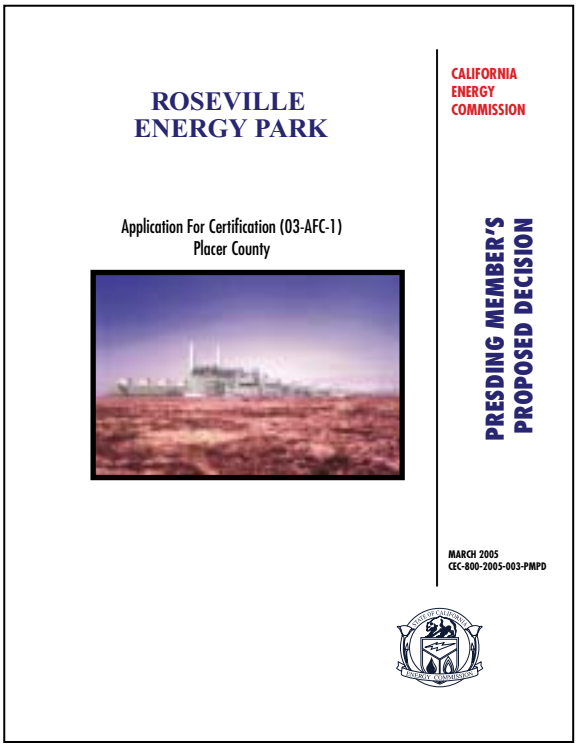
CALIFORNIA
ENERGY
COMMISSION

ROSEVILLE ENERGY PARK

Application For Certification (03-AFC-1)
Placer County

PRESIDING MEMBER'S PROPOSED DECISION

MARCH 2005
CEC-800-2005-003-PMPD



CALIFORNIA ENERGY COMMISSION

1516 9th Street
Sacramento, CA 95814
www.energy.ca.gov/sitingcases/roseville

JOHN L.GEESMAN
Presiding Committe Member

ARTHUR H. ROSENFELD, Ph.D.
Associate Committee Member

GARY FAY
Hearing Officer

COMMISSIONERS-

JACKALYNE PFANNENSTIEL
Vice Chair

JAMES D. BOYD
Commissioner

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE ROSEVILLE ENERGY PARK BY THE CITY OF ROSEVILLE	**DOCKET NO. 03-AFC-1**

The Committee hereby submits its Presiding Member's Proposed Decision for the Roseville Energy Park (Docket Number 03-AFC-1). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code of Regs., §§ 1749-1752. 5.)

We recommend the Application for Certification for the Roseville Energy Park be approved, subject to the Conditions of Certification set forth herein, and that the Commission **GRANT** the Applicant a license to construct and operate the project.

Dated March 11, 2005, at Sacramento, California.

_____
JOHN L. GEESMAN, Commissioner
Presiding Committee Member

_____
ARTHUR H. ROSENFELD, Commissioner
Associate Committee Member

TABLE OF CONTENTS

PAGE

INTRODUCTION 1
- A. SUMMARY OF THE DECISION 1
- B. SITE CERTIFICATION PROCESS 2
- C. PROCEDURAL HISTORY 5

I. PROJECT DESCRIPTION AND PURPOSE 7
- **FINDINGS AND CONCLUSIONS 14**

II. PROJECT ALTERNATIVES 15
- SUMMARY AND DISCUSSION OF THE EVIDENCE **15**
- **FINDINGS AND CONCLUSIONS 20**

III. COMPLIANCE AND CLOSURE 22
- SUMMARY AND DISCUSSION OF THE EVIDENCE **22**
- GENERAL CONDITIONS OF CERTIFICATION **23**

IV. ENGINEERING ASSESSMENT 49

- A. FACILITY DESIGN 49
  - SUMMARY AND DISCUSSION OF THE EVIDENCE **49**
  - **FINDINGS AND CONCLUSIONS 51**
  - **CONDITIONS OF CERTIFICATION 52**
- B. POWER PLANT EFFICIENCY 70
  - SUMMARY AND DISCUSSION OF THE EVIDENCE **70**
  - **FINDINGS AND CONCLUSIONS 71**
- C. POWER PLANT RELIABILITY 74
  - SUMMARY AND DISCUSSION OF THE EVIDENCE **74**
  - **FINDINGS AND CONCLUSIONS 76**
- D. TRANSMISSION SYSTEM ENGINEERING 78
  - SUMMARY AND DISCUSSION OF THE EVIDENCE **79**
  - **FINDINGS AND CONCLUSIONS 85**
  - **CONDITIONS OF CERTIFICATION 86**
- E. TRANSMISSION LINE SAFETY AND NUISANCE 92
  - SUMMARY AND DISCUSSION OF THE EVIDENCE **92**
  - **FINDINGS AND CONCLUSIONS 96**
  - **CONDITIONS OF CERTIFICATION 97**

TABLE OF CONTENTS, (Cont.)

PAGE

V. PUBLIC HEALTH AND SAFETY 100

A. AIR QUALITY 100
SUMMARY AND DISCUSSION OF THE EVIDENCE **100**
FINDINGS AND CONCLUSIONS **125**
CONDITIONS OF CERTIFICATION **126**
B. PUBLIC HEALTH 168
SUMMARY AND DISCUSSION OF THE EVIDENCE **168**
FINDINGS AND CONCLUSIONS **174**
CONDITIONS OF CERTIFICATION **175**
C. HAZARDOUS MATERIALS MANAGEMENT 176
SUMMARY AND DISCUSSION OF THE EVIDENCE **176**
FINDINGS AND CONCLUSIONS **182**
CONDITIONS OF CERTIFICATION **183**
D WASTE MANAGEMENT 185
SUMMARY AND DISCUSSION OF THE EVIDENCE **185**
FINDINGS AND CONCLUSIONS **191**
CONDITIONS OF CERTIFICATION **192**
E. WORKER SAFETY AND FIRE PROTECTION 198
SUMMARY AND DISCUSSION OF THE EVIDENCE **198**
FINDINGS AND CONCLUSIONS **200**
CONDITIONS OF CERTIFICATION **201**

VI. ENVIRONMENTAL ASSESSMENT 206

A. BIOLOGICAL RESOURCES 206
SUMMARY AND DISCUSSION OF THE EVIDENCE **206**
FINDINGS AND CONCLUSIONS **215**
CONDITIONS OF CERTIFICATION **216**
B. CULTURAL RESOURCES 226
SUMMARY AND DISCUSSION OF THE EVIDENCE **227**
FINDINGS AND CONCLUSIONS **228**
CONDITIONS OF CERTIFICATION **229**
C. GEOLOGY AND PALEONTOLOGY 238
SUMMARY AND DISCUSSION OF THE EVIDENCE **238**
FINDINGS AND CONCLUSIONS **240**
CONDITIONS OF CERTIFICATION **246**
D. SOIL AND WATER RESOURCES 250
SUMMARY AND DISCUSSION OF THE EVIDENCE **250**
FINDINGS AND CONCLUSIONS **263**
CONDITIONS OF CERTIFICATION **264**

TABLE OF CONTENTS, (Cont.)

PAGE

VII. LOCAL IMPACT ASSESSMENT 270

A. LAND USE 270
SUMMARY AND DISCUSSION OF THE EVIDENCE **270**
FINDINGS AND CONCLUSIONS **276**
CONDITIONS OF CERTIFICATION **277**
B. TRAFFIC AND TRANSPORTATION 280
SUMMARY AND DISCUSSION OF THE EVIDENCE **280**
FINDINGS AND CONCLUSIONS **290**
CONDITIONS OF CERTIFICATION **291**
C. VISUAL RESOURCES 298
SUMMARY AND DISCUSSION OF THE EVIDENCE **298**
FINDINGS AND CONCLUSIONS **316**
CONDITIONS OF CERTIFICATION **317**
D. NOISE AND VIBRATION 324
SUMMARY AND DISCUSSION OF THE EVIDENCE **324**
FINDINGS AND CONCLUSIONS **329**
CONDITIONS OF CERTIFICATION **329**
E. SOCIOECONOMICS 336
SUMMARY AND DISCUSSION OF THE EVIDENCE **336**
FINDINGS AND CONCLUSIONS **339**

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

INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision contains the Committee's rationale in determining that the Roseville Energy Park Project (REP or Project) complies with all applicable laws, ordinances, regulations, and standards, and may therefore be licensed. It is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the REP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The REP is a nominal 160 megawatt (MW), natural gas-fired, combined-cycle generating facility located west of the downtown portion of the City of Roseville, in Placer County. The REP will be located on a 12-acre site that lies within a 40-acre parcel owned by the City of Roseville, within the limits of the City of Roseville and is adjacent to and north of the Pleasant Grove Waste Water Treatment Plant.

Roseville Electric anticipates commencing construction of the REP upon Commission approval and, based on a 15-month construction schedule, plans to begin full operations by late 2007. During the peak construction period, the Project will provide a maximum of 206 construction jobs. During operation, the Project will employ approximately 25 permanent full-time employees. Applicant

[1] The Reporter's Transcript of the evidentiary hearings is cited as "1/25/05 RT, 25." The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in Appendix C of this Decision.

estimates the capital costs associated with the Project to be $100 to 130 million. (Ex. 1, p. 8.10-10.)

By the time of the prehearing conference on January 6, 2005, the Applicant and Staff had resolved most issues. At the prehearing conference the Committee heard from each party on the nature of the few remaining areas of dispute. The Committee encouraged further resolution of these matters and the parties accomplished this resolution during subsequent workshop discussions. By the evidentiary hearings the only question remaining concerned mitigation for potential ground-hugging plume formation resulting from operation of the cooling towers. REP and Staff agreed on appropriate mitigation language prior to filing briefs on February 14, 2005.

Several governmental agencies, such as the City of Roseville, Placer County, the California Independent System Operator, and the Sacramento Metropolitan Air Pollution Control District cooperated with the California Energy Commission (Commission) in completing this review process.

B. SITE CERTIFICATION PROCESS

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

The Commission's certification process provides a thorough review and analysis of all aspects of the proposed power plant project. During this process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications. Section 25523(h) of the Public Resources Code also requires a discussion of the project's benefits. We address this issue in the **Socioeconomics** section of the Decision in which we find that the REP will provide local economic benefits and energy reliability to the Roseville area.

The Commission's process encourages public participation so that members of the public may become involved either informally or, on a more formal level, as Intervenors with an opportunity to present evidence and cross-examine witnesses. The only formal Intervenor was the California Unions for Reliable Energy (CURE).

The process begins when an Applicant submits the AFC. Commission staff reviews the data submitted as part of the AFC and recommends to the Commission whether the AFC contains adequate information to begin the review. Once the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such technical information as is necessary. During this time, the Commission staff sponsors numerous public workshops at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of a project in a document called the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the

PSA and its complete analyses are then published in the Final Staff Assessment (FSA).

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order and schedules formal evidentiary hearings. At these hearings, all entities that have formally intervened as parties may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public who have not intervened may present public comments. Evidence adduced during these hearings provides the basis for the Presiding Member's Proposed Decision (PMPD). In the PMPD, the Committee evaluates the evidence presented, determines a project's conformity with applicable laws, ordinances, regulations, and standards, and provides recommendations to the full Commission.

The PMPD is available for a 30-day public comment period. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, this Revised PMPD triggers an additional 15-day public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal Intervenors function independently and with equal legal status. An "ex parte" rule prohibits parties from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications are made on the public record. The Office of the Public Adviser is available to inform members of the

public concerning the certification proceedings and to assist those interested in participating.

C. PROCEDURAL HISTORY

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

On October 30, 2003, the City of Roseville's electric department, doing business as Roseville Electric (RE or Applicant) filed an Application for Certification with the Commission. On December 17, 2003, the Commission accepted the AFC as data adequate and commenced the review process. It also assigned a Committee of two Commissioners to conduct proceedings.

On January 5, 2004, the Committee issued a notice of "Informational Hearing and Site Visit." The notice was mailed to members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the REP. The notice was also published in a local general circulation newspaper.

The Committee conducted the Informational Hearing and Site Visit in the City of Roseville on January 28, 2004. At that event the Committee, the parties, and other participants discussed the proposal for developing the REP, described the Commission's review process, and explained opportunities for public participation. The participants also viewed the site where the REP will be situated. On February 2, 2004, the Committee issued a Scheduling Order.

As part of the review process, Staff conducted public workshops on January 28, 2004, April 15 and 29, 2004; July 20, 2004; and on September 8, 2004, to discuss issues of concern with the Applicant, governmental agencies, and interested members of the public. Staff issued its Final Staff Assessment (FSA) on November 30, 2004.

The Committee, by Notice dated December 6, 2004, scheduled a Prehearing Conference and additional Site visit for January 6, 2005. On January 25, 2005, the Committee held an Evidentiary Hearing.

After reviewing the evidentiary record and exhibits, the Committee published the PMPD on March 11, 2005, and scheduled a Committee Conference for April 7, 2005 in Hearing Room A at the Commission to discuss comments submitted. The 30-day comment period on the PMPD ends April 11, 2005. The Commission will consider the PMPD at its April 13, 2005 Business Meeting.

I. PROJECT DESCRIPTION AND PURPOSE

POWER PLANT

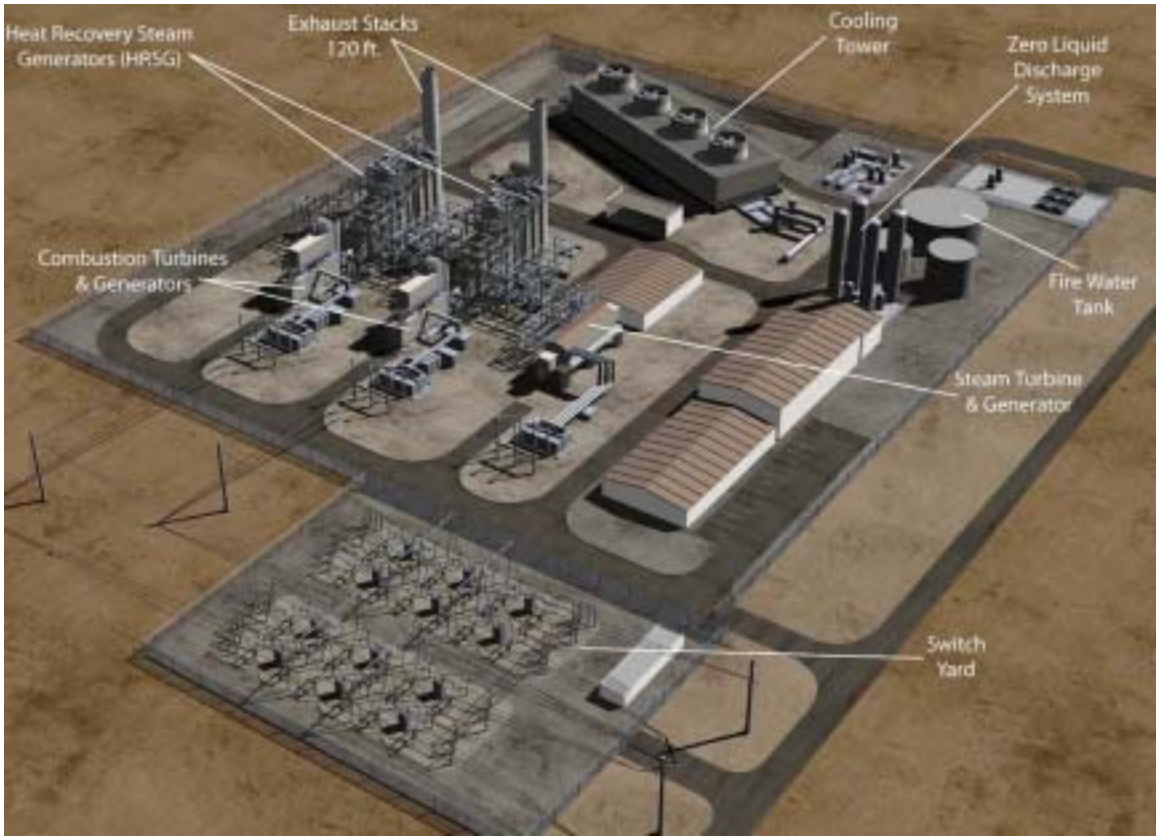
The Roseville Energy Park (REP) would be located on an 8.9-acre site that lies within a 40-acre City of Roseville parcel. The project site is within the limits of the City of Roseville, adjacent to and north of the Pleasant Grove Waste Water Treatment Plant (PGWWTP). The project site is owned by the City of Roseville and is zoned Public/Quasi-Public. (1/25/05 RT 12; Ex. 47, pp. 3-1 – 3-4)

Surrounding land uses currently include ranching (agricultural grazing) and rural residential. The area to the south, east, and west of the project, however, is proposed for residential, industrial, and commercial development under the West Roseville Specific Plan (WRSP). A high school will be located approximately 2,300 feet southeast from the project site. The WRSP is a plan for annexation and development of 3,162 acres and was approved by the City Council in February, 2004. Build-out of the WRSP will take place over approximately 15 years. (*Ibid*.)

Project Equipment and Linear Facilities

As proposed, the REP power train would consist of the following:

- two General Electric LM6000 PC SPRINT or Alstom GTX100 combustion turbine-generators (CTGs), equipped with water injection (for the LM6000) or dry low-NO_x combustors (for the GTX100) to control oxides of nitrogen (NO_x) and evaporative coolers for reducing inlet air temperatures;
- two heat recovery steam generators (HRSGs) with duct burners;
- selective catalytic reduction (SCR) and oxidation catalyst equipment to control NO_x and carbon monoxide (CO) emissions, respectively;
- a single condensing steam turbine generator (STG);
- a de-aerating surface condenser;
- a mechanical draft cooling tower; and
- associated support equipment.



Each CTG would generate approximately 43 to 47 MW at annual average ambient conditions. The CTG exhaust gases would be used to generate steam in the HRSGs. The HRSGs would employ a two-steam-pressure design with duct firing equipment. Steam from the HRSGs would be directed into a condensing STG. The STG would produce approximately 75 to 87 MW under average annual ambient conditions with HRSG duct firing. The project is expected to have an overall annual availability of approximately 95 percent.

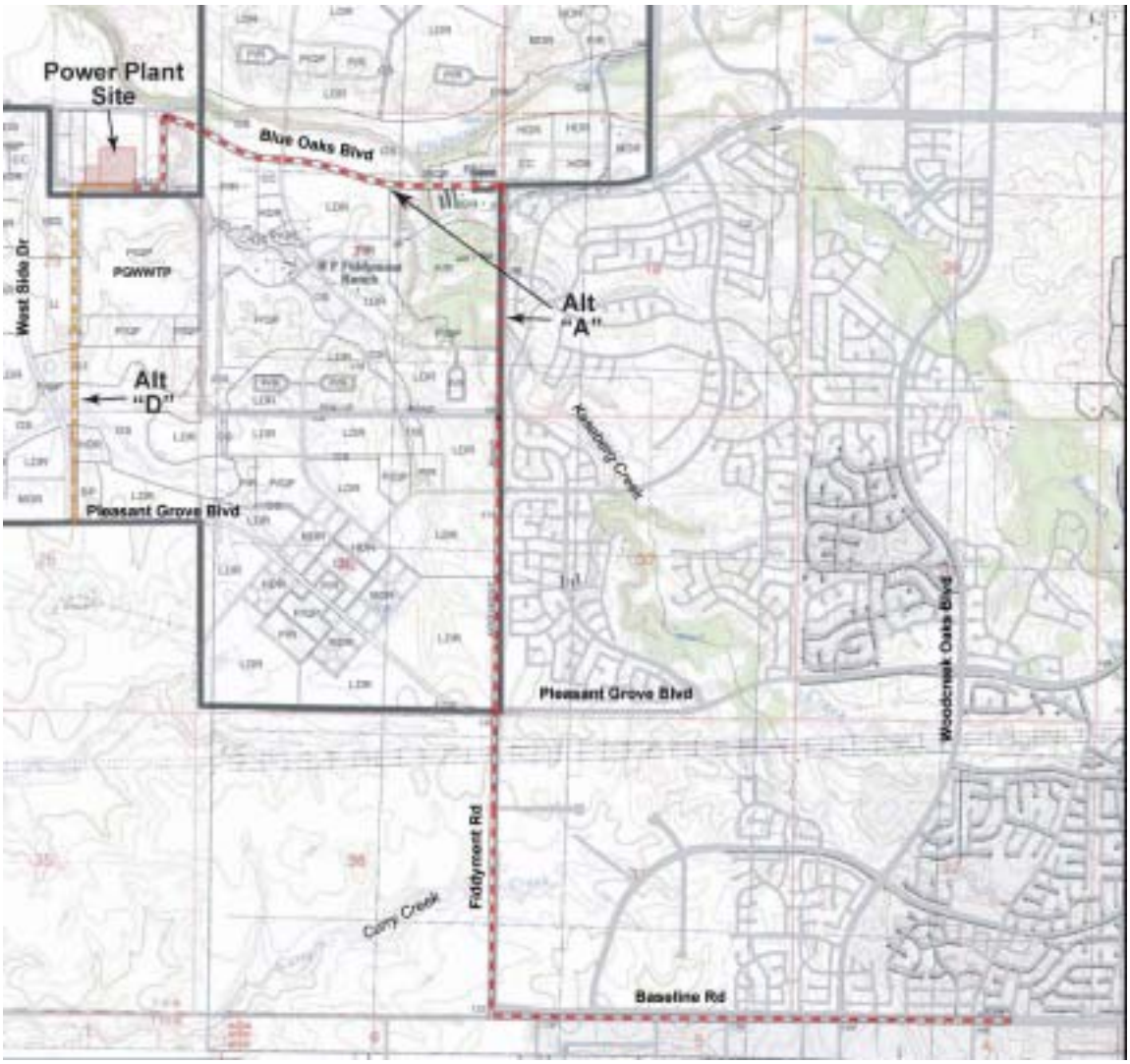
Associated equipment includes the emission control systems needed to meet the proposed emission limit of 2 ppmvd for oxides of nitrogen (NO_x) by a combination of water-injection or dry low NO_x combustors in the CTGs and a selective catalytic reduction (SCR) system in the HRSGs. Carbon monoxide (CO) would be controlled to a maximum of 4.0 ppmvd by an oxidation catalyst. (*Ibid.*)

Natural Gas Facilities

The REP would be designed to burn only natural gas. Under average ambient conditions, the REP would consume 19,820 million Btu per day, without HRSG duct firing. Natural gas would be delivered to the site via a new pipeline to be designed, constructed, and owned by PG&E. At this point in the proceeding, there are only two alternative routes remaining under consideration by the Applicant, Alternative “A” and Alternative “D”. Both routes were analyzed by Energy Commission Staff.

Alternative “A” pipeline would extend from its interconnection to PG&E’s Line 123 near the corner of Baseline and Country Club roads. The pipeline would travel west along Baseline Road and turn north along Fiddyment Road. At the intersection with Blue Oaks Boulevard, the route turns west into the WRSP area and continues along the future extension of Blue Oaks Boulevard. The pipeline would then turn south into the future alignment of Phillip Road and then west on

the existing alignment of Phillip Road. The pipeline would then turn into the REP site at the gas metering station.



Alternative “A” was chosen by the Applicant in order to avoid the 1,500 foot distance criterion established by the California Department of Education for placement of hazardous materials (i.e., natural gas) within close proximity of proposed school sites designated in the West Roseville Specific Plan.

Construction of the pipeline would be primarily by open trench. However, where the pipeline crosses busy paved roads, jack and bore techniques may be used for the crossing. The crossing of Kaseberg Creek would use horizontal directional drill (HDD) techniques.

Alternative "D" replaces Alternatives B, B1, and C described in the AFC as filed in October 2003. Alternative "D" begins near the corner of future Pleasant Grove Boulevard and future West Side Drive, as these roadways are described in the WRSP. It travels north along the east side of West Side Drive, running in a 35-foot-wide utility easement that has been planned as part of the WRSP. Just north of Pleasant Grove Boulevard, the route diverges from West Side Drive, running due north in the utility easement. This route crosses areas planned for residential, open space, and light and general industry in the WRSP, running north for approximately 1.2 miles to Phillip Road along the western boundary of the Pleasant Grove Waste Water Treatment Plant. At Phillip Road, the route turns east, running in Phillip Road to the gas metering station located in the southeast corner of the power plant site. The length of Alternative D is 1.5 miles. (Ex. 47, pp. 3-2, 3-3.)

PG&E has proposed Alternative "D" as a more practicable and cost-effective alternative routing for the project than Alternative "A". This new routing would be consistent with PG&E's planned distribution system for the future growth in West Roseville. Based on an analysis of projected future demand for natural gas in West Roseville, PG&E plans to install a gas distribution feeder main between distribution line 123 and a new distribution regulation station to be located near the intersection of Pleasant Grove Boulevard and West Side Drive. The REP's first point of interconnection would be the new PG&E distribution feeder main at Pleasant Grove Boulevard. To serve the REP, PG&E would tap the distribution feeder main and install a 10-inch pipeline to the REP. (*Ibid.*)

Water Supply

The City of Roseville would provide the industrial process water supply for the REP from the adjoining PGWWTP. The PGWWTP would supply tertiary-treated, recycled water to meet cooling and other process makeup, landscape irrigation, and fire fighting requirements.

Water required for potable uses would initially be provided from an existing well located on the REP site. The City of Roseville potable water distribution system would eventually be extended to serve the area surrounding the REP site as part of the build-out of the WRSP. When this occurs, the REP's potable water system would be connected to the City water main, and the on-site well would be disconnected. (Ex. 47, p. 3-3.)

Electric Transmission

Electricity produced by the facility would be transmitted to the Roseville Electric grid. The generator output would be connected to three step-up transformers which would increase the voltage to 60 kV. Each transformer would then connect to the REP switchyard. From the switchyard, power would be transmitted to RE's grid by looping a new 60 kV transmission line into the REP switchyard. This new 60 kV line, constructed as part of the West Roseville Specific Plan (WRSP) build-out, would be a double-circuit line running from RE's Fiddyment Receiving Station to a new WRSP substation and passing adjacent to the REP. The new WRSP 60 kV lines would be routed along the south boundary of the REP site. (*Ibid.*)

PROJECT CONSTRUCTION

Construction of the REP would take place over approximately 15 months, from Spring 2005 to the Summer of 2006. Plant testing is expected to commence in the Fall of 2006, with commercial operation expected in the Summer of 2007.

PROJECT PURPOSES AND OBJECTIVES

The Applicant's stated objectives (1/25/05 RT 4-12; Ex. 1, pp. 1-2 to 1-5) for constructing the REP project are:

- To safely construct and operate a nominal 160-MW, natural gas-fired, combined-cycle generating facility within the RE service area.
- To provide additional generation to meet RE's growing load and meet the demands of customers within RE's service area.
- To improve service area reliability by connecting directly to the RE distribution grid.
- To improve overall grid reliability by locating generation in or near the load centers.
- To provide local generation as an alternative to contractual supplies so as to better manage the City's economic risks.

FACILITY CLOSURE

The planned life of the REP facility is 30 years or longer. Whenever the facility is closed, either temporarily or permanently, the closure procedures included in this Decision will ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

FINDINGS AND CONCLUSIONS

Based upon the evidentiary record, we find as follows:

1. The City of Roseville will own and operate the REP Project.

2. The REP Project involves the construction and operation of a nominal 160-megawatt natural gas-fired, combined-cycle electrical generating facility in Roseville, California.

