
| <input type="checkbox"/> Caltrans District # _____ | <input type="checkbox"/> Pesticide Regulation, Department of |
| <input type="checkbox"/> Caltrans Division of Aeronautics | <input type="checkbox"/> Public Utilities Commission |
| <input type="checkbox"/> Caltrans Planning (Headquarters) | <input type="checkbox"/> Reclamation Board |
| <input type="checkbox"/> Coachella Valley Mountains Conservancy | <input type="checkbox"/> Regional WQCB # _____ |
| <input type="checkbox"/> Coastal Commission | <input type="checkbox"/> Resources Agency |
| <input type="checkbox"/> Colorado River Board | <input type="checkbox"/> S.F. Bay Conservation & Development Commission |
| <input type="checkbox"/> Conservation, Department of | <input type="checkbox"/> San Gabriel & Lower L.A. Rivers and Mtns Conservancy |
| <input type="checkbox"/> Corrections, Department of | <input type="checkbox"/> San Joaquin River Conservancy |
| <input type="checkbox"/> Delta Protection Commission | <input type="checkbox"/> Santa Monica Mountains Conservancy |
| <input type="checkbox"/> Education, Department of | <input type="checkbox"/> State Lands Commission |
| <input checked="" type="checkbox"/> Energy Commission | <input type="checkbox"/> SWRCB: Clean Water Grants |
| <input type="checkbox"/> Fish & Game Region # _____ | <input type="checkbox"/> SWRCB: Water Quality |
| <input type="checkbox"/> Food & Agriculture, Department of | <input type="checkbox"/> SWRCB: Water Rights |
| <input type="checkbox"/> Forestry & Fire Protection | <input type="checkbox"/> Tahoe Regional Planning Agency |
| <input type="checkbox"/> General Services, Department of | <input type="checkbox"/> Toxic Substances Control, Department of |
| <input type="checkbox"/> Health Services, Department of | <input type="checkbox"/> Water Resources, Department of |
| <input type="checkbox"/> Housing & Community Development | <input checked="" type="checkbox"/> Other <u>Sacramento Reg. County Sanitation Dist.</u> |
| <input type="checkbox"/> Integrated Waste Management Board | <input checked="" type="checkbox"/> Other <u>Sac. Metro. Air Quality Management Dist.</u> |
| <input type="checkbox"/> Native American Heritage Commission | |
| <input type="checkbox"/> Office of Emergency Services | |

Local Public Review Period (to be filled in by lead agency)

Starting Date June 5, 2008 Ending Date July 7, 2008

Lead Agency (Complete if applicable):

Consulting Firm: <u>URS Corporation</u>	Applicant: <u>Central Valley Financing Authority</u>
Address: <u>2870 Gateway Oaks Drive, Ste. 150</u>	Address: <u>6201 S-Street</u>
City/State/Zip: <u>Sacramento, CA 95833</u>	City/State/Zip: <u>Sacramento, CA 95817</u>
Contact: <u>EJ Koford</u>	Phone: <u>(916) 732-7101</u>
Phone: <u>(916) 679-2270</u>	

Signature of Lead Agency Representative: *Karin M. Hudak* Date: 6/5/08

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.