3. The Project includes a natural gas pipeline; two new 60 kV double-circuit overhead transmission lines, extending to RE's Fiddyment Receiving Station; a one-mile recycled water line from the adjacent Pleasant Grove Waste Water Treatment Plant; and an on-site domestic water well.

4. The Project and its objectives are adequately described by the relevant documents contained in the record.

5. The Project will permanently occupy approximately 9 acres of a 40 acre site.

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

II. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Commission's regulations require an evaluation of the comparative merits of a range of site and facility alternatives, including the "no project' alternative, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the project's significant adverse effects[2]. [14 Cal. Code of Regs., § 15126.6(c).] The range of alternatives that we are required to consider is governed by a "rule of reason."

Applicant provided an "alternatives analysis" as part of its AFC (Ex. 1, Section 9.0.) describing its selection process for the proposed site and project configuration in light of the project objectives. Staff also conducted a similar analysis which is included in the FSA. (Ex. 47, sec.6.) The parties expressed no disagreement over the substantive issues covered in this topic area. (1/25/05 RT 40-41.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

In order to assess the feasibility of alternatives to the project in light of the stated objectives, Staff's analysis:

- identified the basic objectives of the project, provided an overview, and described its potential significant adverse impacts;
- identified and evaluated alternative sites in terms of whether the alternative site mitigated identified impacts of the proposed project and whether the alternative site created impacts of its own;
- identified and evaluated technology alternatives to the project, including conservation and renewable sources; and

[2] Based on the totality of the record and as reflected in our discussion and findings for each of the technical topic areas the REP, as mitigated, will not result in significant adverse effects on the environment. We include the analysis of project alternatives to ensure that our certification review conforms with requirements of the CEQA Guidelines and the Energy Commission's regulations.

- evaluated the impacts of not constructing the project, known as the No Project Alternative under CEQA. (Ex. 47, p. 6-1.)

1. Alternative Sites

The evidence contains an evaluation of the locations shown on **Alternatives, Figure 1.** Staff applied evaluation criteria for each of the proposed sites to determine whether each alternative site would provide:

- more than 1,000 feet from the nearest residential uses or other sensitive receptor;
- near the centers of demand for maximum efficiency and system benefit;
- land zoned for industrial use or heavy industry;
- access to tertiary treated waste water from the Dry Creek or Pleasant Grove Waste Water Treatment Plant for cooling water;
- near electrical transmission facilities;
- near reliable natural gas supply;
- a parcel or adjoining parcels of sufficient size for a power plant and construction laydown areas;
- site control (lease or ownership);
- minimum construction impacts to existing residences and businesses;
- feasible mitigation of potential environmental impacts.

In each instance, the evidence establishes that the alternative sites would have similar, if not additional, impacts when compared to the proposed site. (Ex. 47, pp. 6-3 to 6-9.)

2. Alternative Technologies

The evidence contains an examination of four alternative generation technologies: solar; wind; biomass; and hydropower. (Ex. 47, pp. 6-7 to 6-10.)

Currently available solar generation is of two types: solar thermal power and photovoltaic (PV) power. Solar thermal is suitable for distributed or centralized generation, but requires far more land than conventional natural gas power plants. Solar parabolic trough systems, for instance, use approximately 5 acres to generate one megawatt. (Ex. 47, p. 6-8.) Photovoltaic (PV) generation uses special semiconductor panels to convert sunlight into electricity. Arrays built from the panels can be mounted on the ground or on buildings, where they can also serve as roofing material. Unless PV systems are constructed as integral parts of buildings, the most efficient PV systems require about 4 acres of ground area per megawatt of generation.

Solar resources would thus require large land areas in order to generate 160 MW of electricity. Specifically, a 160 MW central receiver solar thermal project would require approximately 800 acres. Using PV to produce 160 MW would require approximately 640 acres. Either of these technologies would use significantly more land area than the 12 acres required for the REP.

Although air emissions are significantly reduced or eliminated for solar facilities, these facilities can have significant visual effects. Solar generation results in the absence or reduction in air pollutant emissions, and visible plumes. Water consumption for solar generation is substantially less than for a geothermal or natural gas fired plant because there is no thermal cooling requirement. In addition, the large avian populations, migratory bird pathways, and relatively large populations of threatened or endangered birds in an area would require careful analysis of potential impacts from either solar or PV generation at the scale required for a 160 MW facility.

Solar thermal facilities and PV generation require near access to transmission lines. Additionally, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of sunlight. Therefore, solar thermal

power and photovoltaic power generation would not successfully meet the project objectives.

Although air emissions are significantly reduced or eliminated by using wind facilities, they can have significant visual effects. In addition, wind turbines can cause bird mortality (especially for raptors) resulting from collision with rotating blades. Wind resources would also require large land areas in order to generate 160 MW of electricity. Depending on the size of the wind turbines, wind generation "farms" generally require between 5 and 17 acres to generate one megawatt. This results in the need for between 800 and 1,820 acres to generate 160 MW. (Ex. 47, p. 6-9.)

Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. However, Staff's testimony indicates that biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity planned for the REP project.
(Ex. 47, p. 6 -9.)

While hydropower does not require burning fossil fuels and may be available, this power source can cause significant environmental impacts primarily due to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. Because of these impacts, it is extremely unlikely that new hydropower facilities will be developed and permitted in California within the next several years. (Ex. 47, pp. 6-9 to 6-10.)

Therefore, none of the alternative technologies analyzed appear able superior to the Project in their ability to provide load serving capability needed to provide a reliable supply of electricity and thus fulfill a basic project objective. (Ex. 47, p. 6-10.)

3. No Project Alternative

The purpose for this portion of the analysis of record is:

> "… to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." [14 Cal. Code Regs., § 15126.6(e)(1).]

The No Project Alternative under CEQA assumes that the REP project is not constructed. In the CEQA analysis, the No Project Alternative is compared to the proposed project and determined to be superior, equivalent, or inferior to it. The CEQA Guidelines state that "the purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" [Cal. Code Regs., tit. §15126.6(i)]. Toward that end, the No Project analysis considers "existing conditions" and "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" [§15126.6(e)(2)].

If the REP facility was not constructed, the proposed site, adjacent to the recently approved West Roseville Specific Plan (WRSP) area and the Pleasant Grove Waste Water Treatment Plant would likely be developed for some other industrial use. However, if the REP was not constructed, it would not contribute to Roseville Electric and California's electricity resources, increase competition, and help form a more reliable electric system.

FINDINGS AND CONCLUSIONS

Based upon the totality of the evidence of record, including that relating to each subject area contained in other portions of this Decision, we find and conclude as follows:

1. The evidence of record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.
2. The evidentiary record contains an adequate review of alternative sites, linear routings, technologies, and the “no project” alternative.
3. Technology alternatives such as solar, wind, biomass, or hydropower are not capable of meeting project objectives.
4. No alternative to the project is capable of meeting the stated project objectives.
5. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been established.
6. The “no project” alternative would not provide electrical system benefits.
7. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the WEC will not create any significant direct, indirect, or cumulative adverse environmental impacts.

We conclude, therefore, that the evidence of record contains a sufficient analysis of alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations. No Conditions of Certification are required for this topic.

III. COMPLIANCE AND CLOSURE

Public Resources Code section 25532 requires the Commission to establish a post-certification monitoring system. The purpose of this requirement is to assure that certified facilities are constructed and operated in compliance with applicable laws, ordinances, regulations, and standards, as well as the specific Conditions of Certification adopted as part of this Decision.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Commission verifies compliance with the Conditions of Certification contained in this Decision through mechanisms such as periodic reports and site visits. The Compliance Plan (Plan) is the administrative mechanism by which the Commission ensures that the REP is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of RE and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision. The Plan also contains requirements governing the planned closure, as well as the unexpected temporary or permanent closure, of the project. The evidence of record contains a full explanation of the purposes and intent of the Plan.

The Plan has two broad elements. The first element is the "General Conditions." These General Conditions:

- Set forth the duties and responsibilities of the CPM, RE, delegate agencies, and others;
- Set forth the requirements for handling confidential records and maintaining the compliance record;
- Establish procedures for settling disputes and making post-certification changes;
- State the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission-imposed conditions; and

- Establish requirements for facility closure.

The second general element of the Plan contains the specific "Conditions of Certification." These are found following the summary and discussion of each individual topic area in this Decision. The individual conditions contain the measures required to mitigate to an insignificant level potentially adverse project impacts associated with construction, operation, and closure. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied. The contents of the Compliance Plan are intended to be read in conjunction with any additional requirements contained in the individual Conditions of Certification. (Ex. 47, pp. 7-1 to 7-21.)

We therefore conclude that the compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code Section 25532. Furthermore, we adopt the following Compliance Plan and General Conditions of Certification as part of this Decision.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

To ensure consistency, continuity, and efficiency, the following terms, as defined, apply to all technical areas, including Conditions of Certification:

Site Mobilization

Moving trailers and related equipment onto the site, usually accompanied by minor ground disturbance, grading for the trailers and limited vehicle parking, trenching for construction utilities, installing utilities, grading for an access corridor, and other related activities. Ground disturbance, grading, etc. for site mobilization are limited to the portion of the site necessary for placing the trailers and providing access and parking for the occupants. Site mobilization is for temporary facilities and is, therefore, not considered construction.

Ground Disturbance

On-site activity that results in the removal of soil or vegetation, boring, trenching, or alteration of the site surface. This does not include driving or parking a passenger vehicle, pickup truck, or other light vehicle, or walking on the site.

Grading

On-site activity conducted with earth-moving equipment that results in alteration of the topographical features of the site such as leveling, removal of hills or high spots, or moving soil from one area to another.

Construction

[From section 25105 of the Warren-Alquist Act.] Onsite work to install permanent equipment or structures for any facility. Construction does **not** include the following:

a) the installation of environmental monitoring equipment;

b) a soil or geological investigation;

c) a topographical survey;

d) any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; or

e) any work to provide access to the site for any of the purposes specified in a., b., c., or d, above.

Start of Commercial Operation[3]

For compliance monitoring purposes, "commercial operation" is that phase of project development which begins after the completion of start-up and commissioning, where the power plant has reached steady-state production of electricity with reliability at the rated capacity. For example, at the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

[3] A different definition of "Start of Commercial Operation," may be included in the **Air Quality** (AQ) section (per District Rules or Federal Regulations). In that event, the definition included in the AQ section would only apply to that section.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

A Compliance Project Manager (CPM) will oversee the compliance monitoring and shall be responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;
2. resolving complaints;
3. processing post-certification changes to the Conditions of Certification, project description, and ownership or operational control;
4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a Condition of Certification requires CPM approval, the approval will involve all appropriate Staff and management.

The Energy Commission has established a toll free compliance telephone number of **1-800-858-0784** for the public to contact the Energy Commission about power plant construction or operation-related questions, complaints, or concerns.

Pre-Construction and Pre-Operation Compliance Meeting

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings will be to assemble both the Energy Commission's and the project owner's technical staff to review the status of all pre-construction or pre-operation requirements contained in the Energy Commission's Conditions of Certification to confirm that they have been met, or if they have not been met, to ensure that the proper action is taken. In addition, these meetings shall ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

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

1. all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;
2. all monthly and annual compliance reports filed by the project owner;
3. all complaints of noncompliance filed with the Energy Commission; and
4. all petitions for project or condition changes and the resulting Staff or Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the Conditions of Certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the Conditions of Certification or the general compliance conditions may result in reopening of the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate. A summary of the General Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section. The designation after each of the following summaries of the General Compliance Conditions (**COM-1, COM-2,** etc.) refers to the specific General Compliance Condition contained in **Compliance Table 1.**

COM-1, Unrestricted Access

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

COM-2, Compliance Record

The project owner shall maintain project files on-site, or at an alternative site approved by the CPM, for the life of the project unless a lesser period of time is specified by the Conditions of Certification. The files shall contain copies of all

"as-built" drawings, all documents submitted as verification for conditions, and all other project-related documents.

COM-3, Compliance Verification Submittals

Each Condition of Certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions.

Verification of compliance with the Conditions of Certification can be accomplished by:

1. reporting on the work done and providing the pertinent documentation in monthly and/or annual compliance reports filed by the project owner or authorized agent as required by the specific Conditions of Certification;
2. providing appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of mitigation or other evidence of mitigation.

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

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

All submittals shall be addressed as follows:

Compliance Project Manager
Docket Number 03-AFC-1
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

If the project owner desires Energy Commission staff action by a specific date, it shall so state in its submittal and include a detailed explanation of the effects on the project if this date is not met.

COM-4, Pre-Construction Matrix and Tasks Prior to Start of Construction

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

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times (e.g., 30, 60, 90 days) for submittal of compliance verification documents to the CPM for Conditions of Certification are established to allow sufficient Staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

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

Verification lead times (e.g., 90, 60 and 30-days) associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

It is important that the project owner understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change based upon the Final Decision.

EMPLOYEE ORIENTATION

Environmental awareness orientation and training will be developed for presentation to new employees during project construction as approved by Energy Commission staff and described in the conditions for Biological, Cultural, and Paleontological resources. At the time this training is presented, the project owner's representative shall present information about the role of the Energy Commission's delegate Chief Building Official (CBO) for the project. The role and responsibilities of the CBO to enforce relevant portions of the Energy Commission Decision, the CBSC, and other relevant building and health and safety requirements shall be briefly presented. As part of that presentation, new

employees shall be advised of the CBO's authority to halt project construction activities, either partially or totally, or take other corrective measures, as appropriate, if the CBO deems that such action is required to ensure compliance with the Energy Commission Decision, the CBSC, and other relevant building and health and safety requirements. At least 30 days prior to construction, the project owner shall submit the proposed script containing this information for CPM review and approval.

COMPLIANCE REPORTING

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

COM-5, Compliance Matrix

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

1. the technical area;
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., "not started," "in progress," or "completed" (include the date); and
8. the project's preconstruction and construction milestones, including dates and status (if milestones are required).

Satisfied conditions do not need to be included in the compliance matrix after they have been identified as satisfied in at least one monthly or annual compliance report.

COM-6, Monthly Compliance Report

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and ten copies (or amount specified by the Compliance Project Manager) of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix which shows the status of all Conditions of Certification;
4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions which satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to Conditions of Certification;
7. a listing of any filings with, or permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with Conditions of Certification;
9. a listing of the month's additions to the on-site compliance file;
10. any requests, with justification, to dispose of items that are required to be maintained in the project owner's compliance file; and

11. a listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolutions of any resolved complaints, and the status of any unresolved complaints.

COM-7, Annual Compliance Report

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

1. an updated compliance matrix which shows the status of all Conditions of Certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;
4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings made to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section]; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.

COM-8 – Construction and Operations Security Plan

At least 14 days prior to commencing construction, a site-specific Security Plan for the construction phase shall be submitted to the CPM for approval. At least 30 days prior to the initial receipt of hazardous materials on-site, a site-specific Security Plan for the operational phase shall be submitted to the CPM for review and approval.

Construction Security Plan

Thirty days prior to commencing construction, a site-specific Security Plan for the construction phase shall be developed and maintained at the project site. The Construction Security Plan shall include the following:

1. site fencing enclosing the construction area;
2. use of security guards;
3. check-in procedure or tag system for construction personnel and visitors;
4. protocol for contacting law enforcement and the CPM in the event of emergency or any suspicious conduct endangering the facility, its employees or contractors; and
5. evacuation procedures.

Operations Security Plan

The Operations Security Plan shall include the following:

1. permanent site fencing and security gate;
2. evacuation procedures;
3. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
4. fire alarm monitoring system;
5. site personnel background checks, including employee and routine on-site contractors [Site personnel background checks are limited to ascertaining that the employee's claims of identity and employment history are accurate. All site personnel background checks shall be consistent with state and federal law regarding security and privacy.];

6. site access for vendors; and

7. requirements for Hazardous Materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, Subparts A and B.

In addition, the Security Plan shall include one or more of the following in order to ensure adequate perimeter security:

1. security guards;

2. security alarm for critical structures;

3. perimeter breach detectors and on-site motion detectors; and

4. video or still camera monitoring system.

The Project Owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the Security Plan. The CPM may authorize modifications to these measures, or may recommend additional measures depending on circumstances unique to the facility, and in response to industry-related security concerns.

COM-9, Confidential Information

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

COM-10, Department of Fish and Game Filing Fee

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of $850. The payment instrument shall be provided to the Energy Commission's Project Manager (PM), not the CPM, at the time of project certification and shall be made payable to the California Department of Fish and Game. The PM will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision.

COM-11, Reporting of Complaints, Notices, and Citations

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

http://www.energy.ca.gov/sitingcases/power_plants_contacts.html

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

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

Facility Closure

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

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner remains accountable for implementing the on-site contingency plan. It can also include unplanned closure where the project owner is unable to implement the contingency plan, and the project is essentially abandoned.

GENERAL CONDITIONS FOR FACILITY CLOSURE

COM-12, Planned Closure

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

The plan shall:

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

2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on-site after closure, the reason, and any future use therefor; and
4. address conformance of the plan with all applicable LORS and local/regional plans in existence at the time of facility closure, and applicable Conditions of Certification.

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

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

As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until Energy Commission approval of the facility closure plan is obtained.

COM-13, Unplanned Temporary Closure/On-Site Contingency Plan

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

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

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

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more

than 90 days and unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific Conditions of Certification for the technical areas of **Hazardous Materials Management** and **Waste Management**.)

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

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

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

COM-14, Unplanned Permanent Closure/On-Site Contingency Plan

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

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

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

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

CBO Delegation and Agency Cooperation

In performing construction monitoring of the project Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Commission staff may delegate CBO responsibility to either an independent third party contractor or the local building official. Commission staff retains CBO authority when selecting a delegate CBO including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

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

Enforcement

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision. The specific action and amount of any fines the Energy Commission may impose take into account the specific circumstances of the incident(s). This includes such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors. Moreover, to ensure compliance with the terms and Conditions of Certification and applicable LORS, delegate agencies are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by law or regulations.

Informal Dispute Resolution Procedure

The following procedure is designed to informally resolve disputes concerning the interpretation of compliance with the requirements of this Compliance Plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate this procedure for resolving a dispute.

Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents.

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et seq., but is not intended to be a substitute for or prerequisite to it. This informal procedure may not be used to change the terms and Conditions of Certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be referred to the full Energy Commission for consideration via the complaint and investigation process. The procedure for informal dispute resolution is as follows:

Request for Informal Investigation

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and, within 7 working days of the CPM's request, provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report within 48 hours, followed by a written report filed within 7 days.

- **Request for Informal Meeting**

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or corrective measures undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be

made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and
4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

If either the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint or a request for an investigation with the Energy Commission's Chief Counsel. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1230 et seq.

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Energy Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Cal. Code Regs., tit. 20, §§ 1232-1236).

POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION: AMENDMENTS, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify project design, operation or performance requirements, and to transfer ownership or operational control of the facility. It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769. Implementation of a project modification without first securing Energy Commission or Energy Commission staff approval

may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **insignificant project changes**. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the Energy Commission's Docket in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of change process applies are explained below.

Amendment

The project owner shall petition the energy commission, pursuant to Title 20, California Code of Regulations, Section 1769, when proposing modifications to project design, operation, or performance requirements. A proposed modification which would alter the intent or purpose of a condition of certification, has potential for significant adverse environmental impact, or may violate any applicable laws, ordinances, regulations or standards will be processed as a formal amendment to the final decision, which requires public notice and review of the Energy Commission staff analysis, and approval by the full commission. This process takes approximately two to three months to complete, and possibly longer for complex project modifications.

Change of ownership

Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769 (b). This process takes approximately one month to complete, and requires public notice and approval by the full commission.

Insignificant Project Change

A proposed modification which does not alter the intent or purpose of a condition of certification, does not have the potential for significant adverse environmental impact, or does not violate any applicable laws, ordinances, regulations or standards may be authorized by the CPM as an insignificant project change pursuant to section 1769(a) (2). This process usually takes less than one month to complete, and it requires a 14-day public review of the Notice of Insignificant Project Change that includes staff's intention to approve the modification unless substantive objections are filed.

Verification Change

A verification may be modified by the CPM without requesting an amendment to the decision if the change does not conflict with the conditions of certification and provides an effective alternate means of verification. This process usually takes less than five working days to complete.

COM-6, KEY EVENTS LIST

PROJECT: ROSEVILLE ENERGY PROJECT

DOCKET #: (03-AFC-1)

COMPLIANCE PROJECT MANAGER:

EVENT DESCRIPTION	DATE
Certification Date/Obtain Site Control	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Grading	
Start Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Gas Turbine	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
• SYNCHRONIZATION WITH GRID AND INTERCONNECTION	
• COMPLETE T/L CONSTRUCTION	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
• COMPLETE GAS PIPELINE CONSTRUCTION	
WATER SUPPLY LINE ACTIVITIES	
• START WATER SUPPLY LINE CONSTRUCTION	
• COMPLETE WATER SUPPLY LINE CONSTRUCTION	

TABLE 1
COMPLIANCE SECTION
SUMMARY of GENERAL CONDITIONS OF CERTIFICATION

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
COM-1	4	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	4	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	4	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether the condition was satisfied by work performed by the project owner or his agent.
COM-4	5	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until all of the following activities/submittals have been completed: ▪ property owners living within one mile of the project have been provided a telephone number to contact for questions, complaints or concerns; ▪ a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction; ▪ all pre-construction conditions have been complied with; and ▪ the CPM has issued a letter to the project owner authorizing construction.

COM-5	6	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance Conditions of Certification.
COM-6	6	Monthly Compliance Report (including a Key Events List)	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-7	7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COM-8	8	Security Plans	Thirty days prior to commencing construction, the project owner shall submit a Security Plan for the construction phase. Sixty days prior to initial receipt of hazardous material on-site, the project owner shall submit an Security Plan & Vulnerability Assessment for the operational phase.
COM-9	9	Confidential Information	Any information the project owner deems confidential shall be submitted to the Docket Unit with an application for confidentiality.
COM-10	9	Dept of Fish and Game Filing Fee	The project owner shall pay a filing fee of $850 at the time of project certification.
COM-11	9	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM all notices, complaints, and citations.

COM-12	10	Planned Facility Closure	**The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure.**
COM-13	11	Unplanned Temporary Facility Closure	To ensure that public health, safety, and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-14	12	Unplanned Permanent Facility Closure	To ensure that public health, safety, and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.

COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: **ROSEVILLE ENERGY PROJECT** AFC Number: (03-AFC-1)
COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date and time complaint received: Indicate if by telephone or in writing (attach copy if written): Date of first occurrence:
Description of complaint (including dates, frequency, and duration):
Findings of investigation by plant personnel: Indicate if complaint relates to violation of Energy Commission requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct. Plant Manager's Signature: _____ Date:

This Page Intentionally Blank

IV. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the REP consisted of separate analyses that examined the design, engineering, efficiency, and reliability of the project. These analyses included the on-site power generating equipment and project-related facilities (natural gas supply pipeline, water supply pipelines, and transmission interconnection).

A. FACILITY DESIGN

The review of facility design covers several technical disciplines, including the civil, electrical, mechanical, and structural engineering elements related to project design, construction, and operation

SUMMARY AND DISCUSSION OF THE EVIDENCE

The AFC describes the preliminary facility design for the project. (Ex. 1.) Applicant sponsored these provisions as evidence, and testified to REP's support of the Staff analysis in the FSA. (Ex. 44, 3; 1/25/05 RT 35-36.) In considering the adequacy of the design plans, the Staff reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 47, sec. 5.1, 1/25/05 RT 36.)

We have adopted Conditions of Certification that establish a design review and construction inspection process to verify compliance with applicable standards and requirements.[4] In addition, the Conditions of Certification specify the roles,

[4] Conditions of Certification **GEN-1** through **GEN-8, CIVIL-1** through **CIVIL-4, STRUC-1** through **STRUC-4, MECH-1** through **MECH-3,** and **ELEC-1.**.

qualifications, and responsibilities of engineering personnel who will oversee project design and construction. They require approval by the Chief Building Official (CBO) after appropriate inspections by qualified engineers, and no element of construction may proceed without the CBO's approval.

The project will be designed and constructed in conformance with the latest edition of the California Building Code (currently the 2001 CBC) and other applicable codes and standards in effect at the time design approval and construction actually begin. Condition of Certification **GEN-1** incorporates this requirement.

Potential geological hazards were also considered, and the evidence contains a review of preliminary project design, site preparation and development, major project structures, systems and equipment, mechanical systems, electrical systems, and related facilities. (Ex. 1.)

The project will implement site preparation and development criteria consistent with accepted industry standards. This includes design practices and construction methods for grading, flood protection, erosion control, site drainage, and site access. (Ex. 1.) Condition **CIVIL-1** ensures that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production and facilities used for storage of hazardous or toxic materials. Condition **GEN-2** includes a list of the major structures and equipment included in the initial engineering design for the project.

The 2001 CBC requires specific "lateral force" procedures for different types of structures to determine their seismic design. To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1**

requires the project owner to submit its proposed procedures to the CBO for review and approval prior to the start of construction. (Ex. 47, p. 5.1-3.)

Conditions **MECH**-1 through **MECH**-3 ensure the project's mechanical systems will comply with appropriate standards. Condition **ELEC-1** ensures that design and construction of major electrical features will comply with applicable LORS.

Finally, the evidence also addresses project closure. (Ex. 47, p. 5.1-4.) To ensure that decommissioning of the facility will conform with applicable LORS to protect the environment and public health and safety, the project owner shall submit a decommissioning plan. This plan is described in the general closure provisions of the Compliance Monitoring and Closure Plan contained in Part III of this Decision.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. The Roseville Energy Park Project is currently in the preliminary design stage.
2. The evidence of record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision. This will occur through the use of design review, plan checking, and field inspections.
3. The Conditions of Certification below and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of the planned, the unexpected temporary, or the unexpected permanent closure of the facility.
4. The Conditions of Certification set forth herein ensure that the project will be designed, constructed, and ultimately closed in a manner that protects environmental quality and public health and safety.

We therefore conclude that with the implementation of the Conditions of Certification listed below, the Roseville Energy Park Project will be designed and constructed in conformity with applicable laws pertinent to its geologic, as well as to its civil, structural, mechanical, and electrical engineering aspects.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the 2001 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval. (The CBSC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) The project owner shall insure that all the provisions of the above applicable codes be enforced during any construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility [2001 CBC, Section 101.3, Scope]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

In the event that the initial engineering designs are submitted to the CBO when a successor to the 2001 CBSC is in effect, the 2001 CBSC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

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

VERIFICATION: Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2001 CBC, Section 109 – Certificate of Occupancy].

Once the Certificate of Occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility which may require CBO approval for the purpose of complying with the above stated codes. The CPM will then determine the necessity of CBO approval on the work to be performed.

GEN-2 Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List and a Master Specifications List. The schedule shall contain a list of proposed submittal packages of designs, calculations and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM when requested.

VERIFICATION: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 1** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	2
Combustion Turbine Generator Foundation and Connections	2
Steam Turbine (ST) Foundation and Connections	1
Steam Turbine Generator Foundation and Connections	1
Steam Condenser and Auxiliaries Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
HRSG Feed Pumps Foundation and Connections	2
HRSG Stack Structure, Foundation and Connections	2
CT Main Transformer Foundation and Connections	2
ST Main Transformer Foundation and Connections	1
Auxiliary or Station Service Transformer Foundation and Connections	1
CT Air Inlet System Structure, Foundation and Connections	2
HRSG Transition Duct from CTG — Structure	2
Condensate Pumps Foundation and Connections	3
Circulating Water Pumps Foundation and Connections	2
Power Cycle Makeup and Storage Pumps Foundation and Connections	2
Cooling Tower Makeup Pumps Foundation and Connections	2
Demineralized Water Storage Tank and Pump Foundations and Connections	1
Condensate Storage and Transfer System Foundation and Connections	1
Condensate Water Tank Foundation and Connections	1
Auxiliary Cooling Water Pumps Foundation and Connections	2
Waste Water Collection System Foundation and Connections	1
Fuel gas Heater Foundation and Connections	1
Fire Protection System	1
Cooling Tower Structure, Foundation and Connections	1
Generator Breakers Foundation and Connections	3
Transformer Breakers Foundation and Connections	3
Natural Gas Metering Station Structure, Foundation and Connections	1
Natural Gas Compressor Skid Foundation and Connections	2
Ammonia Storage Facility Foundation and Connections	1
Closed Cycle Cooling Pumps Foundation and Connections	2
Demineralizer - RO System Foundation and Connections	2
Warehouse/Shop Structure, Foundation and Connections	1
Demineralized Water Treatment Structure, Foundation and Connections	1

Equipment/System	Quantity (Plant)
Cooling Tower Blowdown Storage Tank, Foundation and Connections	1
Cooling Tower Chemical Feed Structure, Foundation and Connections	1
Auxiliary Boiler Foundation and Connections	1
Ammonia Vaporizer System Foundation and Connections	1
Continuous Emissions Monitoring Systems Structure, Foundation and Connections	1
Potable Water Systems	1 Lot
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2001 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

VERIFICATION: The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A

project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

1. Monitor construction progress of work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all the facilities subject to CBO design review and inspection conforms in every material respect to the applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;
4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

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

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

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

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

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

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

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all responsible engineers assigned to the project [2001 CBC, Section 104.2, Powers and Duties of Building Official].

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

A. The civil engineer shall:

1. Review the Foundation Investigations Report, Geotechnical Report or Soils Report prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

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

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

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

1. Review all the engineering geology reports;
2. Prepare the Foundation Investigations Report, Geotechnical Report or Soils Report containing field exploration reports, laboratory tests and engineering analysis detailing the nature and extent of the soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load [2001 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations];
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2001 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both); and
4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations [2001 CBC, section 104.2.4, Stop orders].

C. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;
2. Provide consultation to the RE during design and construction of the project;
3. Monitor construction progress to ensure compliance with engineering LORS;
4. Evaluate and recommend necessary changes in design; and
5. Prepare and sign all major building plans, specifications and calculations.

D. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and

calculations conform with all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

E. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

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

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

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

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

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2001 CBC, Chapter 17 [Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection)]; and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Observe the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action

[2001 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and

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

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

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

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

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required [2001 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

VERIFICATION: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next Monthly Compliance Report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after

obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project [2001 CBC, Section 106.4.2, Retention of Plans].

VERIFICATION: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next Monthly Compliance Report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing final approved engineering plans, specifications and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils Report, Geotechnical Report or Foundation Investigations Report required by the 2001 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

VERIFICATION: At least 15 days (or project owner and CBO approved alternative timeframe) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area [2001 CBC, Section 104.2.4, Stop orders].

VERIFICATION: The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume

earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2001 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO and the CPM [2001 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

VERIFICATION: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a Non-Conformance Report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following Monthly Compliance Report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans [1998 CBC, Section 3318, Completion of Work].

VERIFICATION: Within 30 days (or project owner and CBO approved alternative timeframe) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes, with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next Monthly Compliance Report.

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed

lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 1**, above):

1. Major project structures;
2. Major foundations, equipment supports and anchorage;
3. Large field fabricated tanks;
4. Turbine/generator pedestal; and

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations and specifications [2001 CBC, Section 108.4, Approval Required];
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [2001 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents];
4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [2001 CBC, Section 106.3.4, Architect or Engineer of Record]; and

Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to the applicable LORS [2001 CBC, Section 106.3.4, Architect or Engineer of Record].

VERIFICATION: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2** above, the project owner shall submit to the CBO the above

final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

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

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

1. taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2001 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

VERIFICATION: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM [2001 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2001 CBC, Chapter 1, Section 106.3.2, Submittal documents and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete

description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

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

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 2001 CBC shall, at a minimum, be designed to comply with the requirements of that Chapter.

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 1**, Condition of Certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of said construction [2001 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 2001 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);

- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [2001 CBC, Section 104.2.2, Deputies].

VERIFICATION: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 1**, Condition of Certification **GEN-2** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [2001 CBC, Section 108.3, Inspection Requests].

The project owner shall:

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

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

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

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

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

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications and calculations shall include approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS [2001 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

VERIFICATION: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher, listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations [CBC 2001, Section 106.3.2, Submittal

documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [2001 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

A. Final plant design plans to include:

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

B. Final plant calculations to establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
6. system grounding requirements; and
7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:

1. Receipt or delay of major electrical equipment;
2. Testing or energization of major electrical equipment; and
3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

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

This Page Intentionally Blank

B. POWER PLANT EFFICIENCY

In accordance with CEQA, the Commission must consider whether the project's consumption of energy in the form of non-renewable fuel will result in adverse environmental impacts on energy resources. [Cal. Code of Regs., tit. 14, § 15126.4(a)(1), Appendix F.] This analysis reviews the efficiency of project design and identifies measures that prevent wasteful, inefficient, or unnecessary energy consumption. The evidence presented was uncontested. (1/25/05 RT 35-38.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Pursuant to CEQA Guidelines, Staff assessed whether the REP's use of natural gas would result in: 1) an adverse effect on local and regional energy supplies and resources; 2) the need for additional energy supply capacity; or 3) the wasteful, inefficient, and unnecessary consumption of fuel or energy. (Ex. 47, sec. 5.3.)

Under normal operating conditions, the REP will burn natural gas at a nominal rate of 19,820 MM Btu per hour, lower heating value (LHV), without HRSG duct firing. Although the project is expected to generate electricity at a full load thermal efficiency of about 50 percent lower heating value (LHV), as compared to average efficiency of utility baseload plants of 35 percent LHV, it constitutes a substantial rate of energy consumption that could impact energy supplies or resources. (Ex. 47, p. 5.3-2.)

Natural gas will be supplied to the project by PG&E line 123 via a new approximately 6 mile section of 10- to 16-inch pipeline. This source will provide adequate gas delivery for a project this size. (Ex. 47, p 5.3-3.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by selection

of generating equipment. The REP is configured as a combined-cycle power plant, in which electricity will be produced by two gas turbines and additionally by a steam turbine that operates on heat energy recuperated from gas turbine exhaust. By recovering this heat which would otherwise be lost up the exhaust stacks, the efficiency of a combined-cycle power plant is considerably increased compared with either a gas turbine or a steam turbine operating alone. Project efficiency is also enhanced by use of inlet air coolers, two-pressure HRSGs, and a steam turbine unit and circulating water system. The evidence establishes that the proposed configuration is an effective and efficient means of meeting project objectives. (Ex. 47, pp. 5.3-3 to 5.3-4.)

The evidence of record also shows that modern gas turbines represent the most fuel-efficient electric generating technology available. The REP will use either two General Electric LM6000PC Sprint or two Alstom GTX100 gas turbine generators in a two-on-one combined cycle power train configuration. Nominally the GE LM6000PC in a one-on-one configuration is rated at 59 MW with a 53 percent efficiency LHV at ISO conditions. The alternative Alstom GTX100 gas turbine generators in a two-on-one configuration is nominally rated at 124.5 MW and 54 percent efficiency LHV at ISO conditions. (Ex. 47, p. 5.3-4.)

FINDINGS AND CONCLUSIONS

Based upon the uncontested evidence of record, we find and conclude as follows:

1. The REP will use either two General Electric LM6000PC Sprint gas turbine generators (in a one-on-one configuration rated at 59 MW with a 53 percent efficiency LHV at ISO conditions) or two Alstom GTX100 gas turbine generators (in a two-on-one combined cycle power train nominally rated at 59 MW with a 53 percent efficiency LHV at ISO conditions).

2. Existing natural gas resources will be adequate for the fuel requirements of the project.

3. REP will not consume natural gas in a wasteful, inefficient, or unnecessary manner.

4. The project configuration and choice of generating equipment represent two of the most modern combinations to achieve project objectives.

5. The project will not require additional sources of energy supply.

6. The project will have no significant adverse impacts on energy resources.

The Commission therefore concludes that the REP will not cause any significant direct or indirect adverse impacts upon energy resources. No Conditions of Certification are required for this topic.

This Page Intentionally Blank

C. POWER PLANT RELIABILITY

We must determine whether the project will be designed, sited, and operated to ensure safe and reliable operation. [Pub. Resources Code, § 25520(b); Cal. Code of Regs., tit. 20 § 1752(c)(2).] However, there are currently no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence indicates that a power plant is acceptable if it does not degrade the reliability of the utility system to which is connected. This is likely if the project exhibits reliability at least equal to that of other power plants on the system. Reliable operation is a combination of factors, i.e., the power plant should be available when called upon to operate and it should be expected to operate for extended periods without shutdown for maintenance or repairs. Project safety and reliability are achieved by ensuring equipment availability, plant maintainability, fuel and water availability, and adequate resistance to natural hazards.

The project owner will ensure equipment availability by use of quality assurance/quality control programs (QA/QC) which include inventory review and equipment inspection and testing on a regular basis during design, procurement, construction, and operation. Qualified vendors of plant equipment and materials will be selected based on past performance and independent testing contracts to ensure that reliable equipment is acquired.

The evidentiary record further indicates that the project's design includes redundancy of equipment sufficient to ensure continued operation in the event of equipment failure. The project's two trains of gas turbine generators/HSRGs provide inherent reliability allowing the facility to operate at reduced output in the

event that a non-redundant component in one train should fail. Project maintenance will be typical of the industry, including preventative and predictive techniques. Any necessary maintenance outages will be planned for periods of low electricity demand.

Reasonable long-term availability of fuel and water is also necessary to ensure project reliability. As discussed in the section on **Power Plant Efficiency**, PG&E will supply natural gas through a new gas system supply near the project site. The record indicates that PG&E's natural gas system offers adequate supply and pipeline capacity to meet project needs. Similarly, the evidence establishes that the City of Roseville will reliably supply both recycled water and potable water to the project.

The site is located in Seismic Zone 3. The REP will be designed and constructed to comply with current applicable LORS for seismic design. These standards improve seismic stability compared with older power plants, and ensure that the project will perform at least as well as existing plants in the electrical system. The Conditions of Certification in the **Facility Design** section of this Decision ensure that the project will conform with seismic design LORS.

RE predicts the project will have an annual availability factor of 95 percent. Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council (NERC), show an availability factor of 89.95 percent for combined-cycle units of all sizes. Finally, the evidence shows that the procedures for design, procurement, and construction are in keeping with industry norms and will likely result in an adequately reliable plant.(Exs. 1, 3, 44; 47, sec. 5.4; 1/25/05 RT 35-38.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. Implementation of Quality Assurance/Quality Control programs during design, procurement, construction, and operation of the plant, and adequate maintenance and repair of the equipment and systems, will ensure the project is adequately reliable.

2. Adequate fuel and water capacity are available for project operations.

3. The project's estimated 95 percent annual availability factor is consistent with or exceeds industry norms for power plant reliability.

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

We therefore conclude that the project will be constructed and operated in accordance with typical power industry norms for reliable electricity generation. No Conditions of Certification are required for this topic. To ensure implementation of the QA/QC programs and conformance with seismic design criteria as described above, appropriate Conditions of Certification are included in the **Facility Design** portion of this Decision.

This Page Left Intentionally Blank

D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant …to a point of junction with an interconnected transmission system." (Pub. Resources Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The record indicates that the Applicant in this case accurately identified all interconnection facilities for Commission review.

The California Independent System Operator (Cal-ISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. Because the Roseville Electric (RE) system is not part of the Cal-ISO grid, Cal-ISO is not directly responsible for ensuring electric system reliability for the interconnection; however, Staff coordinated its analysis with Cal-ISO and solicited input on this Project. (Ex. 47, p. 5.5-1.) Since RE ties into the Western Area Power Administration's (Western's) power grid, Western's participation was necessary to assess potential reliability impacts.

Staff evaluated the proposed switchyard, outlet line, termination and downstream facilities and recommended Conditions of Certification to ensure the Project complies with applicable laws during the design review, construction, operation, and potential closure. No additional new or modified transmission facilities, other than those identified by the Applicant for the outlet configuration, are required for the interconnection of the REP Project. The evidence of record is undisputed on this topic. (1/25/05 RT 39; Ex. 40.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The West Roseville Specific Plan (WRSP) includes construction of a new 60 kV double circuit transmission line that runs from the existing Fiddyment Receiving Station to a new WRSP substation along Phillip Road and passes adjacent to the REP. Power generated by the REP would be transmitted to the grid by looping two circuits of the WRSP transmission line into the REP switchyard. Construction of the new WRSP transmission line is planned for completion prior to interconnection with the REP. (Ex. 1, p. 6-1; Figure 6.2-1.)

1. Switchyard

The Project's power train includes two combustion turbine generators (CTGs) and one steam turbine generator (STG). Each of the CTGs and the STG generate power at 13.8 kV, and each generator is connected to the plant 60 kV switchyard using its own dedicated 13.8/60 kV step-up transformer. The switchyard will consist of SF6 insulated circuit breakers and manually operated disconnect switches on each side of each breaker. A breaker-and-half bus arrangement will be used in the switchyard to obtain a high level of service reliability. This configuration meets the criteria for good utility practices. (Ex. 47, p.5.5-3; Ex. 1, Appendix 10-D.)

2. Transmission Tie-Line

The outlet transmission line consists of a 100-foot long new double-circuit 60 kV transmission line, from the REP on-site switchyard to the proposed WRSP 60 kV double-circuit line, which would extend to the existing Fiddyment Substation. The 60 kV outlet transmission line will be carried on double-circuit single-pole steel structures. Each of the circuits will be 666.6 ACSS high temperature conductor with a normal summer rating of 125 megavolt amperes (MVA) and an emergency rating of 145 MVA. A future line addition as part of the WRSP will

connect a 60 kV double circuit transmission line from the WRSP substation to the REP switchyard. (Ex. 1, p. 6-1.) This interconnection plan conforms with good utility practices and is considered acceptable. (Ex. 47, p. 5.5-3.)

3. Reliability Study Results

Western performed a Detailed Facility Study (DFS) to determine alternate and preferred interconnection methods. The study identified downstream transmission system impacts and the mitigation measures needed to conform with the system performance levels required by utility reliability criteria, NERC planning standards, WECC reliability criteria, and Cal-ISO reliability criteria. The study compared the system with and without the new Project by using a computer model base case for the year when the new generator would go on-line. (Ex. 3, TSE Data Responses, pp. TE-3 et seq.)

The DFS considered the normal condition (N-0) of the system and all credible contingency/emergency conditions, which include the loss of a single system element (N-1) such as a transmission line, transformer, or a generator and the simultaneous loss of two system elements (N-2), such as two transmission lines or a transmission line and a generator. In addition, the DFS verified whether sufficient active or reactive power is available in the area system or area sub-system to which the new generator would be interconnected. Equipment that is loaded beyond 100 percent of its rating constitutes a violation of the reliability criteria. Generally voltages must be within 95 percent and 105 percent of the base level. (Ex. 47, p. 5.5-4.)

The REP's transmission system was analyzed under the following system conditions:

- 2006 heavy summer base case with heavy load conditions in the greater Sacramento valley region.

- 2006 heavy summer case with the NCAP Roseville CT generating unit at 50 MW.
- 2006 spring base case without the 50 MW NCPA Roseville CT.

The DFS included a Load Flow analysis, PV analysis, Dynamic Stability Studies, and Short Circuit studies. (Ex. 47, p. 5.5-4.) The Power Flow Study indicates that interconnection of the REP causes no normal overloads in either the Heavy Summer or Light Spring analysis. Further, the Contingency Study for the 2006 Heavy Summer case shows an improvement in transmission system performance with the addition of the REP. Before addition of the REP, the N-1 contingency study indicated 26 elements were overloaded. With the addition of the REP, only four overloaded elements remained. The loading of the 22 pre-existing overloaded elements dropped to within their ratings. (Ex. 47, p. 5.5-5; Ex. 3, TSE Data Responses.)

The Sensitivity Study shows that the REP would have minimal effect on the RE's 60 kV and 230 kV transmission systems with NCPA's Roseville CT generating at 50 MW. Overloads under contingency conditions appear in the 230 kV transmission system as follows. (Ex. 3, TSE Data Responses.)

Overloaded Facility Under N-1 Contingency Summer Case (with Roseville CT)	Percentage Loading of the Facility		Percentage Increment in Loading	SELECTED MITIGATION
	Pre-REP	Post-REP		
Hurley S 230 kV – Carmichael 230 kV circuit #1	109	113	4	Cal-ISO / SVSG T-121 Operating Procedures
Hurley S 230 kV – Natomas 230 kV circuit #1	108	109	1	
Tracy PMP 230 kV – Tesla D 230 kV circuit #1	108	113	5	
Tracy PMP 230 kV – Tesla D 230 kV circuit #2	108	113	5	
ElvertaW 230 kV – Hurley S 230 kV circuit #1	95	110	15	Western will re-rate these lines. If the re-rating is feasible, the emergency ratings will be increased and will fully mitigate the overload.
ElvertaW 230 kV – Hurley S 230 kV circuit #2	89	103	14	
REP60 60 kV – Fiddyment 60 kV #1	NA	110	10	Install a Remedial Action Scheme (RAS) to reduce the REP output. The future WRSP transmission system addition will eliminate the overloads.
REP60 60 kV – Fiddyment 60 kV #2	NA	110	10	

The Power Flow analysis for the Spring case indicates that interconnection of the REP would not cause any criteria violations in the transmission facilities. Under an N-1 contingency, the overloaded elements are as follows. (Ex. 47, p. 5.5-7.)

Overloaded Facility Under N-1 Contingency Spring Case (Without Roseville CT)	Percentage Loading of the Facility		Percentage Increment in Loading	SELECTED MITIGATION
	Pre-REP	Post REP		
REP60 60 kV – Fiddyment 60 kV #1	NA	110	10	Install a RAS to reduce the REP output. The future WRSP transmission system addition will eliminate the overloads.
REP60 60 kV–Fiddyment 60 kV #2	NA	110	10	

The PV analysis confirms no voltage criteria violation would occur after adding the REP. Moreover, adding the REP to the transmission grid would improve Sacramento area import capability and local area voltage support. (Ex. 3, TSE Data Responses, pp. T-3 et seq.) Staff believes the provision of dynamic voltage support in the area and improved import capability provide local system benefits. (Ex. 47, p. 5.5-7.)

Dynamic Stability Studies were previously conducted for year 2002 using a larger proposed facility (900 MW Roseville Energy Facility) in the same general location to determine if it would create any instability and adverse impact on the stable operation of the transmission grid following selected disturbances. (Ex. 3, TSE Data Responses.) The results indicate there are no transient stability concerns on the transmission system following the selected disturbances for integration of the previously proposed 900 MW facility. Thus, it is appropriate to conclude that the REP will not create adverse impacts to the transmission grid since the REP will generate at a much lower output. (Ex. 47, pp. 5.5-7 and 5.5-8.)

The short circuit studies were conducted to determine whether the REP would result in overstressing the existing fault interruption rating of circuit breakers. The study shows that all of the existing circuit breakers are capable of handling

the increase in fault level with the addition of the REP. (Ex. 3, TSE Data Responses, pp. TE-3 et seq.)

4. Mitigation Measures

The mitigation measures selected by the Applicant for the contingency overload impacts would require the implementation of the Cal-ISO/SVSG T-121 Operating Procedures, re-rating lines, installing a Remedial Action Scheme (RAS) to reduce REP output, and a future WRSP transmission system addition. The T-121 Operating Procedures include:

- reduce generation north of Elverta;
- increase generation internal to SMUD; and
- reduce/shed load

Western is in the process of re-rating the Elverta-Hurley lines and working with SMUD to assure an adequate rating. In the event that the re-rating does not occur, it is likely that operational mitigation measures rather than facility construction would be used. The WRSP will expand RE's transmission infrastructure. The future expansion of the RE transmission system in the WRSP area will eliminate the contingency overload of the REP–Fiddyment line and improve reliability and security. This transmission expansion is independent of the REP. (Ex. 47, p. 5.5-7.)

Since the REP will be located in the load center of RE's transmission system and the interconnection facilities will be located within the Project boundaries, the Project as mitigated will not contribute to systemic cumulative impacts. (Ex. 47, p. 5.5-8.)

FINDINGS AND CONCLUSIONS

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

1. No new transmission facilities are required for the Project other than the new on-site double circuit 60 kV interconnection line.
2. The new Project switchyard, new interconnection outlet line, and terminations are designed in accordance with good utility practices and are considered adequate and reliable.
3. Western performed a Detailed Facilities Study (DFS), which analyzed potential reliability and congestion impacts that could occur when the REP 1is added to the RE grid, which also serves the SMUD, Western, and PG&E transmission grids.
4. The REP will not cause any normal condition overloads to the transmission grids. Under contingency conditions, the REP helps to alleviate 22 out of 26 existing system overloads. The remaining overloads would be mitigated by re-rating conductors, planned future transmission expansion, and operational procedures.
5. The DFS found that operation of the REP would not cause negative impacts to the PG&E grid, which is part of the Cal-ISO transmission system.
6. Adding local generation to the grids via the REP would improve local area voltage support and import capability. Adding the REP would not cause stability criteria violations.
7. Existing circuit breakers are capable of handling the increase in fault levels with the addition of the REP.
8. Implementation of the Conditions of Certification require the Project Owner to design and operate the REP in a manner that will not adversely impact the affected transmission grids.

We therefore conclude that with the implementation of the mitigation measures described in the record and specified in this Decision, the proposed transmission interconnection for the Project will not contribute to significant adverse direct, indirect, or cumulative reliability or environmental impacts. The Conditions of Certification below ensure that the transmission-related aspects of the Roseville Energy Park will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall ensure that the design, construction and operation of the REP's transmission facilities shall conform to all applicable LORS including the requirements 1a) through 1h) listed below.

a) The Project shall connect to the WRSP 60 kV double circuit lines of the Roseville Electric transmission system using about 100 foot of 60 kV double circuit transmission line. Interconnection will be executed through the power plant 60 kV switchyard located at the REP project site.
b) The Project's 60 kV switchyard shall have a breaker and a half configuration.
c) The Project conductors shall be sized to accommodate the full output from the project.
d) The power plant switchyard, outlet line and termination shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", National Electric Code (NEC) and related industry standards.
e) Breakers and busses in the power plan switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
f) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
g) Termination facilities to the Roseville 60 kV line shall comply with applicable Roseville Electric interconnection standards.
h) The Project Owner shall provide to the CPM:

    i) The final Detailed Facility Study (DFS), if modified, including a description of new facilities, facility upgrades, operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,

    ii) A letter from transmission owner(s) stating that the mitigation measures or projects for each criteria violation selected by the project owner are acceptable.

Verification: At least 30 days prior to the start of grading of the power plant switchyard or transmission facilities, the Project Owner shall submit to the CPM for approval:

- Electrical one line diagrams signed and sealed by a registered professional electrical engineer in responsible charge (or other approval acceptable to the CPM), a route map, and an engineering description of equipment and the configurations covered by the requirements 1a) through 1h) above.
- The final Detailed Facilities Study, if modified, shall include a description of facility upgrades, operational mitigation measures and/or RAS or SPS. Substitution of equipment and substation configurations shall be identified and justified by the Project Owner for CPM approval.

TSE-2 The Project Owner shall provide the following Notice to the California Independent System Operator (Cal-ISO) prior to synchronizing the facility with the California Transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing, provide the Cal-ISO a letter stating the proposed date of synchronization; and
2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the ISO Outage Coordination Department.

Verification: The Project Owner shall provide copies of the Cal-ISO letter to the CPM when it is sent to the Cal-ISO one week prior to initial synchronization with the grid. The Project Owner shall contact the Cal-ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the Cal-ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-3 The Project Owner shall inform the CPM of any impending changes that may not conform to the requirements 1a) through 1h) of **TSE-1**, and have not received CPM approval, and request approval to implement such changes. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CPM.

Verification: At least 30 days prior to the construction of the power plant switchyard and transmission facilities, the Project Owner shall inform the CPM of any impending changes that may not conform to requirements 1a) through 1h) of **TSE-1** and request approval to implement such changes.

TSE-4 The project owner shall be responsible for the inspection of the transmission facilities during project construction, and any subsequent CPM approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, CPUC GO-128, Title 8 of the California Code of Regulations, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”, NEC, related industry standards

and these conditions. In case of non-conformance, the project owner shall inform the CPM in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project to the grid, the project owner shall transmit to the CPM an engineering description(s) and one-line diagrams of the "as built" facilities greater than 18 kV signed and sealed by the registered electrical engineer in responsible charge (or other verification acceptable to the CPM, such as a letter stating that the attached diagrams have been verified by the engineer). A statement, signed and sealed, attesting to conformance with CPUC GO-95 or NESC, CPUC GO-128, Title 8 of the California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", NEC, related industry standards and these conditions shall be provided concurrently.

DEFINITION OF TERMS

AAC All Aluminum conductor.

ACSR Aluminum Conductor Steel-Reinforced.

SSAC Steel-Supported Aluminum Conductor.

Ampacity Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, at which damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.

Ampere The unit of current flowing in a conductor.

Bundled Two wires, 18 inches apart.

Bus Conductors that serve as a common connection for two or more circuits.

Conductor The part of the transmission line (the wire) that carries the current.

Congestion Management

Congestion management is a scheduling protocol, which provides that dispatched generation and transmission loading (imports) will not violate criteria.

Emergency Overload

See Single Contingency. This is also called an L-1.

Kcmil or KCM

Thousand circular mil. A unit of the conductor's cross sectional area, when divided by 1,273, the area in square inches is obtained.

Kilovolt (kV) A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground.

Loop

An electrical cul de sac. A transmission configuration that interrupts an existing circuit then diverts it to another connection and returns it back to the interrupted circuit, thus forming a loop or cul de sac.

Megavar

One megavolt ampere reactive.

Megavars Mega-volt-Ampere-Reactive. One million Volt-Ampere-Reactive. Reactive power is generally associated with the

reactive nature of motor loads that must be fed by generation units in the system.

Megavolt ampere (MVA)

A unit of apparent power, equals the product of the line voltage in kilovolts, current in amperes, the square root of 3, and divided by 1000.

Megawatt (MW)

A unit of power equivalent to 1,341 horsepower.

Normal Operation/ Normal Overload

When all customers receive the power they are entitled to without interruption and at steady voltage, and no element of the transmission system is loaded beyond its continuous rating.

N-1 Condition

See Single Contingency.

Outlet

Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation facilities to the main grid.

Power Flow Analysis

A power flow analysis is a forward looking computer simulation of essentially all generation and transmission system facilities that identifies overloaded circuits, transformers and other equipment and system voltage levels.

Reactive Power

Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system. An adequate supply of reactive power is required to maintain voltage levels in the system.

Remedial Action Scheme (RAS)

A remedial action scheme is an automatic control provision, which, for instance, will trip a selected generating unit upon a circuit overload.

SF6

Sulfur hexafluoride is an insulating medium.

Single Contingency

Also known as emergency or N-1 condition, occurs when one major transmission element (circuit, transformer, circuit breaker, etc.) or one generator is out of service.

Solid dielectric cable
: Copper or aluminum conductors that are insulated by solid polyethylene type insulation and covered by a metallic shield and outer polyethylene jacket.

Switchyard
: A power plant switchyard (switchyard) is an integral part of a power plant and is used as an outlet for one or more electric generators.

Thermal rating
: See ampacity.

TSE
: Transmission System Engineering.

Tap
: A transmission configuration creating an interconnection through a sort single circuit to a small or medium sized load or a generator. The new single circuit line is inserted into an existing circuit by utilizing breakers at existing terminals of the circuit, rather than installing breakers at the interconnection in a new switchyard.

Undercrossing
: A transmission configuration where a transmission line crosses below the conductors of another transmission line, generally at 90 degrees.

Underbuild
: A transmission or distribution configuration where a transmission or distribution circuit is attached to a transmission tower or pole below (under) the principle transmission line conductors.

E. TRANSMISSION LINE SAFETY AND NUISANCE

The Project's transmission lines must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This section summarizes the analysis of record concerning the potential impacts of the Project's transmission tie-line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electromagnetic field exposure. The evidence presented was uncontested. (1/25/05 RT 31; Ex. 40.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The REP will interconnect to the City of Roseville's distribution grid via a new 100-foot long double-circuit 60 kV overhead line that will loop into the prospective 60 kV line to be constructed by Roseville Electric (RE) under the West Roseville Specific Plan (WRSP). The REP line will consist of the following segments:

> One double-circuit overhead 60 kV line extending approximately 100 feet from the Project's 60 kV switchyard to the connection point on the WRSP-related 60 kV line extending to RE's Fiddyment Receiving Station approximately 4 miles to the south; and
>
> The Project's on-site 60 kV switchyard.

The new 100-foot interconnection line will be located entirely within REP's property boundaries. It will be designed and operated according to standard RE practices. Conditions **TLSN-1** and **TLSN-2** require the Project Owner to provide the data necessary for the required compliance assessment. (Ex. 49, p. 4-11-7.)

1. Aviation Hazards

Federal Aviation Administration (FAA) regulations establish standards for identifying obstructions in navigable airspace and require notification of any construction greater than 200 feet above ground level. Notification is also required if the obstruction is less than 200 feet high but falls within restricted airspace in the approaches to airports or heliports. Since the REP's transmission towers will be less than 200 feet tall and there are no nearby airports or heliports to trigger additional restrictions, the interconnection line is unlikely to pose a significant obstruction-related aviation hazard to aircraft. Therefore, no FAA "Notice of Construction or Alteration" is required. (Ex. 47, p. 4.11-8; Ex. 1, p. 6-9.)

2. Radio Frequency Interference

Federal Communications Commission (FCC) regulations prohibit transmission lines from interfering with radio and television reception. Such interference is due to noise produced by action of the electric fields on the surface of energized conductors. This process, known as corona discharge or spark gap electric discharge, occurs within gaps between the conductor and insulators or metal fittings especially during wet weather. The REP transmission line will be designed, built, and maintained according to standard RE practices to minimize corona noise caused by irregularities (such as nicks and scrapes on the conductor surface), sharp edges on suspension hardware, and other discontinuities around the conductor surface. Moreover, the potential for such corona-related interference is usually of concern for lines greater than 345 kV and not the proposed 60 kV line. There is no evidence of corona-related radio-frequency interference in the vicinity near the REP line. Since the line will be located within REP property boundaries in an area without residences, it is not necessary to impose a specific condition on this issue. (Ex. 47, p. 4.11-8; Ex. 1 p. 6-8.)

3. Audible Noise

The low-corona design of the REP transmission line also serves to minimize the potential for corona-related audible noise. Thus, operation of the line would be unlikely to significantly contribute to current background noise levels in the Project area. For an assessment of potential noise effects from all phases of the Project and related facilities, refer to the **Noise and Vibration** section of this Decision. (Ex. 47, p. 4.11-8.)

4. Fire Hazard

The potential for fires caused by contact with the transmission line is minimized by the general absence of trees, brush, or other large combustible objects within the REP property. The interconnection line will be designed, constructed, and maintained in accordance with the CPUC's GO-95 requirements, which establish clearance distances from combustible objects. RE will maintain the transmission line corridor and immediate area in accordance with accepted industry practices to ensure identification and abatement of any fire hazards. (Ex. 1, p. 6-9, 5-17; Ex. 47, p. 4.11-9.)

5. Shock Hazards

Conditions **TLSN-1** and **TLSN-2** require the Project Owner to design the interconnection line in accordance with applicable industry standards, including appropriate grounding procedures, to minimize the risk of hazardous and nuisance shocks. (Ex. 47, pp. 4.11-5 and 4.11-9.)

6. Electric and Magnetic Field Exposure

The possibility of deleterious health effects from exposure to electric and magnetic fields (EMF) has raised public health concerns about living near high-

voltage lines[5]. Since there are no residences near the on-site interconnection line, the only EMF exposure of potential significance would be short-term on-site exposure to plant workers or visitors at the site. According to Staff, such short-term exposure has not been established as posing a significant health risk. (Ex. 47, p. 4.11-7.)

The Project Owner will employ field reduction measures to minimize public exposure to EMF resulting from Project operation. These field reduction measures include: a) increasing the distance between the conductors and the ground; b) reducing the spacing between the conductors; c) minimizing the current in the line; and d) arranging current flow to maximize the cancellation effects from interacting fields from nearby conductors. (Ex. 47, pp. 4.11-5 and 4.11-9; Ex. 1, pp. 6-7 and 6-8.)

Since electric fields are produced by line voltage, ground-level intensities may change at specific locations due to the interactive effects of fields from the conductors of nearby or interconnected lines. Connecting the REP line to the prospective WRSP line of the same voltage should not change existing voltages within the area transmission grid. Condition **TLSN-3** requires the Project Owner to conduct specific field strength measurements to verify that the REP-related voltage does not change the existing electric fields without significant changes to the applied voltage. These measurements would also allow for comparison with electric fields from RE lines of the same design and voltage. **TLSN-3** also requires magnetic field strength measurements to compare the REP line with magnetic fields from RE lines of the same design and current-carrying capacity as well as those from similar lines in the few states with specific limits on line

[5] While scientific research has not established a definitive correlation between EMF exposure and adverse health effects, the potential for EMF-related health hazards remains at issue. In this regard, the CPUC requires the regulated utilities to incorporate EMF-reducing measures in the design, construction, and maintenance of new transmission facilities and to operate existing facilities in accordance with those measures. Condition **TLSN-1** requires the Project Owner to comply with those requirements. (Ex. 47, pp. 4.11-5 and 4.11-6.)

magnetic fields. These magnetic field strength limits vary from 150 to 250 mG established (depending on voltage level) for the edges of the rights-of-way. (Ex. 47, p. 4.11-9; Ex. 1, p. -8.)

Since optimum field-reducing measures must be incorporated into the proposed line design, further mitigation is unnecessary, however, the Project Owner's compliance with Condition **TLSN-3** requires validation of the REP's assumed reduction efficiency from the recommended field strength measurements. (Ex. 47, p. 4.11-9; Ex. 1 pp. 6-7 and 6-8.) Any contribution to cumulative area exposures are expected to be at levels similar in intensity to fields from RE lines of similar voltage and current-carrying intensity. (Ex. 47, p. 4.11-10.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. The REP will interconnect to the City of Roseville's distribution grid via a new on-site 100-foot long double-circuit 60 kV overhead line that will loop into the prospective 60 kV line to be constructed by Roseville Electric (RE) under the West Roseville Specific Plan (WRSP).

2. The interconnection line design and operational plan will ensure that the electric and magnetic fields associated with the REP are managed to an acceptable extent given the available health effects information.

3. Long-term electromagnetic field exposure is insignificant in this case because the line is located entirely on the REP property and there are no residences near the proposed route. On-site worker and/or public exposure will be short-term and at levels expected for RE lines of similar design and current-carrying capacity. This type of exposure has not been proven to cause a significant human health hazard.

4. The potential for nuisance shocks will be minimized through grounding and other field-reducing measures implemented in accordance with current RE guidelines (reflecting standard industry practices).

5. Compliance with applicable law will adequately minimize any fire hazards.

6. Since there are no major airports or aviation centers in the immediate Project area, the interconnection line will not pose a significant aviation hazard.

7. The use of low-corona line design, together with appropriate corona-minimizing construction practices, minimizes the potential for corona noise and its related interference with radio-frequency communication.

8. The Conditions of Certification reasonably ensure that the Project's transmission line will not result in significant adverse environmental impacts on public health and safety, nor cause impacts to aviation safety, radio/TV communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or electromagnetic field exposure.

We therefore conclude that with implementation of the Conditions of Certification, the Project will conform with all applicable laws, ordinances, regulations, and standards relating to Transmission Line Safety and Nuisance as identified in the pertinent portion of **APPENDIX A** of this Decision.

CONDITIONS OF CERTIFICATION

TLSN-1 The Project Owner shall provide specific evidence that the REP's interconnection transmission line will be designed and constructed by Roseville Electric according to the requirements of CPUC's GO-95, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations and RE's EMF reduction guidelines arising from CPUC Decision 93-11-013.

VERIFICATION: At least 30 days before starting construction of RE's transmission lines or related structures and facilities, the Project Owner shall submit to the CPM a letter from Roseville Electric affirming that the overhead section of the REP line will be constructed according to the requirements of GO-95, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations, and RE's EMF-reduction guidelines arising from CPUC Decision 93-11-013.

TLSN-2 The Project Owner shall provide specific evidence that all metallic objects along the route of the overhead section will be grounded according to RE's practices.

VERIFICATION: At least 30 days before the lines are energized, the Project Owner shall transmit to the CPM a letter confirming potential compliance with the specified grounding requirements.

TLSN-3 The Project Owner shall provide the results of the electric and magnetic field measurements for the proposed REP line (as made according to IEEE measurement protocols) before and after it is energized. Measurements shall be made at representative points (along the line's on-site location) as necessary to identify the maximum field exposures possible during REP operations.

VERIFICATION: The Project Owner shall submit the field measurement results to the CPM within 60 days of completion.

This Page Left Intentionally Blank

V. PUBLIC HEALTH AND SAFETY ASSESSMENT

Operation of the REP will create combustion products and utilize certain hazardous materials that could potentially cause adverse health effects to the general public and to the workers at the facility. The following sections describe the regulatory programs, standards, protocols, and analyses that address these issues.

A. AIR QUALITY

This section examines the potential adverse impacts of criteria air pollutant emissions resulting from project construction and operation. In consultation with the local air pollution control district, the Commission determines whether the project will likely conform with applicable LORS, whether it will likely result in significant air quality impacts, including violations of ambient air quality standards, and whether the project's proposed mitigation measures will likely reduce potential impacts to insignificant levels.

SUMMARY AND DISCUSSION OF THE EVIDENCE

By the time of the evidentiary hearing, the parties had reached agreement on all relevant issues involving air quality effects of the project. including all Conditions of Certification related to mitigation of construction and operation impacts from the project. (1/25/05 RT 14-16.) Uncontested testimony was submitted by REP at the evidentiary hearing. (Exs. 1, 3, 6, 12, 18, 28.) Staff submitted its air quality analysis at the hearing as well. (Ex. 47, 48.)

The air quality analyses of both Applicant and Staffs are guided by federal, and state, laws as well as local air district rules. National ambient air quality standards (NAAQS) have been established for seven air contaminants identified as "criteria air pollutants." These include sulfur dioxide (SO_2), carbon monoxide

(CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The review of potential impacts also includes the precursor pollutants for ozone, which are nitrogen oxides (NO_x) and volatile organic compounds (VOC), as well as the precursors for PM_{10} and $PM_{2.5}$, which are primarily NO_x, sulfur oxides (SO_x), and ammonia (NH_3).

The federal Clean Air Act[6] requires new major stationary sources of air pollution to comply with federal requirements in order to obtain authority-to-construct permits. The U.S. Environmental Protection Agency (USEPA), which administers the Clean Air Act, has designated all areas of the United States as attainment/unclassified (air quality better than the NAAQS or unable to determine) or nonattainment (worse than the NAAQS) for criteria air pollutants, with the exception of $PM_{2.5}$, for which attainment classifications have not yet been designated.

There are two major components of air pollution law: New Source Review (NSR) for evaluating pollutants that violate federal standards, and Prevention of Significant Deterioration (PSD) for evaluating those pollutants that do not violate federal standards. Enforcement of NSR and PSD rules is typically delegated to local air districts. In this case, the Placer County Air Pollution Control District (Air District) is the local authority.

Both the USEPA and the California Air Resources Board (CARB) have established allowable maximum ambient concentrations for criteria pollutants. The California Ambient Air Quality Standards (CAAQS) are more stringent than federal standards. The Federal and State ambient air quality standards[7] applicable to the REP are shown in **AIR QUALITY Table 1** below.

---

[6] Title 42, United States Code, section 7401 et. seq.

[7]The standards are read as a mass fraction, in parts per million (ppm), or as a concentration in milligrams or micrograms of pollutant per cubic meter of air (mg/m^3 or $\mu g/m^3$).

The REP site is located approximately five miles northwest of the City of Roseville, adjacent to the Pleasant Grove Waste Water Treatment Plant. The surrounding topography is typified by flat to rolling hills in all directions and is approximately 95 feet above mean sea level in elevation. The prevailing daylight wind patterns are from the south or south-southeast and diurnal winds from the north or north-northwest with an overall annual average windspeed of 3.5 meters per second. The relative humidity ranges from 30 to 90 percent with occasional lingering heavy fog in the winter months.

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O3)	8 hour	0.08 ppm (157 ug/m^3)	---
	1 hour	0.12 ppm (235 ug/m^3)	0.09 ppm (180 ug/m^3)
Carbon Monoxide (CO)	8 hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 ug/m^3)	---
	1 hour	---	0.25 ppm (470 ug/m^3)
Sulfur Dioxide (SO_2)	Annual Average	3 ppm (80 ug/m^3)	---
	24 hour	0.14 ppm (365 ug/m^3)	0.04 ppm (105 ug/m^3)
	3 hour	0.5 ppm (1300 ug/m^3)	---
	1 hour	---	0.25 ppm (655 ug/m^3)
Fine Particulate Matter (PM10)	Annual	50 ug/m^3	20 ug/m^3
	24 hour	150 ug/m^3	50 ug/m^3
Ultra Fine Particulate Matter (PM2.5)	Annual	15 ug/m^3	12 ug/m^3
	24 hour	65 ug/m^3	---
Sulfates (SO4)	24 hour	---	25 ug/m^3
Lead	30 Day Average	---	1.5 ug/m^3
	Calendar Quarter	1.5 ug/m^3	---
Hydrogen Sulfide (H_2S)	1 hour	---	0.03 ppm (42 ug/m^3)
Vinyl Chloride (chloroethene)	24 hour	---	0.010 ppm (26 ug/m^3)
Visibility Reducing Particulates	1 observation	---	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: Ex. 47, p. 4.1-4.

The USEPA, CARB, and the local air district classify an area as attainment, unclassified, or nonattainment with the ambient air quality standards based on the monitored ambient air quality data. The REP is located within the Sacramento Valley Air Basin; this area is designated as nonattainment for both the federal and state ozone standards and is designated nonattainment for state PM 10 and PM 2.5 standards. **AIR QUALITY Table 2** summarizes the federal and state attainment status of criteria pollutants for the Sacramento Valley Air Basin.

AIR QUALITY Table 2

Attainment/ Non-Attainment Classification
Placer County Air Pollution Control District

Pollutants	Federal Classification	State Classification
Ozone 1-hour	Non-Attainment	Non-Attainment
Ozone 8-hour	Non-Attainment	---
PM10	Unclassified	Non-Attainment
PM2.5	Designation recommended by CARB to be Attainment	Non-Attainment
CO	Attainment	Unclassified
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

Source: Ex. 47, p. 4.1-5.

The closest ambient air quality monitoring stations to the project location are at North Highlands on Blackfoot Way (to the southwest), the Roseville station on N. Sunrise Blvd (to the northeast) and at Rocklin on Rocklin Rd (further northeast). After extensive review of the available ambient air quality monitoring data from these three stations, Staff recommended measurements in **AIR QUALITY Table 3** to be reasonably representative of the expected background ambient air quality. (Ex. 47, p. 4.1-7.)

The background ambient air quality data shows current violations of the 1-hour and 8-hour ozone federal ambient air quality standards (as well as the 1-hour ozone state ambient air quality standard). Additionally, the background data shows violations of the PM10 24-hour, PM10 annual and PM2.5 annual state ambient air quality standards. Finally, the background data shows that there are no violations of the NO_2, SO_2 or CO state or federal ambient air quality standards.

AIR QUALITY Table 3

Recommended Background Pollution Concentrations

Pollutant	**Averaging Time**	**Measurement** ug/m^3	ppm	**Station**	**Date**
Ozone	8-hour	233	0.119	Rocklin	1998
	1-hour	300	0.153	Roseville	1998
PM10	Annual	25.2	--	Roseville	2002
	24-hour	62.0	--	Roseville	2001
PM2.5	Annual	13.4	--	Roseville	1999
	24-hour	53	--	Roseville	2002
CO	8-hour	3,122	2.81	Roseville	2002
	1-hour	5,257	4.6	Roseville	2002
NO_2	Annual	30.2	0.016	Roseville	2002
	1-hour	182.4	0.097	Roseville	1998
SO_2	Annual	0.05	0.002	North Highlands	2002
	24-hour	28.7	0.011	North Highlands	2001
	3-hour	31.2	0.012	North Highlands	2001
	1-hour	49.8	0.019	North Highlands	2002

Source: California Air Resources Board, Ex. 47, p. 4.1-8.)

Ammonia Slip

The REP will control NOx emissions through either the use of Dry Low-NOx combusters on the GTX100 or by using water injected combusters on the LM6000. Either alternative will also use selective catalytic reduction (SCR). Significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. However, not all of this ammonia mixes in the flue gases within the catalyst of the SCR to reduce NOx; a portion of the ammonia passes

through the SCR and is emitted unaltered, out the stacks. These ammonia emissions are known as ammonia slip

The effect of ammonia slip on the formation of particulates depends on the ammonia inventory in the ambient air. This inventory will determine whether the area is ammonia rich, resulting in a low impact from ammonia slip, or ammonia limited, in which case the same amount of ammonia slip would lead to a greater formation of particulates. (Ex. 47, pp. 4.1-8 to 4.1-9.)

For the purpose of determining the potential impacts of secondary particulate formation of PM10/PM2.5, it is necessary to first determine if the area is either ammonia rich or ammonia limited as discussed above and second, to determine what additional ammonium sulfate and ammonium nitrate are likely to form. Lastly, those impacts must be compared to the existing background measurements. Unfortunately, no information is available to complete any of these steps. What can be done is to determine if the potential exists for ammonia, SOx and NOx emissions from the proposed REP facility to contribute to an existing violation of the PM10 or PM2.5 state ambient air quality standards.

There is no ammonia inventory data available for Placer County. However, from ammonia inventories of other counties and air districts (as well as the state inventory), it is clear that such inventories are dominated by livestock (45 percent statewide), on-road mobile (19 percent statewide) and composting, fertilizers, and other agricultural sources (19 percent statewide). Currently, there are two ammonia inventories available from CARB in addition to the state inventory: San Joaquin Valley Air Pollution Control District (2000) and South Coast Air Quality Management District (2000). To gain a reasonable estimate of local ammonia inventories, Commission staff modified the San Joaquin inventory slightly arriving at what Staff believes is a reasonable estimate of what the Placer County ammonia inventory might be. (Ex. 47, 4.1-9.)

Staff examined economic and population data for the Roseville area and determined that less than one percent of employees in Placer County are engaged in the Agricultural sector while Trade, Transportation, & Utilities sector makes up close to 20 percent of the county's total employment in 2002. On that basis Staff believes it is reasonable to assume that a Placer County ammonia inventory (if one existed) would not have significant contributions from livestock or agricultural sources. That leaves on-road mobile sources as the only major contributor to a Placer County ammonia inventory. Staff adjusted known data from the San Joaquin Valley ammonia inventory and estimated a Placer County ammonia inventory of approximately 36 tons/day. (Ex. 47, p. 4.1-9.)

In comparison to the ammonia rich areas of San Joaquin Valley (368.7 tons/day) and the South Coast (181.7 tons/day), the estimated ammonia inventory of Placer County (36 tons/day) lead staff to presume that the Roseville area is ammonia limited. Thus, Staff concluded that the release of further ammonia would lead to further PM10/PM2.5 formation downwind and that the release of ammonia slip from the REP facility has a high likelihood of forming additional PM10/PM2.5 downwind and thus contributing to an existing violation of the PM10 or PM2.5 state ambient air quality standards.

Because the District is classified as non-attainment for both the PM10 and PM2.5 state ambient air quality standards, and due to Staff's assumption that the project is in an ammonia-limited area, Staff determined that emitting additional ammonia is likely to lead to further PM2.5 formation. This would lead to further violations of the PM10/PM2.5 state ambient air quality standards.

To reduce the degree to which ammonia from excessive ammonia slip would contribute to the formation of PM2.5, Staff initially recommended that the REP ammonia slip be limited to no more than five ppm @ 15 percent O_2 averaged over three hours. Prior to the evidentiary hearing Staff reached agreement with REP to modify proposed Condition **AQ-51**. Based on the modified condition, the

project owner will be required to limit the ammonia slip emissions from the proposed project to no more than 10 ppm @ 15 percent O_2 averaged over 1 hour. The project owner agreed to schedule the major maintenance for the SCR catalyst when the ammonia slip begins to consistently exceed 5 ppm @ 15 percent O_2 averaged over 24 hours. With these modifications the record shows that project ammonia emissions will not increase significantly beyond 5 ppm and the project ammonia slip emissions will not have a significant potential to contribute to an exceedance of the PM2.5 ambient air quality standards. (Ex. 49, p. 2-3.)

Air emissions will result during both the project's construction and operational phases.

1. Construction Impacts

The REP facility will take approximately 20 months to construct. The power plant project construction consists of three major areas of activity: 1) the civil/structural construction; 2) the mechanical construction; and 3) the electrical construction. The largest fugitive dust emissions are generated during the civil/structural activity, where work such as demolition, grading, site preparation, foundations, underground utility installation and building erection occur. These types of activities require the use of large earth moving equipment, which generate considerable fugitive dust and combustion emissions. The mechanical construction includes the installation of the heavy equipment, such as the combustion and steam turbines, the heat recovery steam generators, condenser, pumps, piping and valves. The use of large cranes to install such equipment generates significantly more combustion emissions than other construction equipment onsite. Finally, the electrical equipment installation involves such items as transformers, switching gear, instrumentation and wiring. This is a relatively small emission-generating activity in comparison to the early construction activities.

The City of Roseville currently utilizes the proposed site for the REP facility for equipment storage and laydown area. The proposed REP site is approximately seven acres, with the majority of the construction activities focused on three acres. The small amounts of demolition, grading and site preparation coupled with the mitigation measures that the applicant has agreed to are not expected to result in a significant amount of fugitive dust. The applicant also offered construction mitigation measures to reduce both fugitive dust and combustion PM10. **AIR QUALITY Table 4** shows the expected emissions from construction activities at the site with the following mitigation measures employed as proposed by the RE:

- Watering all unpaved roads and disturbed areas in the project and linear construction sites as necessary to prevent fugitive dust plumes.
- Limiting construction site speed to 10 miles per hour.
- Inspecting and washing vehicle tires so they are free of dirt prior to entering paved roadways.
- Using gravel or other roadway stabilizers as necessary.
- Using sandbags or other measures to prevent run-off to roadways.
- Covering or stabilizing all soil storage piles and disturbed areas.
- All transport solid bulk will be provided with a cover, or provide at least one foot of freeboard.
- Employing wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed.

AIR QUALITY Table 4

Estimated Construction Emissions

	NOx	CO	VOC	SOx	PM10
Daily (lbs/day)					
COMBUSTION EQUIPMENT	291.2	360.7	52.2	23.9	17.0
Fugitive Dust	--	--	--	--	4.52
Annual (tons/year)					
COMBUSTION EQUIPMENT	10.8	35.7	4.4	0.6	1.0
Fugitive Dust	--	--	--	--	0.60
Total (20 month) Construction Period (tons/year)					
COMBUSTION EQUIPMENT	18.0	59.5	7.3	1.0	1.65
Fugitive Dust	--	--	--	--	1.0

Note: Combustion emissions include construction equipment, truck and rail deliveries, and worker transportation.
Fugitive dust emissions include emissions from construction activities, truck and rail deliveries and worker travel.

Source: Ex. 47, p.4.1-11.

The evidence characterizes the short-term construction impacts as follows:

AIR QUALITY Table 5

Maximum Predicted Construction Emission Air Quality Impacts

Pollutant	Averaging Time	Direct Impacts (ug/m^3)	Background (ug/m^3)	Total Impact (ug/m^3)	Limiting Standard (ug/m^3)	Total Impact as a Percent of Standard
NO2	1-hour	242.9	182.4	425.3	470	90%
	Annual	7.623	30.2	37.8	100	38%
CO	1-hour	769.2	5,257	6,026	23,000	26%
	8-hour	419.7	3,122	3,542	10,000	35%
SO_2	1-hour	161.4	49.8	211.2	655	32%
	24-hour	34.2	28.7	62.9	105	60%
	Annual	0.091	0.05	0.141	80	0%
PM10	**24-hour**	66.1	62.0	128.1	50	**256%**
	Annual	5.68	25.2	30.9	20	**154%**

Notes:
NO2 1-hour predicted impacts assume ozone limiting based on available ozone data between the expected construction activity hours of 8am and 4pm.
NO2 annual predicted impacts assume an ARM ratio of 75%.
Background concentrations are from **AIR QUALITY Table 3, Ex. 47, p. 4.1-8**.

Source: Exhibit 47, p. 4.1-18.

As shown above, the construction phase's PM_{10} impacts will contribute to the existing exceedance of the ambient air quality standards. Maximum NO_x, CO, and SO_2 impacts will remain below applicable standards.

2. Operational Impacts

RE is proposing to license two optional power plant configurations, one based on the GE LM6000 combustion turbine, and the other based on the Alstom GTX100 turbine. Both are proposed to be a two-on-one design, which comprises two combustion turbines with supplemental duct fired heat recovery steam generators and one steam generator. Both options will be designed to reach a nominal capacity of approximately 120 to 125 MW with peak capability (including the duct burners) of 160 MW.

The major equipment at the REP facility will include one of the following two options:

Option	Turbine	Duct firing at the HRSG	Steam Generator
1	GE LM6000 PC Sprint Input heat rate: 446.8 MMBtu/hr Nominal output: 47 MW Water Injected Combustors	Input heat rate 255 MMBtu/hr	Nominal Output 30 MW
2	Alstom GTX100 Input heat rate: 457.3 MMBtu/hr Nominal output: 43 MW Dry Low-NOx Combustors	Input heat rate 225 MMBtu/hr	Nominal Output 43 MW

Both options will include the following equipment:

- Two 120 feet high exhaust emission stacks to be directly preceded by ammonia injection into a selective catalytic reduction (SCR) and an oxidation catalyst;
- One auxiliary natural gas-fired boiler rated at 58 MMBtu/hr input heat rate and an output of 40,000 lbs steam per hour (600 psig);
- One 1,133 horsepower (hp) 750 kW diesel-fire emergency generator;
- One 300 hp diesel-fired firewater pump; and

- One four-cell cooling tower, with 54,414-gpm throughput and 0.0005percent drift rate.

RE has proposed the operational schedule shown in **AIR QUALITY Tables 6a, 6b** and **6c** for the REP facility.

AIR QUALITY Table 6a
Proposed Power Plant Operational Schedule
(Hours)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
BASE LOAD OPERATION PER TURBINE	1,123	1,188	751	852	3,914
Peak Load Operation per Turbine/HRSG	929	559	1,347	1,246	4,081
Startup and Shutdown per Turbine	44	117	34	47	242
Total Hours of Operation per Turbine	2,096	1,864	2,132	2,145	8,237
Auxiliary Boiler	140	568	143	143	995
Emergency Generator	12.5	12.5	12.5	12.5	50
Firewater Pump	12.5	12.5	12.5	12.5	50

Source Ex. 47, p. 4.1-12

The REP facility is assumed to operate at a base load of approximately 120 to 125 MW firing both combustion turbine generators (CTGs) with no duct firing and a peak load of 160 MW with duct firing. Startup will consist of 167 hot starts (one-hour duration), 30 warm starts (two-hour duration) and five cold starts (three-hour duration) for a total of 242 hours of startup for each turbine.

The auxiliary boiler is proposed to provide steam when the CTGs are not operating, but not for the purpose of generating electric power. It will provide steam for HRSG drum sparging, condenser hotwell sparging, steam turbine glands, and deaeration when the plant is offline. The firewater pump and emergency generator are to be used in emergency conditions and will be tested weekly running 30 minutes for each test. (Ex. 47, p. 4.1-13.)

Because the REP facility has not been able to find sufficient NO_2 Emission Reduction Credits (ERCs) for the operational scenario in **AIR QUALITY Table 6a**, RE has proposed to accept a limiting condition on the REP facility NOx emissions. The NOx limit proposed by the District in their Final Determination of Compliance (FDOC) is based on the emissions of the LM6000 combustion turbine and the operational profile shown in **AIR QUALITY Table 6b**. This NOx emission limit presumes that RE will provide another 10 tons of NO_2 ERCs from post-combustion controls that are to be added to a local landfill-gas-to-energy operation (discussed in more detail in the Proposed Mitigation section). RE also submitted an operational profile that considers only the NO_2 and VOC ERCs that they currently own of for which they have purchase agreements traded for NO2 ERCs (shown in **AIR QUALITY Table 6c**).

AIR QUALITY Table 6b
Power Plant Operational Profile
Corresponding to a NOx Emission Limit of 31.1 tons/year
(Hours)

	1st Quarter	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**Annual**
BASE LOAD OPERATION PER TURBINE	1,324	1,094	1,247	1,298	4,963
Peak Load Operation per Turbine/HRSG	500	321	849	509	2,179
Startup and Shutdown per Turbine	89	148	30	94	361
Total Hours of Operation per Turbine	1913	1563	2126	1901	7503

Source: Ex. 47, p. 4.1-13

AIR QUALITY Table 6c
Power Plant Operational Profile
Corresponding to a NOx emission Limit of 23.4 tons/year
(Hours)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
BASE LOAD OPERATION PER TURBINE	1,304	761	1,240	1,238	4,543
Peak Load Operation per Turbine/HRSG	183	13	563	166	925
Startup and Shutdown per Turbine	27	106	92	136	361
Total Hours of Operation per Turbine	1,514	880	1,895	1,540	5,829

Source: Ex. 47, p. 4.1-14

The exclusive use of an inherently clean fuel, natural gas, will limit the formation of SO_2, PM2.5 and PM10 emissions. Natural gas contains very small amounts of a sulfur compound known as mercaptan, which when combusted, results in sulfur compound emissions of SO_2 in the flue gas. However, in comparison to other fuels used in power plants, such as fuel oil or coal, the sulfur content of natural gas is very low. Similar to SO_2, the emissions of PM2.5 and PM10 from natural gas combustion are very low compared to the combustion of fuel oil or coal. Natural gas contains very little noncombustible gas or solid residue; therefore, it is a relatively clean-burning fuel.

CO and VOC emissions will be controlled through the application of an oxidizing catalyst. NOx emissions will be controlled through ammonia injection in conjunction with SCR. In addition to these post-combustion controls, the GTX100 turbines will employ Dry Low-NOx combustors and the LM6000 turbines will employ water injection into the combustors to reduce the formation of NOx emissions.

AIR QUALITY Table 7a shows the maximum expected air emissions as proposed by RE. The estimated maximum expected emissions from the REP facility are based on the following assumptions.

AIR QUALITY Table 7a
Maximum Expected Operational Emissions

	NOx		SO_2		CO		VOC		PM10	
	LM6000	GTX100	LM6000	GTX100	LM6000	GTX100	LM6000	GTX100	LM6000	GTX100
Hourly (lbs/hr)	49.7	122.8	2.14	2.21	42.2	204.8	3.9	39.8	10.6	10.8
Daily (lbs/day)	291.5	428.8	48.21	49.3	354.5	683.2	89.9	229.4	252.4	257.6
Quarterly (tons/quarter)[A]										
Quarter 1	see Tables 7b and 7c		3,331	3,400	21625	27121	6,046	5,832	17523	17673
Quarter 2			2,838	2,893	19737	33872	5,188	7,455	15246	15513
Quarter 3			3,630	3,709	23500	28515	6,596	6,672	18999	19168
Quarter 4			3,587	3,663	23322	30202	6,514	6,890	18788	19158
Annual (tons/year)			6.69	6.83	44.09	59.86	12.17	13.42	32.28	35.95

Source: (Ex. 47, p. 4.1-15.)
A - Quarterly and annual emissions of SO2, CO, VOC and PM10 are based on the operational profile shown in AIR QUALITY Table 6a.

For the highest daily emissions of NOx, CO, and VOC (from the GTX100 only), the REP turbine/HRSG trains are assumed to have one cold start (three hour duration), one warm start (two hour duration) and 19 hours of peak load operation. For the emissions of SO_2, PM10 and VOC emissions (from the LM6000 only), the REP turbine/HRSG trains are operating at peak load for 24 hours each. The auxiliary boiler is assumed to be at full potential output and the cooling tower is assumed to be at full operational load. The emergency generator and firewater pump are assumed to both be test-fired (30-minute duration each, not during startup). (Ex. 47, p. 4.1-15.)

The maximum quarterly and annual emissions, excluding NOx, are based on the operational schedule provided in **AIR QUALITY Table 6a**.

The expected Quarterly and Annual NOx emissions are found in **AIR QUALITY Tables 7b** and **7c,** and are based on the LM6000 turbine and the operational profiles of **AIR QUALITY Tables 6b** and **6c**, respectively. The emission limits proposed for the REP are based on these emission estimates and will be enforced both for the LM6000 and GTX100 options. (Ex. 4.1-15.)

AIR QUALITY Table 7b
Maximum Expected Quarterly and Annual Operational NOx Emissions
Based on the Operational Profile of AIR QUALITY Table 6b

Quarterly Emissions (lbs/quarter)				Annual (tons/year)
Quarter 1	Quarter 2	Quarter 3	Quarter 4	
15,546	13,412	17,646	15,572	31.09

AIR QUALITY Table 7c
Maximum Expected Quarterly and Annual Operational NOx Emissions
Based on the Operational Profile of AIR QUALITY Table 6c

Quarterly Emissions (lbs/quarter)				Annual (tons/year)
Quarter 1	Quarter 2	Quarter 3	Quarter 4	
11,337	7,429	15,646	12,378	23.39

RE proposes to control NOx emissions to 10 ppmv @ 15 percent O_2 averaged over one-hour through either the use of Dry Low-NOx combustors (GTX100) or water injected combustors (LM6000) and SCR. Significant amounts of ammonia will be injected into the flue gas stream as part of the SCR system. A portion of the ammonia passes through the SCR and is emitted unaltered, out the stacks. These ammonia emissions make up the ammonia slip discussed previously. RE has committed to an ammonia slip no greater than 10 ppm @ 15 percent O_2. On a daily basis, the ammonia slip of 10 ppm is equivalent to approximately 220.8 lbs/day (LM6000), or 228.0 lbs/day (GTX100) of ammonia emitted into the atmosphere per turbine. An ammonia slip of 10 ppm is usually associated with the significant degradation of the SCR catalyst. This degradation typically begins two years or more after initial operation. Prior to the ammonia slip exceeding 10 ppm, the SCR catalysts are removed and reconditioned or replaced with new catalysts. Thus, through most of the operation of the SCR system, ammonia slip emissions are usually in the range of 1 to 2 ppm, corresponding to mass emissions of approximately 22 to 46 pounds per day per turbine.

The results of the ISCST3 modeling analysis (see **AIR QUALITY Table 8**) showed that only construction PM10 emission impacts (24-hour and annual) are

expected to contribute to an existing violation of the state PM10 (24-hour and annual) ambient air quality standards. The closest residence is approximately 1,200 feet north of the project site, where the modeling predicts the PM10 impacts from construction would not occur. However, City employees work at the Pleasant Grove Waste Water Treatment Plant (PGWWTP), located directly adjacent to the REP proposed construction site. The distance and direction of the maximum predicted construction PM10 emission air quality impacts suggest that these impacts may fall within the facility boundary of PGWWTP. Thus, it is reasonable to provide mitigation to the extent feasible for the protection of these employees.

AIR QUALITY Table 8
Maximum Predicted Construction Emission Air Quality Impacts

Pollutant	Averaging Time	Direct Impacts (ug/m^3)	Background (ug/m^3)	Total Impact (ug/m^3)	Limiting Standard (ug/m^3)	Total Impact as a Percent of Standard
NO2	1-hour	242.9	182.4	425.3	470	90%
	Annual	7.623	30.2	37.8	100	38%
CO	1-hour	769.2	5,257	6,026	23,000	26%
	8-hour	419.7	3,122	3,542	10,000	35%
SO_2	1-hour	161.4	49.8	211.2	655	32%
	24-hour	34.2	28.7	62.9	105	60%
	Annual	0.091	0.05	0.141	80	0%
PM10	**24-hour**	66.1	62.0	128.1	50	**256%**
	Annual	5.68	25.2	30.9	20	**154%**

Notes:
NO2 1-hour predicted impacts assume ozone limiting based on available ozone data between the expected construction activity hours of 8am and 4pm.
NO2 annual predicted impacts assume an ARM ratio of 75%.
Background concentrations are from **AIR QUALITY Table 3**.

Source: (Ex. 47, p. 4.1-18.)

The air quality impacts of project operation are shown in the following sections for fumigation meteorological conditions, and during the facility start-up and steady-state operations.

During the early morning hours before sunrise, the air is usually very stable. During such stable meteorological conditions, emissions from elevated stacks rise through this stable layer and are dispersed. When the sun first rises, the air at ground level is heated, resulting in a vertical (both rising and sinking air) mixing of air for a few hundred feet or so. Emissions from a stack that enter this vertically mixed layer of air will also be vertically mixed, bringing some of those emissions down to ground level. Later in the day, as the sun continues to heat the ground, this vertical mixing layer becomes higher and higher, and the emissions plume becomes better dispersed. The early morning air pollution event, called fumigation, usually lasts approximately 30 to 90 minutes. The results of the modeling analysis show that fumigation impacts will not violate the NO2, CO or SO_2 one -hour standards.

AIR QUALITY Table 9
Estimated Facility Fumigation One-hour Air Quality Impacts

Pollutant	Direct Impact (ug/m^3)		Background (ug/m^3)	Total Impact (ug/m^3)		Limiting Standard (ug/m^3)	Total Impact as a Percent of Standard	
	LM6000	GTX100		LM6000	GTX100		LM6000	GTX100
NO_2	24.3	25.0	182.4	206.7	207.4	470	44%	44%
CO	16.5	17.1	5,257	5,274	5,274	23,000	23%	23%
SO_2	1.40	1.45	49.8	51.2	51.3	655	8%	8%
Notes Background concentrations are taken from **AIR QUALITY Table 3**.								

Source: (Ex. 47, p. 4.1-19.)

Until it is able to secure the offsets necessary for full operation, RE is proposing to lower the operational emissions of the REP project, which would also lower the corresponding air quality impacts. Therefore, the existing modeling assessment is presented below with the understanding that it is clearly over predicting the REP project emission air quality impacts. RE provided staff with a modeling analysis, using the ISCST3 model to quantify the potential impacts of the project for both turbines, during normal steady state operation and during start-up conditions. The refined modeling impacts are shown in **AIR QUALITY Table 10**. The REP PM10 impacts could contribute to existing violations of the state 24-hour and annual average PM10 standards.

The modeling assessment showed that the maximum one-hour air quality emission impacts from the facility would occur when the facility is at peak load and the auxiliary boiler is in operation. This is due to the fact that the auxiliary boiler, while fairly clean (burning natural gas), has a much lower stack than the combustion turbines. This lower stack generally results in less dispersion and thus higher emission impacts. Commission staff included three other operating scenarios in **AIR QUALITY Table 10** of its FSA because the maximum expected NO_2 emission impacts are very close to contributing to a new violation of the one-hour NO_2 ambient AAQS. The modeling results are high because the applicant has not used the ozone-limiting method (OLM) to refine the modeling results. Without using OLM, RE is assuming that all of the NOx (NO and NO_2) emitted from the stack is converted into NO_2. What actually occurs is that about 10 percent of the NOx emitted is emitted as NO_2; the rest is NO. The NO emissions are converted to NO_2 by ambient ozone. OLM takes this fact into consideration and estimates the final NO_2 concentrations from the modeled NOx concentrations and the recorded ambient ozone concentrations. Thus, if RE chooses to use OLM, the final modeling results would be 10 percent to 20 percent of that currently shown in **AIR QUALITY Table 10**. Given the modeling results shown in **AIR QUALITY Table 10**, staff concluded that only the PM10 emissions are reasonably likely to contribute directly to an existing violation of the state PM10 (24-hour and annual) ambient air quality standards if left unmitigated, and that this impact is significant.

AIR QUALITY Table 10
Maximum Predicted Operational Emission Air Quality Impacts

Pollutants	Averaging Time	Direct Impacts (ug/m^3)		Background (ug/m^3)	Total Impacts (ug/m^3)		Limiting Standard (ug/m^3)	Total Impact as a Percentage of Standard	
		LM6000	GTX100		LM6000	GTX100		LM6000	GTX100
NO_2	1-hour Peak Load with boiler	275.8	275.8	182.4	458.2	458.2	470	**97%**	**97%**
	1-hour Startup	117.0	129.8	182.4	299.4	312.2	470	64%	66%
	1-hour Peak Load	15.8	16.2	182.4	198.2	198.6	470	42%	42%
	1-hour Base load	7.77	10.23	182.4	190.2	192.6	470	40%	41%
	Annual	1.33	1.34	30.2	31.5	31.5	100	32%	32%
CO	1-hour	377.1	377.1	5,257	5,634	5,634	23,000	24%	24%
	8-hour	126.0	134.1	3,122	3,248	3,256	10,000	32%	33%
SO_2	1-hour	49.9	49.9	49.8	69.7	69.7	655	11%	11%
	24-hour	2.33	2.33	28.7	31.0	31.0	365	9%	9%
	Annual	0.07	0.07	0.05	0.12	0.12	80	0%	0%
PM10	24-hour	16.7	16.7	62.0	78.7	78.7	50	**157%**	**157%**
	Annual	0.46	0.46	25.2	25.7	25.7	20	**128%**	**128%**

Notes:
Background concentrations are from **AIR QUALITY Table 3**.
NO_2 impacts assumption:
All 1-hour NO_2 impacts assume no ozone limiting method.
Both turbines in peak load operation and the auxiliary boiler on.
Both turbines in startup operation and the auxiliary boiler on.
Both turbines in peak load operation and the auxiliary boiler off.
Both turbines in base load operation and the auxiliary boiler off.

Source: Ex. 47, p. 4.1-20

The project's gaseous emissions of NOx, SO_2, VOC and ammonia can contribute to the formation of the secondary pollutants ozone and PM10/PM2.5. Because of the known relationship of NOx and VOC emissions to ozone formation, the emissions of NOx and VOC from the REP do have the potential (if left unmitigated) to contribute to higher ozone levels in the region. These impacts would be significant because they would contribute to ongoing violations of the state and federal ozone ambient air quality standards.

Greenhouse Gases

In addition to regulated criteria pollutants, the combustion of natural gas produces air emissions known as greenhouse gases. These include primarily carbon dioxide and methane (unburned natural gas). Greenhouse gases are

known to contribute to the warming of the earth's atmosphere. Climate change from rising temperatures represents a risk to California's economy, public health, and environment due to changes in sea levels that could lead to flooding of coastal communities, drought, forest fires, decline of fish populations, reduced hydropower opportunities, and loss of habitat. In 1998, the Energy Commission identified a range of strategies to prepare for an uncertain climate future, including a need to account for the environmental impacts associated with energy production, planning, and procurement.[8] In 2003, the Energy Commission recommended that the state should require reporting of greenhouse gas emissions as a condition of state licensing of new electric generating facilities. Condition of Certification **AQ-SC7** requires the project owner to report the quantities of each greenhouse gas emitted as a result of facility operation. Such reporting would be done in accordance with accepted reporting protocol as specified.

Cumulative Impacts

Cumulative impacts refer to two or more individual impacts when, considered together, are considerable or increase other environmental impacts. A cumulative impact analysis must identify past, present, and reasonably foreseeable projects, estimate the impact of these projects and recommend mitigation measures for those impacts found to be significant.

The Commission has developed a procedure for addressing cumulative impacts on air quality from power plant projects. Since the power plant air quality impacts can be reasonably estimated through air dispersion modeling (see Operational Modeling Analysis section) the project contributions to cumulative impacts can be estimated. To represent "past" and, to an extent, "present projects" that contribute to ambient air quality conditions, the Staff recommends the use of ambient air quality monitoring data, referred to as the "background". The

[8] California Energy Commission. 1997 Global Climate Change, Greenhouse Gas Emissions Reduction Strategies for California, Volume 2, Staff Report. 1998.

Commission has the following procedures to estimate what are additional appropriate "present projects" that are not represented in the background and "reasonably foreseeable projects":

- First, the Commission staff (or the applicant) works with the air district to identify all projects that have submitted, within the last year of monitoring data, new application for an authority to construct (ATC) or permit to operate (PTO) and applications to modify an existing PTO within six miles of the project site. Beyond six miles, staff has determined through experience, there is very little chance for air emissions to interact directly. This effectively identifies all new emissions that emanate from a single point (e.g., a smoke stack), referred to as point sources. The Commission uses the submittal of an air district application as a reasonable demarcation of what is "reasonably foreseeable". So, as an example, if the last year of ambient air quality monitoring data from area monitoring stations was 2003, then Commission staff (or the applicant) would ask the air district for all new applications that are not included in the ambient data.
- Second, the Commission staff (or the applicant) works with the air district and local counties to identify any new area sources within six miles of the project site. As opposed to point sources, area sources include sources like agricultural fields, residential developments or other such sources that do not have a distinct point of emission. New area sources are typically identified through draft or final Environmental Impact Reports (EIR) that are prepared for those sources. The Commission uses the initiation of the EIR process as the demarcation of "reasonably foreseeable" for new area sources.
- The data submitted, or generated from the applications with the air district for point sources or initiating the EIR process for area sources provides enough information to render these new emission sources in air dispersion modeling. Thus the next step is to review the available EIR(s) and permit application(s), determine what sources must be modeled and how they must be modeled. All sources are not modeled, for example a source that is emitting only VOC emissions will not be modeled (this actually occurred in one case, the source was physically modified to reduce NOx, but also increased VOC).
- Sources that are not new, but may not be represented in ambient air quality monitoring are also identified and included in the analysis. When these sources are included, it is typically a result of there being an existing source on the project site and the ambient air quality monitoring station being more than two miles away.
- When there are multiple sources, and we are primarily interested in the contributions of the project emissions with these other sources to these

impacts, the modeling results are carefully interpreted so that they are not skewed towards smaller, high-impacting sources.

AIR QUALITY Table 10.5 shows the results of the modeling assessment done by RE. These results predict that the combined emissions of these sources with the ambient background measurements will cause new violations of the California State 1-hour NO_2 ambient air quality standard, the 24-hour SO_2 standard, 1-hour CO standard, and the annual PM10 standard. If this were in fact the case, this would be cause for significant concern. However, the record makes clear that these results are grossly over conservative and that these sources will not cause new violations of the ambient air quality standards with the exception of short-term (24 hours or less) PM10/PM2.5 and ozone standards that are currently being violated.

The modeling result files indicate that the majority of the cumulative impact is from the Western Roseville Specific Buildout Plan (WRSBP). The emission rates assumed for this source are very conservative and include both stationary and mobile sources, assuming that they will emit evenly throughout the entire year. While the modeling results of the cumulative assessment shown in AIR QUALITY Table 10.5 are excessively conservative, the Commission staff nevertheless determined that the REP NOx, PM10, VOC and SOx emission impacts on the ambient air quality are significant if left unmitigated. (Ex. 47, p. 4.1-24.)

AIR QUALITY Table 10.5
Results of Cumulative Assessment

Pollutant	Averaging Time	Maximum Multisource Concentration ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Ambient Concentration ($\mu g/m^3$)	REP Contribution ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2	1-hour	1,818.76	161.8	1980.56	275.77	470	-
	Annual	447.32	32.0	479.30	0.99	-	100
SO_2	1-hour	73.40	49.8	123.2	49.88	650	-
	3-hour	378.70	31.4	410.1	9.30	-	1300
	24-hour	99.19	28.8	127.99	2.33	109	365
	Annual	13.11	5.2	18.31	0.733	-	80
CO	1-hour	39,769.1	5269.8	45,038.9	377.12	23,000	40,000
	8-hour	5,846.4	3551.4	9,937.8	134.13	10,000	10,000
PM_{10}	24-hour	15.57	93.0	108.57	16.68	50	150
	Ann.Geo.	462.78	25.0	487.78	0.484	30	-
	Ann.Arith.	462.78	25.0	487.78	0.484	-	50

AIR QUALITY Table 10
Maximum Predicted Operational Emission Air Quality Impacts

Pollutants	Averaging Time	Direct Impacts (ug/m^3)		Background (ug/m^3)	Total Impacts (ug/m^3)		Limiting Standard (ug/m^3)	Total Impact as a Percentage of Standard	
		LM6000	GTX100		LM6000	GTX100		LM6000	GTX100
NO_2	1-hour Peak Load with boiler	275.8	275.8	182.4	458.2	458.2	470	**97%**	**97%**
	1-hour Startup	117.0	129.8	182.4	299.4	312.2	470	64%	66%
	1-hour Peak Load	15.8	16.2	182.4	198.2	198.6	470	42%	42%
	1-hour Base load	7.77	10.23	182.4	190.2	192.6	470	40%	41%
	Annual	1.33	1.34	30.2	31.5	31.5	100	32%	32%
CO	1-hour	377.1	377.1	5,257	5,634	5,634	23,000	24%	24%
	8-hour	126.0	134.1	3,122	3,248	3,256	10,000	32%	33%
SO_2	1-hour	49.9	49.9	49.8	69.7	69.7	655	11%	11%
	24-hour	2.33	2.33	28.7	31.0	31.0	365	9%	9%
	Annual	0.07	0.07	0.05	0.12	0.12	80	0%	0%
PM10	24-hour	16.7	16.7	62.0	78.7	78.7	50	**157%**	**157%**
	Annual	0.46	0.46	25.2	25.7	25.7	20	**128%**	**128%**

Notes: Background concentrations are from **AIR QUALITY Table 3**.

NO_2 impacts assumption: All 1-hour NO_2 impacts assume no ozone limiting method.
Both turbines in peak load operation and the auxiliary boiler on.
Both turbines in startup operation and the auxiliary boiler on.
Both turbines in peak load operation and the auxiliary boiler off.
Both turbines in base load operation and the auxiliary boiler off.

Source: Ex. 47, p. 4.1-20

FINDINGS AND CONCLUSIONS

Based on the persuasive weight of the evidence of record, we find as follows:

1. The proposed Roseville Energy Project is located in the Sacramento Valley Air Basin within the jurisdiction of the Placer County Air Pollution Control District.

2. The area is classified non-attainment for the state and federal ozone and PM_{10} standards. For all other criteria pollutants, it is designated attainment, unclassified, or attainment/unclassified.

3. Construction and operation of the REP will result in emissions of criteria pollutants.

4. The project will employ the best available control technology (BACT) to control project emissions of criteria pollutants.

5. Potential impacts from power plant construction-related activities will be mitigated to insignificant levels with implementation of a Construction Mitigation Plan that specifies dust control and diesel particulate reduction measures.

6. The Air District issued a Final Determination of Compliance that finds the REP will comply with all applicable District rules for project operation.

7. The PCAPCD has determined that an ammonia slip level of 10 ppm is appropriate for this project.

8. The evidence of record does not persuasively establish that an ammonia slip level of 10 ppm will lead to the formation of secondary particulates, or result in significant adverse impacts.

9. The project's offset package complies with Public Resources Code, section 25523 (d)(2).

10. Implementation of the Conditions of Certification listed below ensures that the REP will not result in any direct, indirect, or cumulative significant adverse impacts to air quality.

The Commission therefore concludes that the mitigation measures imposed are sufficient to ensure that the Roseville Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to air quality as set forth in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

AQ-SC1 The project owner shall designate and retain an on-site Air Quality Construction Mitigation Manager (AQCMM) who shall be responsible for directing and documenting compliance with conditions AQ-SC3 and AQ-SC4 for the entire project site and linear facility construction. The on-site AQCMM may delegate

responsibilities to one or more air quality construction mitigation monitors. The AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and any air quality construction mitigation monitors. The AQCMM and all delegated monitors must be approved by the CPM before the start of ground disturbance.

AQ-SC2 The project owner shall provide an Air Quality Construction Mitigation Plan (AQCMP), for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with conditions AQ-SC3 and AQ-SC4.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt.

AQ-SC3 The AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of preventing fugitive dust plumes from leaving the Project site and controlling other construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of AQ-SC4 (the prevention of fugitive dust plumes). The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan to prevent run-off to roadways.

i) All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

n) Diesel-Fueled Engines:

    (1) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

    (2) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

    (3) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM

that such engine is not available for a particular item of equipment. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

a. There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

b. The construction equipment is intended to be on-site for ten (10) days or less.

The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

The use of a soot filter may be terminated immediately if one of the following conditions exists, provided that the CPM is informed within ten (10) working days of the termination:

a. The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.

b. The soot filter is causing or is reasonably expected to cause significant engine damage.

c. The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.

d. Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

(4) All heavy earthmoving equipment and heavy duty construction related trucks with engines meeting the requirements of (n)(3) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

(5) All heavy construction equipment with engines meeting the requirements of (n)(3) above shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of all diesel fuel purchase records, (3) copies of any complaints filed with the air district in relation to project construction, (4) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained, and (5) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 The AQCMM shall continuously monitor the construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported a distance of 200 feet beyond the project boundaries or a distance of 200 feet beyond the centerline of the construction of linear facilities and within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section in the monthly compliance report detailing all observances by the AQCMP and mitigation actions taken.

AQ-SC5 The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District , and any revised permit issued by the District for the project.

Verification: The project owner shall submit any proposed air permit modification to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-SC6 The project owner shall maintain records of fuel use, emission and operational data sufficient to demonstrate compliance with the Conditions of Certification referenced herein.

Verification: The project owner shall submit to the CPM Quarterly Air Quality Reports no later than 30 days after the end of each calendar quarter.

AQ-SC7 If the project owner does not voluntarily participate in the California Climate Action Registry then the project owner shall report to the CPM the quantity of CO_2 emitted on an annual basis as a direct result of facility electricity production .

Verification: Any CO_2 emissions that are reported to the California Climate Action Registry or pursuant to this condition shall be reported to the CPM as part of the fourth Quarterly Air Quality Reports required by Condition of Certification AQ-SC6.

AQ-SC8 The project owner shall be limited to 23.4 tons of NOx emissions per year from the facility as a whole including both combustion turbine exhaust stacks, the auxiliary boiler exhaust stack, the emergency IC engine and the firewater pump engine exhaust until compliance with Conditions of Certification AQ-6, -7, -8 and –9 has been demonstrated. This emission limit supercedes the emission limits in Conditions of Certification AQ-60, -61, -62 and –63.

Verification: The project owner shall include all operational data necessary to demonstrate compliance with this condition as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6 or the verification of compliance required in Conditions of Certification AQ-6, -7, -8 and -9.

AQ-SC9 The project owner shall comply with all staff (AQ SC) and district (AQ) Conditions of Certification. The CPM, in consultation with the District, may approve any change to a Condition of Certification regarding air quality, as an insignificant change, provided that: (1) the project remains in compliance with all applicable laws, ordinances, regulations, and standards, (2) the requested change clearly will not cause the project to result in a significant environmental impact, (3) no additional mitigation or offsets will be required as a result of the change, (4) no existing daily, quarterly, or annual permit limit will be exceeded as a result of the change, and (5) no increase in any daily, quarterly, or annual permit limit will be necessary as a result of the change.

Verification: The project owner shall notify the CPM in writing of any proposed change to a condition of certification pursuant to this condition and shall provide

the CPM with any additional information the CPM requests to substantiate the basis for approval.

AQ-SC10 All HVAC units installed at the project site shall be equipped with PremAir (or other equivalent manufacturer) catalyst system.

Verification: The project owner shall submit to the CPM for approval and maintain on site for five years a copy of all receipt of sales and proof of professional installation of the PremAir system or equivalent system.

AQ-SC11 All roads and parking areas at the facility shall be paved.

Verification: The project owner shall submit to the CPM no less than one day prior to first fire, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the roads and parking areas and certifies that all roads and parking areas at the facility have been suitably paved.

AQ-SC12 All off road equipment material handling or loading equipment shall utilize electric or propane for drive power.

Verification: Thirty days prior to first fire and annually thereafter, the project owner shall submit to the CPM for approval a complete inventory of all material handling or loading equipment used or stored on site. This list shall indicate the storage location, primary use, manufacturer, size and primary energy source of each piece of equipment.

SPECIFIC FACILITY CONDITIONS

Offsets

AQ-1. If the GE LM-6000 turbines are selected, emission offsets shall be provided for all calendar quarters for NO_x and PM10 in the following amounts, at the offset ratio specified in the PCAPCD Rule 502, New Source Review (8/01). (Offsets are not required for CO, SO_x and VOC emissions under PCAPCD Rules and Regulations.)

GE LM6000 - OFFSETS REQUIRED					
POLLUTANT	QUARTER 1 (lbs/quarter)	QUARTER 2 (lbs/quarter)	QUARTER 3 (lbs/quarter)	QUARTER 4 (lbs/quarter)	Tons/year
NOx	15,546	13,412	17,646	15,572	31.09
PM10	17,523	15,246	18,999	18,788	35.28

Verification: The project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in Condition of Certification AQ-2 have been surrendered as required if the GE LM6000 turbines are selected.

AQ-2. The ERC certificates to be surrendered if the GE LM-6000 turbines are selected shall include the following:

B. NOx	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-23 (2004-03)	5,050	5,050	5,050	5,050	10.1
Calpine Corp.	YSAQMD/ EC-209 (EC-238)	0	6,199	0	3,188	4.69
Calpine Corp.	YSAQMD/ EC-210	0	9,558	0	3,973	6.77
Energy 2001 or SMAQMD Bank		5,300	5,300	5,250	4,150	10.00
VOCS FOR NOX	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-26 (2004-04)	33,512	33,512	33,512	33,512	67.0
C. PM10	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-24 (2004-04)	22,680	0	13,252	21,490	28.71
City of Roseville	PCAPCD/ 2001-22 (2004-02)	2,578	19,820	16,085	15,916	27.20

Verification: The project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in this Condition have been surrendered as required in Conditions of Certification AQ-5,-6,-7,-8 and -9 if the GE LM6000 turbines are selected.

AQ-3. If the Alstom GX100 turbines are selected, emission offsets shall be provided for all calendar quarters for NO_x and PM-10 in the following amounts, at the offset ratio specified in the PCAPCD Rule 502, New Source Review (8/01). (Offsets are not required for CO, SOx and VOC emissions under PCAPCD Rules and Regulations.)

ALSTOM GX100 - OFFSETS REQUIRED					
POLLUTANT	QUARTER 1 (lbs/quarter)	QUARTER 2 (lbs/quarter)	QUARTER 3 (lbs/quarter)	QUARTER 4 (lbs/quarter)	Tons/year
NOx	15,546	13,412	17,646	15,572	31.09
PM10	17,673	15,513	19,168	19,158	35.95

Verification: The project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in Condition of Certification AQ-4 have been surrendered as required if the Alstom GTX100 turbines are selected.

AQ-4. The ERC certificates to be surrendered If the Alstom turbines are selected shall include the following:

D. NO x	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-23 (2004-03)	5,050	5,050	5,050	5,050	10.1
Calpine Corp.	YSAQMD/ EC-209 (EC-238)	0	6,199	0	3,188	4.69
Calpine Corp.	YSAQMD/ EC-210	0	9,558	0	3,973	6.77
Energy 2001 or SMAQMD Bank		5,300	5,300	5,250	4,150	10.00
VOCS FOR NOX	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-26	33,512	33,512	33,512	33,512	67.0
E. PM 10	District/ Certificate	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
City of Roseville	PCAPCD/ 2001-24	2,578	20,167	16,085	15,916	27.37
City of Roseville	PCAPCD/ 2001-22	22,680	-	13,440	22,680	29.40
Enron North America	PCAPCD/ 22001-24 (2004-06)	362	-	420	-	0.39

Verification: The project owner shall submit to the CPM documentation from the PCAPCD showing that all ERCs identified in this Condition have been surrendered as required in Conditions of Certification AQ-5,-6,-7,-8 and -9 if the Alstom GTX100 turbines are selected.

AQ-5. The ERC Certificates PCAPCD 2001-23, YSAQMD EC-209 (EC-238), YSAQMD EC-210, PCAPCD 2001-26, PCAPCD 2001-24 and PCAPCD/ 2001-22 shall be submitted to the PCAPCD with copies submitted to the CPM prior to start of construction. For the purpose of this condition, start of construction shall be defined as the pouring of foundation on site. The project owner shall submit copies of a PCAPCD confirmation that the ERCs identified have been surrendered at the specified time and amounts to the CPM.

Verification: The ERC certificates identified above shall be surrendered to the PCAPCD in the amounts shown in either Condition of Certification AQ-2 or –4 based on the turbine selection at least 30 days prior to the commencement of construction with copies of the confirmation of surrender being sent to the CPM no later than 30 days following the commencement of construction.

AQ-6. ERCs obtained from reductions at Energy 2001 shall be submitted to the PCAPCD prior to commencing operation of any of the stationary source equipment (gas turbines, boiler, emergency fire pump, or emergency generator). Copies of the ERCs surrendered shall be submitted to the Energy Commission by that date. For the purpose of this condition, commencing operation shall be defined as first fire of any of the stationary source equipment listed herein. The project owner shall submit copies of a PCAPCD confirmation that the ERCs identified have been surrendered at the specified time and amounts to the CPM.

Verification: ERCs obtained from the Energy 2001 shall be surrendered to the PCAPCD at least 30 days prior to the commencement of operation with copies of the confirmation of surrender being sent to the CPM no later than 30 days following the commencement of operation.

AQ-7. The NOx ERCs listed in the Energy 2001 row may alternatively be obtained in part at or in whole from the Sacramento Air Quality Management District (SMAQMD) Bank at an offset ratio of 2.1 to 1. The offset ratio of 1.3 to 1 shall apply to Energy 2001 offsets. An offset ratio of 2.1 to 1 shall apply to SMAQMD Bank offsets. The combined quantity shall be sufficient to offset the following NOx emissions:

NOx	Quarter 1 (lbs)	Quarter 2 (lbs)	Quarter 3 (lbs)	Quarter 4 (lbs)	Annual (Tons)
	4,077	4,077	4,038	3,192	7.69

Compliance to be determined by the following :

(NOx ERCs Energy 2001 /1.3) + (NOx ERCs SMAQMD Bank /2.1) = Quarterly requirement.

Verification: The project owner shall notify the CPM and PCAPCD in writing in coincidence with the submittal of the necessary application to the SMAQMD for NOx ERCs from the SMAQMD Bank. The notification shall include at a minimum the application submitted to the SMAQMD and the formula herein completed for each quarter and annual total.

AQ-8. ERCs obtained from the SMAQMD Bank shall be submitted to the PCAPCD prior to commencing operation of any of the stationary source equipment (gas turbines, boiler, emergency fire pump, or emergency generator). Copies of the ERCs surrendered shall be submitted to the Energy Commission by that date. For the purpose of this condition, commencing operation shall be defined as first fire of any of the stationary source equipment listed herein. The project owner shall submit copies of a PCAPCD confirmation that the ERCs identified have been surrendered at the specified time and amounts to the CPM.

Verification: ERCs obtained from the SMAQMD Bank shall be surrendered to the PCAPCD at least 30 days prior to the commencement of operation with copies of the confirmation of surrender being sent to the CPM no later than 30 days following the commencement of operation.

AQ-9. Prior to the use of ERCs from the SMAQMD Bank, project owner shall appear before the PCAPCD District Board and gain approval of the transfer of ERCs per Health and Safety Code, Section 40709.6, Offset by reduction to stationary source located in another District.

Verification: The project owner shall notify the CPM at least 30 days prior to the intended PCAPCD Board appearance.

AQ-10. The gas turbines and auxiliary boiler shall be fired exclusively on pipeline grade natural gas.

Verification: The project owner shall submit to the CPM a written statement from a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or personally inspected the identified equipment and verifies that said equipment is plumbed exclusively for natural gas combustion.

AQ-11 The project owner shall maintain an Operating Compliance Plan for the new CTG/HRSG which will assure that the air pollution control equipment will be properly maintained and that necessary operational procedures are in place to continuously achieve compliance with this permit. The Operating Compliance Plan shall include a description of the process monitoring program and devices to be provided.

The plan shall specify the frequency of surveillance checks that will be made of process monitoring devices and indicators to determine continued operation within permit limits. A record or log of individual surveillance checks shall be kept to document performance of the surveillance.

a. The plan shall include the frequency and methods of calibrating the process monitoring devices.

b. The plan shall specify for each emission control device:

   i. Operation and maintenance procedures that will demonstrate continuous operation of the emission control device during emission-producing operations; and
   ii. Records that must be kept to document the performance of required periodic maintenance procedures.

c. The plan shall identify what records will be kept to comply with air pollution control requirements and regulations and the specific format of the records. These records shall include at least the Recordkeeping information required by this permit. The information must include emission monitoring evaluations, calibration checks and adjustments, and maintenance performed on such monitoring systems.

d. The plan shall be submitted to the PCAPCD and the CPM 30 days prior to startup of the gas turbines and boiler. The plan must be implemented upon approval by the Air Pollution Control Officer.

e. The plan shall be resubmitted to the PCAPCD for approval upon any changes to compliance procedures described in the plan, or upon the request of the Air Pollution Control Officer.

Verification: The project owner shall submit the Operating Compliance Plan to the PCAPCD and the CPM 30 days prior to startup of the gas turbines and boiler for PCAPCD approval. The project owner shall resubmit the Operating Compliance Plan to the PCAPCD and the CPM for PCAPCD approval upon any changes to compliance procedures described in the plan, or upon the request of the Air Pollution Control Officer.

AQ-12 Continuous Emission Monitoring System Remote Polling:

a. The project owner shall install and maintain equipment, facilities, software and systems at the facility and at the PCAPCD office that will allow the PCAPCD to poll or receive electronic data from the CEMS. The project owner shall make CEMS data available for automatic polling of the daily records. The project owner shall make hourly records available for manual polling within no more than a one hour delay. The basic elements of this equipment include a telephone line, modem and datalogger. Alternatively, an internet based system may be used. The costs of installing and operating this equipment, excluding PCAPCD costs, shall be borne by the REP.

b. Upon notice by the PCAPCD that the facility's polling system is not operating, the REP shall provide the data by a PCAPCD-approved alternative format and method for up to a maximum of 30 days.

c. The polling data is not a substitute for other required recordkeeping or reporting. (Rule 404 § C; Rule 501 § 304.2.c; HSC 42706)

Verification: The project owner shall submit to the CPM a written statement from a California registered Professional Engineer stating that said engineer has reviewed the as-build-designs or inspected the equipment identified and certifies its proper operation with the PCAPCD requirement and specifications no more than 180 days following the cessation of the commissioning period.

SPECIFIC FACILITY CONDITIONS

Operating Limitations

AQ-13 The hours of operation of each of the gas turbines shall not exceed the following:

Power Plant Gas Turbine Operating Schedule					
	1st	**2nd**	**3rd**	**4th**	**Annual**
Total operating hours	2,096	1,864	2,132	2,145	8,237

Verification: The project owner shall include all operational data identified in this condition as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6.

AQ-14 The project owner shall submit design details for the selective catalytic reduction, oxidation catalyst, and continuous emission monitor system to the PCAPCD and the CPM prior to commencement of construction of these components.

Verification: The project owner shall submit the designs identified in this condition to the PCAPCD and the CPM at least 30 days prior to commencement of construction of the identified components.

AQ-15 The project owner shall install a selective catalytic reduction (SCR) system and an oxidation catalyst on the gas turbine. The SCR and oxidation catalyst equipment shall be operated whenever the gas turbine is operated.

Verification: The project owner shall submit to the CPM a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that it is operational and air tight. The project owner shall include the operational status of the SCR and oxidation catalyst during all hours of operation as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6.

AQ-16 The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators.

Verification: The project owner shall submit to the CPM no less than one day prior to commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the gas turbine engine and generator lube oil vents are equipped with mist eliminators.

AQ-17 The gas turbines and auxiliary boiler shall be equipped with continuously recording, nonresettable fuel gas flowmeters on each unit.

Verification: The project owner shall submit to the CPM no less than one day prior to commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the gas turbines and auxiliary boiler are equipped with continuously recording, nonresettable fuel gas flowmeters on each unit.

AQ-18 Each gas turbine exhaust shall be equipped with continuously recording emissions monitor for NOx, CO, and O_2 dedicated to this unit. Continuous emission monitor shall meet the requirements of 40 CFR parts 60 and 75, and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. The system shall be installed and operational prior to initial startup of the turbines.

Verification: The project owner shall submit to the CPM no less than one day prior to commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that each gas turbine exhaust is equipped with an operational CEMS meeting the specifications in this condition.

AQ-19 The gas turbine exhaust stacks and boiler exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. Access ladders and/or stairs and platforms shall allow easy access to the sampling ports.

Verification: The project owner shall submit to the CPM no less than one day prior to commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that each gas turbine exhaust is air tight and equipped with sampling ports that are easy to access as required by this condition.

AQ-20 The gas turbine engine shall be fired exclusively on pipeline quality natural gas with a sulfur content no greater than 0.50 grains of sulfur compounds per 100 dry scf of natural gas.

Verification: The project owner shall submit to the CPM the most recent fuel testing analysis performed as part of the Quarterly Air Quality Report required in Conditions of Certification AQ-SC6.

AQ-21 Startup is defined as the period beginning with turbine light-off (firing) until the unit meets the lb/hr and ppmv emission limits in Conditions of Certification AQ-52, -54 and -55. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Startup and shutdown durations shall not exceed 3.0 hours and one hour, respectively, per occurrence.

Verification: The project owner shall identify and submit to the CPM as part of the Quarterly Air Quality Report all startups and shutdowns for all units including the maximum hourly emission rate, total emissions and duration.

AQ-22 NOx, excluding the thermal stabilization period (i.e. startup period which is not to exceed three hours), shall not exceed the following levels under load conditions:

9 x EFF/25 ppm, @ 15% O2, averaged over 15 minutes:

Where: EFF(efficiency) is the higher of the following:

$$EFF_1 = \frac{3412 \times 100\%}{AHR}$$

AHR = Actual Heat Rate at HHV of Fuel (BTU/KW-HR)]

or

$$EFF_2 = \frac{MRE \times LHV}{HHV}$$

MRE = Manufacturer's Rated Efficiency with Air Pollution Equipment at LHV.], which is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution equipment after correction from LHV to HHV of the fuel at peak load for that facility.

Verification: The project owner shall maintain the NOx emission records required by this condition on site and shall make these records available for inspection upon request of the PCAPCD or CPM.

SPECIFIC FACILITY CONDITIONS

Commissioning

AQ-23 The commissioning period commences when all mechanical and electrical systems are installed and individual startup has been completed, or when a gas turbine is first fired, whichever comes first. The period ends when the plant has completed performance testing and is available for commercial operation.

Verification: The project owner shall submit for approval to the CPM, a general plan to begin, implement and complete all commissioning activities no less than 30 days prior to the expected date of the commencement of commissioning. This general plan shall include dates for implementing and completing all major milestones of commissioning. The project owner shall notify the CPM in writing of the completion of each milestone of this general plan, within five business days of the date of completion of each milestone.

AQ-24 The gas turbines shall be tuned to minimize the air emissions. At the earliest feasible time, in accordance with the recommendations of the equipment manufacturer and construction contractor, the air pollution control equipment shall be installed, adjusted and operated to minimize emissions from the combustion turbines.

Verification: The general plan required in the verification of Condition of Certification AQ-26 shall specifically include, but is not limited to, dates regarding turbine tuning and the installation, adjustment and operation of the air pollution control equipment.

AQ-25 The total number of firing hours of each gas turbine without abatement shall not exceed 160 hours during the commissioning period. Such operation shall only be limited to such activities that can only be properly executed without the air pollution control equipment.

Verification: The general plan required in the verification of Condition of Certification AQ-26 shall specifically include, but is not limited to, the total estimated hours of operation under all operational conditions. In reporting the completion of each milestone, the project owner shall include the actual number of hours of operation in total and for that milestone.

AQ-26 During the commissioning operations, CO emissions shall not exceed 829 pounds per hour for any one-hour block average. Compliance to be determined by CEMS measurements. (This condition was established to prevent impacts from exceeding 500 ug/m3 over an eight-hour average).

Verification: The general plan required in the verification of Condition of Certification AQ-23 shall specifically include, but is not limited to, an estimate of expected hourly fuel use and CO emissions in all fuel burning equipment. In reporting the completion of each milestone, the project owner shall include the actual hourly fuel use of all fuel burning equipment and the actual CO emission recorded by the CEMS or, if the CO CEMS is uncertified at the time, a CO emission estimate via a CPM approved fuel based CO emission factor.

AQ-27 The total mass emissions of each regulated pollutant that are emitted during the period shall not exceed the quarterly emission limits specified in these conditions.

Verification: The general plan required in the verification of Condition of Certification AQ-23 shall specifically include, but is not limited to, an estimate of

expected fuel use and emissions in all fuel burning equipment. In reporting the completion of each milestone, the project owner shall include the actual fuel use by quarter of all fuel burning equipment and the actual emissions, by quarter, of NOx, SOx, CO, VOC and PM10 as recorded by the CEMS if available or via a CPM approved fuel based emission factor.

SPECIFIC FACILITY CONDITIONS

Reporting and Record Keeping

AQ-28 The project owner shall submit a CEMS QA/QC plan to the PCAPCD and the CPM for approval. Approval should also be required for any future changes to the plan.

Verification: The project owner shall submit the initial CEMS QA/QC plan to the PCAPCD and the CPM for approval at least 30 days prior to the installation of the CEMS.

AQ-29 The project owner shall submit to the PCAPCD and CPM, prior to issuance of a Permit to Operate, information correlating the control system operating parameters to the associated NOx, CO, PM10, VOC and SOx emissions. This information may be used by the PCAPCD Air Pollution Control Officer or CPM to determine compliance when there is no continuous emission monitoring system available or when the continuous emission monitoring system is not operating properly.

Verification: The project owner shall submit to the APCO and CPM information correlating the control system operating parameters to the associated emissions no less than 10 days prior to the termination of the commissioning period.

AQ-30 Provide source test information annually regarding the exhaust gas NOx concentration at ISO conditions corrected to 15 percent oxygen on a dry basis, and the demonstrated percent efficiency (EFF) of the turbine unit.

Verification: The project owner shall submit to the CPM source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the results of the source test no less than 60 days following the actual source test date.

AQ-31 Maintain a gas turbine operating log that includes, on a daily basis, the actual Pacific Standard Time start-up and stop time, total hours of operation, type and quantity of fuel used (liquid/gas). This information shall be available for inspection at any time from the date of entry.

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon request from the PCAPCD or CPM.

AQ-32 The project owner shall maintain hourly records of NOx and CO emission concentrations (ppmv @ 15percent 0_2), and hourly, daily, and quarterly

records of NOx and CO emissions. Ongoing compliance with the CO emission limits during normal operation shall be deemed compliance with the VOC emission limits during normal operation.

Verification: The project owner shall submit to the CPM all concentration, hourly, daily and quarter NOx and CO emissions as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6.

AQ-33 The project owner shall maintain records of SOx lb/hr, lb/day, and lb/quarter emissions. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations.

Verification: The project owner shall submit to the CPM all hourly, daily and quarterly SOx emissions as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6.

AQ-34 The project owner shall maintain the following records: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, maintenance of any continuous emission monitor; emission measurements, total daily and rolling twelve month average hours of operation, hourly quantity of fuel used, and gross three hour average operating load.

Verification: The project owner shall submit to the CPM all data identified in this condition as part of the Quarterly Air Quality Report required by Condition of Certification AQ-SC6.

AQ-35 All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for PCAPCD inspection upon request. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P. paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the PCAPCD, the ARB, and the EPA.

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon reasonable notice from the PCAPCD or CPM.

AQ-36 The project owner shall notify the PCAPCD of any breakdown condition as soon as reasonably possible, but no later than two PCAPCD business hours after its detection.

Verification: The project owner shall include the identification of all breakdowns, PCAPCD notification, resulting excess emission (if any) and corrective actions taken (if any) as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-37 Any violation of any emission standard listed in this permit which is indicated by the CEMS shall be reported to the PCAPCD no later than 96 hours after such occurrence per California Health and Safety Code 42706.

Verification: The project owner shall include all violations of emission standards and corresponding PCAPCD notifications in the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-38 The PCAPCD shall be notified in writing within seven calendar days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations.

Verification: The project owner shall include the identification of all breakdowns, PCAPCD notification, resulting excess emission (if any) and corrective actions taken (if any) as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-39 Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The PCAPCD shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the PCAPCD.

Verification: The project owner shall submit to the CPM all CEMS audits, relative accuracy tests and related transmittal memos (to the PCAPCD) within 60 days following the date of audit or test performance.

AQ-40 The project owner shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F.

Verification: The project owner shall include all CEMS quality assurance test failures that required corrective action as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-41 The project owner shall submit a written report to the APCO and the CPM for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred.

Verification: The project owner shall include the excess emission report as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-42 The project owner shall provide the PCAPCD and CPM with a written emission statement showing actual emissions of volatile organic compounds and oxides of nitrogen. Pursuant to PCAPCD Rule 503 the project owner shall submit this emission statement on a form or in a format specified by the Air Pollution Control Officer. The statement shall contain the following information:

a. Information contained in the California Air Resources Board's Emission Inventory Turn Around Document as described in Instructions for the Emission Data System Review and Update Report;

b. Actual emissions of volatile organic compounds and oxides of nitrogen, in tons per year, for the calendar year prior to the preparation of the emission statement;

c. Information regarding seasonal or diurnal peaks in the emission of affected pollutants; and

d. Certification by a responsible official of the project owner that the information contained in the emission statement is accurate to the best knowledge of the individual certifying the emission statement.

Verification: The project owner shall submit to the CPM the emission statement described herein prior to the beginning of March each year.

SPECIFIC FACILITY CONDITIONS

Performance Testing

AQ-43 Compliance with the short term emission limits (Ib/hr and ppmv @ 15percent O2) shall be demonstrated by a performance test conducted within 60 days of reaching maximum production and not later than 180 days from initial startup of each gas turbine engine.

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

AQ-44 A performance test shall be conducted annually for each combustion turbine/heat recovery steam generator unit each calendar year.

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

AQ-45 Compliance with the cold start NOx, and CO mass emission limits shall be demonstrated for each of the gas turbines by performance testing after initial operation and at least every seven years thereafter by an ARB certified independent test firm.

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing. The initial performance test shall be completed no later than 180 days after initial operation.

AQ-46 The following test methods shall be used: PM10:EPA method 201 and 201A in conjunction with ARB method 5, NOx: EPA Method 20, CO: EPA method 10, 02: EPA Method 3A, VOC: EPA method 18, and fuel gas sulfur content: ASTM D3246. Alternative test methods as approved by the PCAPCD and CPM may also be used to address the source testing requirements of this permit.

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

SPECIFIC FACILITY CONDITIONS

Emission Limitations

AQ-47 No emissions are permitted, from any source, which are a nuisance per PCAPCD Rule 205, Nuisance. (Rule 205)

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite nuisance complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-48 Stack emission opacity as dark or darker than Ringelmann No. 1 (20 percent opacity) for period(s) aggregating more than three (3) minutes in any one hour is prohibited and is in violation of PCAPCD Rule 202, Visible Emissions. (Rule 202)

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite opacity complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-49 Particulate matter emissions shall not to exceed 0.1 grains per cubic foot of gas calculated at 12 percent CO at standard conditions. (Rule 210)

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

AQ-50 Sulfur compound emissions calculated as SO_2 shall not exceed 0.2 percent by volume. (Rule 210).

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

AQ-51 The ammonia slip shall not exceed 10 ppmv @ 15 percent O_2 averaged over 1 hour. The SCR catalyst shall be replaced, repaired or otherwise reconditioned within 12 months of the ammonia slip reaching 5 ppm @ 15 percent O_2 averaged over 24 hours. The SCR ammonia injection grid replacement, repair or reconditioning scheduled event may be canceled if the project owner can demonstrate to the CPM that, subsequent to the initial exceedance, the ammonia slip consistently remains below 5 ppm @ 15 percent O_2 averaged over 24 hours and that the initial exceedance does not accurately indicate expected future operating conditions.

Compliance with ammonia slip limits shall be demonstrated by using the following calculation procedure:

ammonia slip ppmv @ 15% O_2 = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d,

where

a = ammonia injection rate(lb/hr)/17(lb/lb. mol),

b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol),

c = change in measured NOx concentration ppmv at 15% O_2 across catalyst, and

d = correction factor.

The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip.

Verification: The project owner shall include ammonia slip concentrations averaged on an hourly and 24-hour basis calculated via the protocol provided as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6. The project owner shall notify the CPM within 10 days of an exceedance of the 5-ppm ammonia slip limit herein. The project owner shall notify the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair, or reconditioning event. If the project owner finds that the exceedance of the 5-ppm ammonia slip limit does not accurately reflect expected future operation as provided_for in this condition, the project owner shall submit all relevant information to the CPM no less than 30 days prior to the scheduled date of the SCR catalyst replacement, repair or reconditioning event in order to cancel the event.

AQ-52 The emissions from the gas turbine after air pollution controls shall not exceed the following:

Gas Turbine PPMV Limitations Excluding Startup and Shutdown		
NO_X	CO	VOC
2.0 ppmvd @ 15% O_2, 1-hour average	4 ppmvd @ 15% O_2, 3-hour average	2 ppmv @ 15% O_2, 1-hour average

Verification: The project owner shall submit to the PCAPCD and CPM a performance test protocol for approval 30 days prior to the planned source test date. The project owner shall submit all performance test results no less than 60 days following the actual date of performance testing.

AQ-53 The 2.0 ppmvd NOx emission limit is averaged over one hour at 15 percent oxygen, dry basis. The limit shall not apply to the first six (6) one-hour average NOx emissions above 2.0 ppmvd, dry basis at 15 percent O_2, in any calendar quarter period for each combustion gas turbine provided that it meets all of the following requirements:

A. This equipment operates under any one of the qualified conditions described below:

1. Rapid combustion turbine load changes due to the following conditions:

   i. Load changes initiated by the California ISO or a successor entity when the plant is operating under Automatic Generation Control; or
   ii. Activation of a plant automatic safety or equipment protection system which rapidly decreases turbine load

2. The first two one-hour reporting periods following the initiation/shutdown of a fogging system injection pump

3. The first two one-hour reporting periods following the initiation/shutdown of combustion turbine steam injection

4. The first two one-hour reporting periods following the initiation of HRSG duct burners

5. Events as the result of technological limitation identified by the operator and approved in writing by the PCAPCD.

B. The 1-hour average NOx emissions above 2.0 ppmv, dry basis at 15 percent O_2, did not occur as a result of operator neglect, improper operation or maintenance, or qualified breakdown under Rule 404, Upset Conditions, Breakdown or Scheduled Maintenance. Notification to the PCAPCD is required within two hours of a qualified event.

C. The qualified operating conditions described in (A) above are recorded in the plant's operating log within 24 hours of the event, and in the CEMS by 5 p.m. the next business day following the qualified operating condition. The notations in the log and CEMS must describe the date and time of entry into the log/CEMS and the plant operating conditions responsible for NOx emissions exceeding the 2.0 ppmv one-hour average limit. In addition, these excursions must be identified in the CEMS quarterly reports.

D. The one-hour average NOx concentration for periods that result from a qualified operating condition does not exceed 25 ppmv, dry basis at 15 percent O_2.

E. All NOx emissions during these events shall be included in all calculations of hourly, daily, and annual mass emission rates as required by this permit.

Verification: Within 5 working days of the occurrence, the project owner shall submit an Initial Excursion Report to the CPM that includes, but is not limited to: the date, time, duration, cause of the occurrence, the emissions (in total mass and hourly concentration normalized to 15 percent O_2) as a result of the occurrence and the evidence required in element (B) above. The project owner may delay the submittal of copies of the pertinent sections of the CEMS and log book records showing the excursion for no more than 21 working days following the occurrence. The project owner shall include a summary of all excursions as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-54 If the GE LM6000 turbines are selected for the project, emission rates from each gas turbine and heat recovery steam generator exhaust during startup and shutdown shall not exceed the following:

GE LM6000 Combustion Turbine Emission Limitations during Startup and Shutdown		
Pollutant	Maximum Pounds Per Hour (worst-case turbine)	Pounds per Startup or Shutdown (both turbines combined)
NOx	19.3	49.7
CO	14.3	42.2

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-55 If the Alstom GX100 turbines are selected for the project, emission rates from each gas turbine and heat recovery steam generator exhaust during startup and shutdown shall not exceed the following:

Alstom GX100 Combustion Turbine Emission Limitations during Startup and Shutdown		
Pollutant	Maximum Pounds Per Hour (worst-case turbine)	Pounds per Startup or Shutdown (both turbines combined)
NOx	37.1	122.8
CO	89.5	204.8

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-56 If the GE LM6000 turbines are selected for the project, emission rates from each gas turbine and heat recovery steam generator exhaust, except during startup and/or shutdown or excursions, shall not exceed the following:

GE LM6000 - COMBUSTION TURBINE EMISSION LIMITATIONS PER TURBINE EXCLUDING STARTUP AND SHUTDOWN	
POLLUTANT	POUNDS/HOUR
Carbon Monoxide (CO)	6.1 (three-hour rolling average)
Nitrogen Oxides (NOx)	5.0 (one-hour average)
PM10	4.6
Sulfur Oxides (SOx)	1.0
Volatile Organic Compounds VOCs)	1.7

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-57 If the Alstom GX100 turbines are selected for the project, emission rates from each gas turbine and heat recovery steam generator exhaust, except during startup and/or shutdown, or excursions shall not exceed the following:

Alstom GTX100 - COMBUSTION TURBINE EMISSION LIMITATIONS PER TURBINE EXCLUDING STARTUP AND SHUTDOWN	
POLLUTANT	POUNDS/HOUR
Carbon Monoxide (CO)	6.2 (three-hour rolling average)
Nitrogen Oxides (NOx)	5.1 (one-hour average)
PM10	4.7
Sulfur Oxides (SOx)	1.0
Volatile Organic Compounds (VOCs)	1.8

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-58 If the GE LM6000 turbines are selected for the project, the daily emissions shall not exceed the following rates:

GE LM6000 - DAILY EMISSION LIMITS					
POLLUTANT	Two GE Turbines	Auxiliary Boiler	Cooling Tower	Diesel Emergency Generator	Diesel Fire Pump
NOx	268.7	16.8	--	4.31	1.72
CO	300.8	52.8	--	0.84	0.09
VOC	83.6	7.2	--	0.16	0.05
PM10	221.6	14.4	16.3	0.14	0.03
SO_2	46.0	1.92	--	0.10	0.19

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-59 If the Alstom GX100 turbines are selected for the project, the daily emissions shall not exceed the following rates:

Alstom GX100 - FACILITY DAILY EMISSION LIMITS					
POLLUTANT	Two Alstom Turbines	Auxiliary Boiler	Cooling Tower	Diesel Emergency Generator	Diesel Fire Pump
NOx	406.0	16.8	--	4.31	1.72
CO	629.5	52.8	--	0.84	0.09
VOC	223.1	7.2	--	0.16	0.05
PM10	226.8	14.4	16.3	0.14	0.03
SO_2	47.1	1.92	--	0.10	0.19

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-60 If the Alstom GTX100 turbine are selected, the quarterly emissions shall not exceed the levels shown below:

Alstom GTX100 Gas Turbines					
Pollutant	Quarter 1 (lbs/quarter) Two turbines	Quarter 2 (lbs/quarter) Two Turbines	Quarter 3 (lbs/quarter) Two turbines	Quarter 4 (lbs/quarter) Two Turbines	Tons/ Year Two Turbines
NOx	15,399	12,965	17,496	15,422	30.64
CO	26,787	32,590	28,175	29,862	58.71
VOCs	5,791	7,306	6,630	6,848	13.29
PM0	16,300	13,692	17,789	17,569	32.67
SOx	3,385	2,843	3,694	3,648	6.78

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-61 If the GE LM6000 turbines are selected are selected, the quarterly emissions shall not exceed the levels shown below:

GE LM6000 Gas Turbines					
Pollutant	Quarter 1 (lbs/quarter) Two Turbines	Quarter 2 (lbs/quarter) Two Turbines	Quarter 3 (lbs/quarter) Two Turbines	Quarter 4 (lbs/quarter) Two Turbines	Tons/year Two Turbines
NOx	15,399	12,965	17,496	15,422	30.64
CO	21,291	18,454	23,160	22,982	42.94
VOCs	6,006	5,038	6,555	6,473	12.04
PM10	15,968	13,425	17,410	17,199	32.00
SOx	3,316	2,788	3,615	3,571	6.65

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-62 If the GE LM6000 turbines are selected for the project, the total facility emissions shall not exceed the following quarterly emission rates:

GE LM6000 - FACILITY QUARTERLY EMISSION LIMITS					
POLLUTANT	QUARTER 1 (lbs)	QUARTER 2 (lbs)	QUARTER 3 (lbs)	QUARTER 4 (lbs)	Tons/year
NO_x	15,546	13,412	17,646	15,572	31.09
CO	21,625	19,737	23,500	23,322	44.09
VOC	6,046	5,188	6,596	6,514	12.17
PM10	17,523	15,246	18,999	18,788	35.28
SO_2	3,331	2,838	3,630	3,587	6.69

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-63 If the Alstom GX100 turbines are selected for the project, the total facility emissions shall not exceed the following quarterly emission rates:

ALSTOM GX100 - FACILITY QUARTERLY EMISSION LIMITS					
POLLUTANT	QUARTER 1 (lbs)	QUARTER 2 (lbs)	QUARTER 3 (lbs)	QUARTER 4 (lbs)	Tons/year
NOx	15,546	13,412	17,646	15,572	31.09
CO	27,121	33,872	28,515	30,202	59.86
VOC	5,832	7,455	6,672	6,890	13.42
PM10	17,854	15,513	19,378	19,158	35.95
SO_2	3,400	2,893	3,709	3,663	6.83

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-6440 CFR 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

The gas turbines are required to meet the notification, recordkeeping and performance test requirements of this regulation. The project owner must submit a written quarterly excess emission report to the Administrator. A performance test is required within 60 days of achieving maximum production or no later than 180 days of initial startup.

Verification: The project owner shall include the identification of all excess emissions, PCAPCD notification and corrective actions taken (if any) as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

COOLING TOWERS

Operating Limitations

AQ-65 Project owner shall submit drift eliminator design details for the cooling tower prior to commencement of construction.

Verification: The project owner shall submit drift eliminator design details for the cooling tower at least 30 days prior to commencement of construction.

AQ-66 No hexavalent chromium containing compounds shall be added to the cooling tower makeup water.

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon request from the PCAPCD or CPM.

AQ-67 Cooling tower drift eliminator drift rate shall not exceed 0.0005% of the circulating water flow.

Verification: See the verification of Condition of Certification AQ-65. Project owner shall submit drift eliminator design details for the cooling tower prior to commencement of construction

Performance Testing

AQ-68 A water sample analysis of cooling tower water shall be performed within 180 days of initial operation and annually thereafter.

Verification: The project owner shall submit to the CPM and the PCAPCD the initial and annual cooling tower water sample analysis for approval no later than 60 days following the date of test performance.

Emission Limitations

AQ-69 No emissions are permitted, from any source, which are a nuisance per PCAPCD Rule 205, Nuisance. (Rule 205)

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite nuisance complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-70 PM10 emission rate from the cooling tower shall not exceed the following limits:

COOLING TOWER EMISSION LIMITATIONS					
Pollutant	**POUNDS PER DAY**	**QUARTER 1** (Pounds/quarter)	**QUARTER 2** (Pounds/quarter)	**QUARTER 3** (Pounds/quarter)	**QUARTER 4** (Pounds/quarter)
PM10	16.3	1,471	1,487	1,504	1,504

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-71 Compliance with the cooling tower PM10 emission limit shall demonstrated as follows: PM10 = cooling water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate.

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emission limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AUXILIARY BOILER

Operating Limitations

AQ-72 An ultra low NOx burner and flue gas recirculation system shall be installed and operated on the auxiliary boiler.

Verification: The project owner shall submit to the CPM no less than one day prior to the cessation of commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the auxiliary boiler has an operational ultra low NOx burner and flue gas recirculation system.

AQ-73 A non-resetable fuel meter shall be installed on the gas line serving the boiler.

Verification: The project owner shall submit to the CPM no less than one day prior to the cessation of commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the auxiliary boiler has an operational non-resettable fuel meter.

AQ-74 The hours of operation of the auxiliary boiler shall not exceed the following:

Boiler Hours of Operation				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Boiler Hours of Operation	140	568	143	143

Verification: The project owner shall include all necessary operational data to demonstrate compliance with the limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-75 Compliance with the boiler pounds per hour and ppmv emission limits shall be demonstrated by an initial performance test conducted within 60 days of reaching maximum production and not later than 180 days from initial startup.

Verification: The project owner shall submit to the CPM, performance testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the performance test results, no less than 60 days following the actual performance test date.

AQ-76 The initial performance test of the boiler shall be conducted for NOx, VOC, SOx, PM10, CO, CO_2, and O_2.

Verification: The project owner shall submit to the CPM, performance testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the performance test results, no less than 60 days following the actual performance test date.

AQ-77 Performance tests shall be conducted on the boiler every other calendar year after the initial testing. These tests shall include NOx, CO, CO_2, and O_2.

Verification: The project owner shall submit to the CPM, performance testing protocols 30 days prior to the planned test date. The project owner shall submit to the CPM the performance test results, no less than 60 days following the actual performance test date.

AQ-78 All boiler source tests shall be made in the as-found operating condition, except that source tests shall include at least one test conducted at the maximum feasible firing rate allowed by the PCAPCD permit. No source test shall be conducted within two hours after a continuous period in which fuel flow to the unit is zero, or shut off, for thirty minutes or longer.

Verification: The project owner shall submit to the CPM, source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the source test results, no less than 60 days following the actual source test date.

AQ-79 At least thirty (30) days prior to the compliance source tests, a written test plan detailing the test methods and procedures to be used shall be submitted for approval by the Air Pollution Control Officer and CPM. The plan shall cite the test methods to be used for the determination of compliance with the emission limitations of this rule.

Verification: The project owner shall submit to the CPM, source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the source test results, no less than 60 days following the actual source test date.

AQ-80 A report of the compliance test shall be submitted to the PCAPCD and CPM following completion of the source test.

Verification: The project owner shall submit to the CPM, source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the source test results, no less than 60 days following the actual source test date.

Emission Limitations

AQ-81 The NOx emissions from the boiler shall not exceed 9.0 ppmv @ 3 percent O_2 on a 3 hour average.

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emissions limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-82 The CO emissions from the boiler shall not exceed 50 ppmv @ 3 percent O_2 on a 3 hour average.

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emissions limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-83 The boiler emissions shall not exceed any of the following:

BOILER EMISSION LIMITATIONS					
Pollutant	**POUNDS Per Hour**	**QUARTER 1** (Pounds/quarter)	**QUARTER 2** (Pounds/quarter)	**QUARTER 3** (Pounds/quarter)	**QUARTER 4** (Pounds/quarter)
NO_x	0.7	92	372	94	94
CO	2.2	311	1,259	317	317
VOC	0.3	36	144	36	36
PM10	0.6	82	332	84	84
SO_2	0.08	11	46	12	12

Verification: The project owner shall include all necessary emissions data to demonstrate compliance with the emissions limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

DIESEL POWERED IC ENGINES POWERING FIREWATER PUMP

Operating Limitations

AQ-84 Project owner shall submit internal combustion engine (firewater pump) design details to the PCAPCD prior to commencement of construction.

Verification: The project owner shall submit to the CPM and PCAPCD for approval IC engine (firewater pump) design details to the PCAPCD at least 30 days prior to commencement of construction.

AQ-85 A non-resettable hour meter shall be installed on each engine/generator set (firewater pump) to record the hours of operation.

Verification: The project owner shall submit to the CPM no less than one day prior to the cessation of commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the engine/generator set (firewater pump) is equipped with a non-resettable hour meter.

AQ-86 Operation for maintenance and testing of the emergency diesel engine and generator shall be limited to 50 hours per year.

Verification: The project owner shall include all necessary operational data to demonstrate compliance with the limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-87 Operation for other than maintenance and testing purposes shall be limited to involuntary interruptions of electrical power. Operation shall not exceed 24 hours without prior authorization by the Air Pollution Control Officer.

Verification: The project owner shall include all necessary operational data to demonstrate compliance with the limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-88 The sulfur content of the diesel fuel used shall not exceed15 ppm by weight.

Verification: The project owner shall include a summary of diesel fuel purchase records showing amounts delivered, date delivered and fuel type with the Quarterly Air Quality Report as required in Condition of Certification AQ-SC6.

Reporting and Recordkeeping

AQ-89 Records of operation and maintenance shall be kept by the Owner or Operator for a period of five years and shall be made available to the PCAPCD upon request. Information required for reporting to the PCAPCD includes, but is not limited to:

A. The hours of operation the engine was run for maintenance and testing;

B. The hours of operation the engine was run during interruption of electrical power; and

C. Records of the sulfur content of the diesel fuel used.

Verification: The project owner shall include these records as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

Emission Limitations

AQ-90 No emissions are permitted, from any source, which are a nuisance per PCAPCD Rule 205, Nuisance.

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite nuisance complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-91 Stack emission opacity as dark or darker than Ringelmann No. 1 (20% opacity) for period or periods aggregating more than three (3) minutes in any one hour is prohibited and is in violation of PCAPCD Rule 202, Visible Emissions.

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite opacity complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-92 Particulate matter emissions shall not to exceed 0.1 grains per cubic foot of gas calculated at 12 percent CO_2 at standard conditions.

Verification: The project owner shall submit to the CPM, source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the source test results, no less than 60 days following the actual source test date.

AQ-93 Sulfur compound emissions calculated as SO_2 shall not exceed 0.2 percent by volume.

Verification: The project owner shall demonstrate compliance with this condition via the data reported for Conditions of Certification AQ-84 and -89.

AQ-94 Nitrogen oxide emissions from the fire pump diesel engine shall not exceed 6.9 grams per brake horsepower - hour. This may be demonstrated by manufacturer's emissions data sheet.

Verification: The project owner shall submit to the CPM for approval the manufacturer's emissions data sheet or other compelling evidence demonstrating compliance with this condition.

AQ-95 PM-10 emissions from the fire pump diesel engine shall not exceed 0.4 grams per brake horsepower - hour. This may be demonstrated by manufacturer's emissions data sheet.

Verification: The project owner shall submit to the CPM for approval the manufacturer's emissions data sheet or other compelling evidence demonstrating compliance with this condition.

AQ-96 The fire pump diesel engine shall meet the requirements of the California Air Resources Board Airborne Toxic Control Measure for Stationary Compression Ignition Engines when it becomes effective.

Verification: The project owner shall submit to the CPM for approval a CARB granted certificate or other compelling evidence demonstrating compliance with this condition.

DIESEL IC ENGINE POWERING EMERGENCY GENERATOR

Operating Limitations

AQ-97 Project owner shall submit IC engine design details to the PCAPCD prior to commencement of construction of the IC engine.

Verification: The project owner shall submit to the CPM and PCAPCD for approval IC engine (firewater pump) design details to the PCAPCD at least 30 days prior to commencement of construction.

AQ-98 A non-resettable hour meter shall be installed on each engine/generator set to record the hours of operation.

Verification: The project owner shall submit to the CPM no less than one day prior to commissioning, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the engine/generator is equipped with a non-resettable hour meter.

AQ-99 Operation for maintenance and testing of the emergency diesel engine and generator shall be limited to 50 hours per year.

Verification: The project owner shall include all necessary operational data to demonstrate compliance with the limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-100 Operation for other than maintenance and testing purposes shall be limited to involuntary interruptions of electrical power. Operation shall not exceed 24 hours without prior authorization by the Air Pollution Control Officer.

Verification: The project owner shall include all necessary operational data to demonstrate compliance with the limits provided in this Condition as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-101 The sulfur content of the diesel fuel used shall not exceed 15 ppm by weight.

Verification: The project owner shall include a summary of diesel fuel purchase records showing amounts delivered, date delivered and fuel type with the Quarterly Air Quality Report as required in Condition of Certification AQ-SC6.

Reporting and Recordkeeping

AQ-102 Records of operation and maintenance shall be kept by the Owner or Operator for a period of five years and shall be made available to the PCAPCD upon request. Information required for reporting to the PCAPCD includes, but is not limited to:

A. The hours of operation the engine was run for maintenance and testing.

B. The hours of operation the engine was run during interruption of electrical power.

C. Records of the sulfur content of the diesel fuel used.

Verification: The project owner shall include these records as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

Emission Limitations

AQ-103 No emissions are permitted, from any source, which are a nuisance per PCAPCD Rule 205, Nuisance. (Rule 205)

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite nuisance complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-104 Stack emission opacity as dark or darker than Ringelmann No. 1 (20 percent opacity) for period or periods aggregating more than three (3) minutes in any one hour is prohibited and is in violation of PCAPCD Rule 202, Visible Emissions. (Rule 202)

Verification: The project owner shall report all violations of this condition as noticed by the PCAPCD as well as any offsite opacity complaints as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-105 Particulate matter emissions shall not to exceed 0.1 grains per cubic foot of gas calculated at 12 percent CO_2 at standard conditions. (Rule 210)

Verification: The project owner shall submit to the CPM, source testing protocols 30 days prior to the planned source test date. The project owner shall

submit to the CPM the source test results, no less than 60 days following the actual source test date.

AQ-106 Sulfur compound emissions calculated as SO_2 shall not exceed 0.2 percent by volume. (Rule 210).

Verification: The project owner shall demonstrate compliance with this condition via the data reported for Conditions of Certification AQ-97 and -102.

AQ-107 Nitrogen oxide emissions from the emergency generator diesel engine shall not exceed 6.9 grams per brake horsepower - hour. This may be demonstrated by manufacturer's emissions data sheet.

Verification: The project owner shall submit to the CPM for approval the manufacturer's emissions data sheet or other compelling evidence demonstrating compliance with this condition.

AQ-108 PM10 emissions from the emergency generator diesel engine shall not exceed 0.4 grams per brake horsepower - hour. This may be demonstrated by manufacturer's emissions data sheet.

Verification: The project owner shall submit to the CPM for approval the manufacturer's emissions data sheet or other compelling evidence demonstrating compliance with this condition.

AQ-109 The engine shall meet the requirements of the California Air Resources Board Airborne Toxic Control Measure for Stationary Compression Ignition Engines when it becomes effective.

Verification: The project owner shall submit to the CPM for approval a CARB granted certificate or other compelling evidence demonstrating compliance with this condition.

PORTABLE EQUIPMENT

AQ-110 Portable equipment shall comply with all applicable requirements while operating at the facility, including PCAPCD Permit and Prohibitory Regulations, or be State-registered portable equipment. State-registered portable equipment shall comply with State registration requirements. A copy of the State registration shall be readily available whenever the State-registered portable equipment is at the facility.

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon request from the PCAPCD or CPM.

TITLE V CONDITION

AQ-111 The Owner/Operator shall file a complete application for a Title V permit pursuant to Rule 507, Federal Operating Permit Program by no later than one year after commencing operation.

Verification: No later than one year after the commencement of operation, the project owner shall submit to the CPM, a copy of the EPA Title V application.

PCAPCD GENERAL CONDITIONS

AQ-112 Authorization to construct the equipment listed and as prescribed in the approved plans and specifications is hereby granted, subject to the specified permit conditions. The construction and operation of listed equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted in the conditions. Deviation from the approved plans is not permissible without first securing approval for the changes from the Air Pollution Control Officer (Rule 501) and the CPM through an amendment of the Conditions of Certification.

Verification: The project owner shall maintain a current and accurate record of the Final Determination of Compliance, the Authority to Construct and Permit to Operate as issued by the PCAPCD, as well as the California Energy Commission Decision. At least 60 days prior to the planned deviation from the approved plans, the project owner shall notify the PCAPCD and the CPM in writing of the planned deviation.

AQ-113 Written notification shall be submitted to the PCAPCD and CPM no later than seven days after completion of construction. (Rule 501)

Verification: The project owner shall submit written notification to the PCAPCD and CPM no later than seven days after completion of construction.

AQ-114 This permit shall be maintained on the premises of the subject equipment.(Rule 501)

Verification: The project owner shall maintain a current and accurate record of the Final Determination of Compliance, the Authority to Construct and Permit to Operate as issued by the PCAPCD, as well as the California Energy Commission Decision and shall make those records available upon request.

AQ-115 The authorized PCAPCD or CEC agents shall have the right of entry to any premises on which an air pollution emission source is located for the purpose of inspecting such source, including securing samples of emissions therefrom, or any records required to be maintained therewith by the PCAPCD. (Rule 402)

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon request from the PCAPCD or CPM.

AQ-116 In the event of any violation of the PCAPCD Rules and Regulations, the project owner shall take action to end such violation. (Rule 502)

Verification: The project owner shall report all violations and corrective action taken to the CPM within 30 days of the event.

AQ-117 The project owner shall notify the PCAPCD within two hours of any upset conditions, breakdown or scheduled maintenance which cause emissions in excess of limits established by PCAPCD Rules and Regulations. (Rule 404)

Verification: The project owner shall report all excess emissions as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-118 Any alteration of the subject equipment, including a change in the method of operation, shall be reported to the PCAPCD and CPM. Such alternations may require an Authority to Construct Permit (Rule 501) and an amendment to the Conditions of Certification

Verification: The project owner shall report all equipment alterations to the PCAPCD and CPM 60 days prior to the alteration.

AQ-119 Exceeding any of the limiting condition is prohibited without prior application for, and the subsequent granting of a permit modification pursuant to PCAPCD Rule 501, General Permit Requirements, Section 400.

Verification: The project owner shall submit all proposed permit modifications to the CPM no less than 60 days prior to the expected exceedance. The project owner shall report all exceedances to the CPM as part of the Quarterly Air Quality Report required in Condition of Certification AQ-SC6.

AQ-120 In the event of a change of ownership, an application must be submitted to the PCAPCD. Upon any change in control or ownership of facilities constructed, operated, or modified under authority of this permit, the requirements contained in this Authority to Construct shall be binding on all subsequent owners and operators. (Rule 501)

Verification: The project owner shall submit written notification to the CPM of any change in ownership.

AQ-121 Compliance of the permitted facility is required with the provisions of the "Air Toxics 'Hot Spots' Information and Assessment Act" of 1987 (Health and Safety Code Sections 44300 et seq.).

Verification: The project owner shall make the power plant site and appropriate records available for inspection upon reasonable notice from the PCAPCD or CPM.

AQ-122 Performance Test Requirements: If the PCAPCD or CPM finds that additional performance tests are required to determine compliance with PCAPCD Rules and Regulations and Conditions of this Authority to Construct, reasonable written notice shall be provided to the project owner. The performance tests shall be subject to the following restrictions (Rule 501):

A. Prior to the actual testing, a written test plan shall be submitted to the Air Pollution Control Officer and CPM detailing the sampling methods, analytical methods or detection principles to be used.

The prior written approval of the Air Pollution Control Officer is required for the use of alternate test methods.

B. The PCAPCD may require, upon reasonable written notice, the conduct by the project owner of such emissions testing or analysis as may be deemed necessary by the PCAPCD to demonstrate compliance with PCAPCD Rules and Regulations and the limiting conditions of this permit.

C. Testing shall be conducted in accordance with 40 CFR 60, Appendix A, Methods, or equivalent methods approved by the State of California Air Resources Board (ARB) by reference in Title 17 of the California Administrative Code, or other methods specified by the project owner and approved in writing by the Air Pollution Control Officer. Independent testing contractors and analytical laboratories shall be Air Resources Board certified for the test or analysis conducted. Particulate matter testing, if requested, shall include both filterable and condensed particulate matter (e.g. Method 5 modified to include impinger catch).

D. A report of the testing shall be submitted to the PCAPCD and the CPM after the source test is performed

Verification: The project owner shall submit to the CPM source testing protocols 30 days prior to the planned source test date. The project owner shall submit to the CPM the results of a source test, regardless of those results, no less than 60 days following the actual source test date.

This Page Left Intentionally Blank

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential public health effects from Project emissions of toxic air contaminants. In this analysis, we review the evidence concerning whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[9] The record of evidence was undisputed. (1/25/05 RT 23-24; Ex. 36; Ex. 1, § 8.9; Ex. 47, p. 4.7-1 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants (TACs). These substances are categorized as non-criteria pollutants because there are no ambient air quality standards established to regulate their emissions.[10] (Ex. 47, p. 4.7-1.) In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from TAC emissions.[11] The Air Toxics "Hot Spots" Information and Assessment Act requires power plant facilities to identify and quantify TAC emissions by category and by proximity to sensitive receptors.[12] (Health and Safety Code, § 44320 et seq.) This inventory

[9] This Decision discusses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in **Hazardous Materials Management** and **Worker Safety and Fire Protection**. Electromagnetic fields are discussed in the section on **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are discussed in the **Soil and Water Resources** section. Hazardous and non-hazardous wastes are described in **Waste Management**.

[10] Criteria pollutants are discussed in the **Air Quality** section. The emission control technologies employed by REP to mitigate criteria pollutant emissions are considered effective for controlling non-criteria pollutant emissions from the same source.

[11] The health risk assessment protocol is set forth in the Air Toxics "Hot Spot" Program Risk Assessment Guidelines developed by the California Air Pollution Control Officers Association (CAPCOA) pursuant to the California Air Toxics "Hot Spots" Information and Assessment Act (Health and Safety Code, § 44300 et seq.). (Ex. 1, § 8.9.2.3 et seq. and Appendix 8.1-G.)

[12] Applicant identified the known sensitive receptors within a six-mile radius of the Project site. (Ex. 1, § 8.9.1, Table 8.9-1, Figure 8.9-2, Appendix 8.1-G.)

requirement is administered by the air district where the facility is located, in this case PCAPCD, which requires facilities that exceed specified TAC emission limits to conduct a health risk assessment to determine potential health effects. (*See* Health & Safety Code, § 44360; PCAPCD Regulation 502.)

Typically, the initial health risk analysis is performed at a "screening level," which is designed to conservatively estimate actual health risks. A "hazard index" is used to assess the significance of acute and chronic non-cancer health effects. This involves comparing exposure from Project emissions to "reference exposure levels" (RELs). RELs are based on the most sensitive adverse health effects reported in the medical and toxicological literature, and include specific margins of safety to provide a reasonable degree of protection against hazards that research has not yet identified. A total hazard index of less than 1.0 indicates that cumulative worst-case exposures are below REL threshold levels.[13] (Ex. 47, pp. 4.7-3 and 4.7-4.)

For carcinogenic substances, the health assessment considers the risk of developing cancer using the conservative assumption that an individual would be continuously exposed over a 70-year lifetime at the point of maximum impact. This calculated risk is not meant to predict the actual expected incidence of cancer, but rather a theoretical upper-bound number based on worst-case assumptions. (Ex. 1 § 8.9.2.4; Ex. 47, p. 4.7-3.)

Cancer risk is expressed in terms of chances per million and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. These risks are calculated based on the total risk from exposure to all cancer causing chemicals. According to Staff, a significant increased lifetime cancer risk is

[13] The hazard index for every toxic substance, which has the same type of health effect, is added to yield a total hazard index. The total hazard index is calculated separately for acute and chronic effects. (Ex.47, p. 4.7-4.)

indicated if the calculation reveals one excess case of cancer in an exposed population of 100,000, which is equivalent to a risk of 10 in one million.[14] (Ex. 47, p. 4.7-4.)

- **Construction Impacts**

Possible construction-phase health impacts include (1) exposure to windblown dust from site excavation and grading,[15] and (2) diesel emissions from construction-related equipment. (Ex. 47, pp. 4.7-8 and 4.7-9; Ex. 1, Appendix 8.1-F.) Dust-related impacts may occur from exposure to the dust itself as PM10, or exposure to any toxic contaminants that might be adsorbed onto the dust. (*Id*. at p. 4.7-8.) Mitigation for significant impacts due to emissions of criteria pollutants such as PM10 is included in the **Air Quality** section.

Exhaust from diesel-fueled construction equipment has been established as a potent human carcinogen. Applicant provided data on the diesel emissions of the heavy equipment used in the construction phase. (Ex. 1, Appendix 8.1-F.). The maximum theoretical cancer risk from such diesel exhaust was calculated at 5.2 in a million at the maximum impact location at the Project fence line. (*Ibid*.) Staff's expert testimony indicates that the control measures specified in Conditions **AQ-SC3** and **AQ-SC4** are adequate to minimize the cancer risk from diesel exhaust during the relatively short (18 to 20 months) construction period. (Ex. 47, p. 4.7-9.) We concur.

---

[14] Under the Air Toxics "Hot Spots" and the Proposition 65 programs, a risk of 10 in a million is considered significant and used as a threshold for public notification. The Proposition 65 significance level applies separately to each cancer-causing substance, whereas Staff determines significance based on the total risk from all cancer-causing chemicals. (Ex. 47, p. 4.7-4.)

[15] Since the Phase I and II Environmental Site Assessments did not identify any significant contamination, it is reasonable to conclude that there will not be a significant health risk from soil-bound contaminants. (Ex. 1, Appendices 8.14-A and 8.14-B.) See also the **Waste Management** section of this Decision.

- **Operation Impacts**

The primary health risk during REP operations are associated with combustion emissions from the two combustion turbines and heat recovery steam generators, duct burners, testing of the emergency power generator and fire pump, and evaporative cooling tower. There is also concern that bacterial growth in the cooling tower could lead to potential health effects from exposure to Legionella bacteria. Staff's expert testimony indicates that impacts from air toxics tend to be highest in close proximity to the emission source and quickly decrease with distance. (Ex. 47, p. 4.7-9.)

Consistent with regulatory protocol, Applicant estimated the potential contribution of Project-related TACs[16] to the area's carcinogenic and non-carcinogenic pollutants using several standard assumptions in the health risk analysis.[17] The results of this assessment are summarized in Staff's **Public Health Table 2**, replicated below.[18] (Ex. 1, p. 8.1-24 et seq., p. 8.9-1 et seq., and Appendices 8.1-C through 8.1-G.).

[16] The following non-criteria pollutants were considered with regard to possible cancer risk: acetaldehyde, acrolein, ammonia, arsenic, benzene, 1,3 butadiene, cadmium, chromium VI, diesel exhaust, formaldehyde, nickel, polynuclear aromatic hydrocarbons (PAHs), and propylene oxide. (Ex. 1, p. 8.9-7, Table 8.9-2; Ex. 47, p. 4.7-11, Public Health Table 1.)

[17] These assumptions included (1) pollutants considered, (2) emission levels assumed for pollutants involved, (3) dispersion modeling, (4) exposure pathways, (5) cancer risk estimation, (6) hazard index calculation, and (7) characterization of Project-related risk estimates. (Ex. 1, § 8.9.2.4; Appendix 8.1-G; Ex. 47, p. 4.7-10.)

[18] Staff determined that Applicant's calculations were acceptable with the exception of certain chronic RELs, which were updated in accord with Staff's direction. (Ex. 47, p. 4.7-10.)

Public Health Table 2
Operation Hazard/Risk

Type of Hazard/Risk	Hazard Index/Risk	Significance Level	Significant?
ACUTE NONCANCER	0.048	1.0	No
CHRONIC NONCANCER	0.023	1.0	No
INDIVIDUAL CANCER	0.074×10^{-6} (a) 0.63×10^{-6} (b)	10.0×10^{-6}	No

Source: Exhibit 47, p. 4.7-12
(a) Risk from normal Project operations
(b) Risk from diesel emergency generator testing

The chronic non-cancer hazard index for the maximally exposed individual is 0.023, while the maximum hazard index for acute non-cancer effects is 0.048. These values are well below acceptable significance criteria, leading to the conclusion that the Project's emissions are unlikely to pose a significant risk of chronic or acute non-cancer health effects anywhere in the Project area. (Ex. 47, p. 4.7-11.)

The cancer risk to the maximally exposed individual from normal Project operation is shown as 0.074 in a million, which is well below the significance criterion for this screening level assessment. Thus, Project-related cancer risk from routine operations would be insignificant for all individuals in the Project area. Staff noted that the maximum risks from the assessed turbines and cooling towers occurred at different locations, so adding those risk estimates together provided additional conservatism to the assessment process. (Ex. 47, p. 4.7-12.)

The highest project-related risk would be exposure to diesel exhaust from testing the Project's emergency generator. Staff estimated this risk at 0.63 in a million for the assumed testing period of 200 hours per year. A similar risk for the fire pump was calculated as 0.02 in a million. Both risk estimates are well below the noted significance levels. (Ex. 47, p. 4.7-12.)

The evidence of record indicates that Staff addressed the Roseville Joint Unified High School District's concerns regarding potential health effects at a high school proposed 2,000 feet south of the Project site. According to the Staff, the Project's pollutant emissions are well below levels of concern for the general public and for sensitive receptors such as students. This analysis applies to all locations in the Project area including the proposed school site and reflects the efficacy of the control measures included in the Project design and operation. (Ex. 47, p. 4.7-14.)

Regarding health concerns about cooling tower emissions, there is scientific evidence that untreated or inadequately treated cooling systems are correlated with outbreaks of Legionellosis. (Ex. 47, p. 4.7-12 et seq.) California requires the use of appropriate biocides to reduce the growth of micro-organisms in cooling systems using recycled water. (Cal. Code of Regs., tit. 22, § 60306)

Effective mitigation measures also include drift eliminators, periodic cleaning, and maintenance of mechanical components. These measures are specified by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and the Cooling Tower Institute (CTI) Guidelines for the Best Practices for Control of Legionella. (Ex. 47, p. 4.7-13.)

Condition **PUBLIC HEALTH-1** requires the Project Owner to prepare and implement a Cooling Water Management Plan consistent with Staff's or CTI guidelines to control the potential growth of Legionella in the cooling tower. Conditions **AQ-65** and **AQ-67** address the requirements for installation and operation of the cooling tower mechanical drift eliminator.

The evidentiary record establishes that REP will not contribute to cumulative public health impacts since the calculated cancer and non-cancer health effects are below all significance levels using conservative assumptions. Staff's expert opined that even at the point of maximum impact, there would not be any

significant change in lifetime cancer risk to any individual. For comparison purposes, Staff noted that the overall lifetime cancer risk for the average individual in California is about 250,000 in one million. Moreover, REP-related residential risks are much lower at more distant locations and, therefore, the incremental risk estimate would not result in a significant contribution to cancer and/or chronic/acute health risk in the Project vicinity. (Ex. 47, p. 4.7-13.)

FINDINGS AND CONCLUSIONS

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

1. Construction and normal operation of the Project will result in the routine release of criteria and non-criteria pollutants that have the potential to adversely impact public health.

2. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

3. Emissions of criteria pollutants, which are discussed in the **Air Quality** section of this Decision, will be mitigated to levels consistent with applicable standards.

4. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of toxic air contaminants.

5. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects.

6. Application of the hazard index method establishes that emission of non-criteria pollutants from the Roseville Energy Park will not cause acute or chronic adverse public health effects.

7. The maximum cancer risk associated with the Project is less than the significance threshold commonly accepted for risk analysis purposes.

8. The Project owner will implement a Cooling Water Management Plan in accordance with applicable LORS and guidelines to minimize the potential

for growth of Legionella bacteria and other micro-organisms in cooling tower emissions.

9. Cumulative impacts from non-criteria pollutants are not expected to be significant.
10. Emissions from the construction, operation, and closure of the proposed natural gas-burning Roseville Energy Park will not have a significant adverse impact on the public health of the surrounding population.

We therefore conclude that Project emissions of non-criteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk and that the Project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

Public Health-1 The Project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is controlled according to industry standards. The Plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's Guidelines on "Best Practices for Control of Legionella."

VERIFICATION: At least 30 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

C. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the Roseville Energy Park (REP) will create significant impacts to public health and safety resulting from the use, handling, or storage of hazardous materials at the facility. Several vocational factors affect the potential for Project-related hazardous materials to cause adverse impacts. These include local meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. The evidence of record incorporates these factors in the analysis of potential impacts. Related issues are addressed in the **Facility Design**, **Waste Management, Public Health, Worker Safety,** and **Traffic and Transportation** portions of this Decision.

The evidence of record was undisputed regarding the handling of hazardous materials by the REP. (1/25/05 RT 20-21; Ex. 1, § 8.5, Appendix 8.5-A; Ex. 3, HazMat Data Responses 40; Ex. 47, p. 4.4-1 et seq.; and Ex. 33.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Engineering controls and administrative controls affect the significance of potential impacts due to hazardous materials usage. Engineering controls are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) which can prevent a hazardous material spill from occurring, which can limit the spill to a small amount, or which can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow that will help to prevent accidents or reduce adverse effects if they occur. In both cases, the goal is to prevent a spill from releasing toxic gases off-site and causing harm. (Ex. 47, p. 4.4-5.)

A variety of hazardous materials will be stored and used for construction of the Project and for routine plant operation and maintenance. (Ex. 1, Tables 8.5-2

and 8.5-3.) Most of these materials, such as corrosion inhibitors and water conditioners, are stored in small quantities. During the construction phase of the Project, the only hazardous materials proposed for use include paint, paint thinner, cleaners, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, welding flux and gases, lubricants, and emergency refueling containers. Any impact resulting from spills or other releases of these materials would be limited to the site due to the small quantities involved. (Ex. 47, p. 4.4-6.)

During operation, large quantities of hydrochloric acid, sodium hypochlorite, sodium hydroxide, and aqueous ammonia will be stored on-site in reportable amounts as specified in state law.[19] Of these, only aqueous ammonia has sufficient vapor pressure to potentially cause off-site impacts. (Ex. 47, pp. 4.4-7 to 4.4-10.) Although natural gas will be used in significant quantities, it will not be stored on-site. (*Id.* at p. 4.4-7.)

1. Hydrochloric acid

Hydrochloric acid, which is used in large quantities once every four years for the cleaning of the Heat Recovery Steam Generators (HRSG), does not pose a significant risk of off-site impacts because of the infrequent use and the safety measures required of the HRSG cleaning company, including the use of temporary berms. (Ex. 47, p. 4.4-7.)

2. Sodium Hypochlorite

According to the Applicant, 2,000 gallons of sodium hypochlorite would be stored at the Project site. (Ex. 1, Table 8.5-3.) Sodium hypochlorite has a low potential

[19] Regulated threshold quantities are established by the California Accidental Release Prevention (Cal-ARP) Program. The Cal-ARP Program includes both federal and state programs established to prevent accidental release of regulated toxic and flammable substances. (CA Health & Safety Code, § 25531 et seq.; Cal. Code of Regs., tit. 19, § 2720 et seq.) Regulated substances are those stored or used in amounts exceeding threshold planning quantities (TPQs) that would require the filing of a Risk Management Plan under the Cal-ARP program. (Ex. 1, § 5.15, p. 8.5-17 et seq.; Ex. 47, p. 4.4-2.)

to affect the off-site public because it is in aqueous solution and its vapor pressure is low. Typically, sodium hypochlorite is used as a substitute for chlorine gas, which is more toxic and likely to migrate off-site because it is a gas stored in concentrated form under pressure. Thus, the use of sodium hypochlorite is considered safer than the alternative chlorine gas. The amount of sodium hypochlorite stored on-site is below the Reportable Quantity defined in the Cal-ARP regulations. Staff's expert concluded that storage and usage of sodium hypochlorite in aqueous solution does not pose a significant risk to the off-site public. (Ex. 47, p. 4.4-7.)

3. Sodium Hydroxide

According to Staff's expert testimony, sodium hydroxide will be stored on-site but does not pose a risk of off-site impacts because it has relatively low vapor pressure and spills would be confined to the site. No further analysis was necessary. (Ex. 47, p. 4.4-7.)

4. Aqueous Ammonia

Aqueous ammonia is used in the Selective Catalytic Reduction (SCR) process to control NOx emissions from combustion of natural gas in the facility. One above-ground 10,000-gallon tank will store a maximum amount of 9,000 gallons of 28 percent aqueous ammonia solution. A 6,500-gallon tanker truck will make two to three deliveries of aqueous ammonia to the REP every month. (Ex. 1, § 8.5.4.2.) The accidental release of aqueous ammonia without proper mitigation can result in hazardous downwind concentrations of ammonia gas.[20] (Ex. 47, p. 4.4-10.)

The aqueous ammonia storage and handling facilities will be equipped with continuous tank level monitors. Secondary containment will be provided by a

[20] The choice of aqueous ammonia significantly reduces the risk that is associated with the more hazardous anhydrous form, which is stored as a liquid gas. (Ex. 47, p. 4.4-10.)

diked containment basin around the tank. Ammonia vapor detectors will be installed around the storage tanks and truck unloading area to trigger alarms in the event of tank leakage.[21] (Ex. 1, § 8.5.4.2, Appendix 8.5-A; Ex. 47, p. 4.4-11.) Condition **HAZ-4** requires that the aqueous ammonia storage tank be designed to certain rigid specifications.

Applicant performed an Off-Site Consequences Analysis (OCA) to evaluate potential public health impacts in a "worst case scenario" that would result from an accidental release during truck unloading.[22] (Ex. 1, § 8.5.2.2; Ex. 3, HazMat Data Response 40.) Staff considers the threshold significance level to be a one-time exposure to 75 parts per million (ppm) of ammonia gas.[23] (Ex. 47, p. 4.4-11.) The OCA indicated that concentrations exceeding 75 ppm in the worst-case scenario would be present at 109 feet, which is entirely limited to the Project site. Thus, no off-site areas would be impacted by the 75 ppm concentration. The alternative scenario involves a much smaller volume of spill but assumes meteorological conditions that would increase dispersion of the vapor cloud. However, the maximum distance for that scenario would also be entirely within the Project fence line. (*Ibid.*; Ex. 3, HazMat Data Response 40.)

Currently, there are sensitive receptors (schools, hospitals, day care centers, convalescent centers, etc.) within a two-mile radius of the site. (Ex. 1, §§ 8.5.1; 8.9.1.) The West Roseville Specific Plan (WRSP) prohibits housing within 1,000 feet of the water treatment plant adjacent to the Project site. However, the WRSP allows the possible construction of four schools less than one mile from the Project site and a high-density residential area approximately 0.3 mile west of

---

[21] See also the **Facility Design** section of this Decision regarding seismic standards for storage tanks. (Ex. 47, p. 4.4-11.)

[22] The worst-case release is associated with a rupture of the ammonia storage tank, releasing all of its contents into the secondary containment area. The alternative scenario is a failure of a supply truck loading hose, spilling aqueous ammonia onto the truck unloading pad with flow to the capture sump. (Ex. 47, pp. 4.4-11 and 4.4.-12.)

[23] Staff's Appendix A, Table 1, replicated at the end of this section, shows the acute ammonia exposure guidelines for different sectors of the population.

the Project site.[24] (Ex. 47, p. 4.4-11.) Since there is no significant risk of an accidental spill resulting in ammonia concentrations in excess of 75 ppm beyond the site fence line, Staff's expert witness concluded there would be no significant impacts to the prospective off-site public. (*Ibid.*)

Condition **HAZ-2** requires the Project Owner to prepare a Risk Management Plan (RMP) to incorporate the engineering controls proposed for handling aqueous ammonia as well as a Hazardous Materials Business Plan that includes worker training, protective equipment, and safe operation procedures for approval by the City of Roseville Fire Department. (Ex. 1, § 8.5.4.4; Ex. 47, pp. 4.4-2, 4.4-17; CA Health & Safety Code, §§ 25503.5, 25504, 25331 et seq.) See also the section on **Worker Safety and Fire Protection** in this Decision. (Ex. 47, p. 4.4-16.)

The evidence of record indicates that risks associated with the transport of hazardous materials will be adequately mitigated by adhering to the extensive state and federal regulatory programs that apply to the transport of hazardous materials on public roadways. (Ex. 1, § 8.5.4.3; Ex. 47, pp. 4.4-12-4.4-13.) Condition **HAZ-5** requires that vendors supplying aqueous ammonia to the REP must use tankers that meet or exceed U. S. Department of Transportation (DOT) design standards established by DOT Code MC-307. Since the hazmat delivery route from state highways through local Roseville roadways may be modified over time, Condition **HAZ-6** requires the Project Owner to direct all vendors to use only the route approved by the Energy Commission Compliance Manager.

[24] Staff consulted with the Roseville Joint Unified School District concerning potential impacts due to an accidental spill and determined that the nearest proposed school site would not be affected even in the worst case accidental release scenario. Staff also met the State Board of Education about the proximity of the proposed gas pipeline route; subsequently, the route was relocated by the Applicant to address the potential conflict with state school construction guidelines. (See discussion in the **Project Description** section of this Decision.)

5. Natural Gas

The Project includes the construction and operation of a natural gas pipeline and the handling of large amounts of natural gas, which poses a fire and/or explosion risk due to extreme flammability. (Ex. 47, p. 4.4-7.)

The Project's gas pipeline will be designed, constructed, and owned by Pacific Gas & Electric Company (PG&E) in accordance with state and federal standards for gas pipelines located in populated areas.[25] Staff believes the worst-case scenario for off-site natural gas hazards is primarily a safety hazard to construction workers in the event of a large pipeline rupture caused by improper use of heavy equipment near the pipeline.

The following safety features must be incorporated into the design and operation of the gas pipeline as required by state and federal law: (1) the pipeline must be designed, constructed, and tested to carry natural gas at a certain pressure, but the working pressure must be less than the design pressure; (2) butt welds will be x-rayed and the pipeline must be tested with water prior to the introduction of natural gas into the line; (3) the pipeline must be surveyed annually for leakage; (4) the pipeline must be marked to prevent rupture by heavy equipment excavating in the area;[26] and (5) valves at the meter must be installed to isolate the line if a leak occurs. Compliance with state and federal standards on seismic

[25] Since the pipeline will be built, owned, and operated by PG&E, the Project Owner would have no authority to ensure compliance with gas pipeline standards. PG&E's policies and procedures for the maintenance and operation of gas pipelines, including the requirement to inspect the pipelines after significant seismic events, are consistent with applicable state and federal laws designed to protect public health and safety. PG&E is subject to both CPUC and DOT regulatory oversight regarding gas pipeline safety standards. Therefore, according to Staff, it would be unnecessary to require the Project Owner to comply with Conditions of Certification on gas pipeline safety measures since such a requirement would be unenforceable. We agree. (Ex. 47, pp. 4.4-3 and 4.4-18.)

[26] PG&E is required by law to mark the gas pipeline route and ensure that the route is listed with the USA "One-Call" system. This program enables any individual or agency (such as Caltrans) to obtain the precise location of the pipeline and avoid excavations in the area that could result in accidental rupture. (Ex. 47, pp. 4.4-3 and 4.4.9.)

design of the gas pipeline will further reduce the potential for pipeline leaks or ruptures.[27] (Ex. 47, p. 4.4-9.)

The risk of fires and/or explosions connected with HRSG firing and start-up procedures on-site will be reduced to insignificant levels by adherence to applicable fire code standards. These include the use of double block and bleed valves for fast shut off, automated combustion controls, burner management, inspection of welds, and use of corrosion resistant coatings to adequately minimize the potential for injury to workers and to the off-site public. (Ex. 47, pp. 4.4-7 and 4.4-8.)

Condition **COM-8** in the **General Conditions** section of this Decision requires the Project Owner to prepare a Vulnerability Assessment and to implement Site Security measures to ensure that neither the REP site nor a shipment of hazardous material is the target of unauthorized access. (Ex. 47, p. 4.4-14.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. The REP will use hazardous materials during construction and operation, including large quantities of hydrochloric acid, sodium hypochlorite, sodium hydroxide, aqueous ammonia, and natural gas.
2. The major public health and safety hazards associated with these hazardous materials include the accidental release of aqueous ammonia and fire and explosion from natural gas.
3. Compliance with applicable administrative, engineering, and regulatory requirements for safe transportation, delivery, and storage of aqueous ammonia will reduce potential risks of accidental release to insignificant levels.

[27] See also the **Facility Design** section of this Decision.

4. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

5. Implementation of the mitigation measures described in the evidentiary record and contained in the Conditions of Certification, below, ensures that the Project will not cause significant impacts to public health and safety as the result of the handling, storage, or transportation of hazardous materials.

6. With implementation of the Conditions of Certification, below, the REP will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

The Commission concludes, therefore, that the use of hazardous materials by the REP will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The Project Owner shall not use any hazardous material not listed in Appendix B (AFC Table 8.5-3), below, or in greater quantities than those identified by chemical name in Appendix B, below, unless approved in advance by the City of Roseville Fire Department and the Compliance Project Manager (CPM).

Verification: The Project Owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility.

HAZ-2 The Project Owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority - CUPA (City of Roseville Fire Department) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). The Project Owner shall reflect all recommendations of the City of Roseville Fire Department and the CPM in the final documents. Copies of the final Business Plan and RMP, reflecting all comments, shall be provided to the CPM.

Verification: At least 30 days prior to receiving any hazardous material on the site, the Project Owner shall provide a copy of a final Business Plan to the CPM. At least 30 days prior to delivery of aqueous ammonia to the site, the Project Owner shall provide the final RMP, to the City of Roseville Fire Department and the CPM.

HAZ-3 The Project Owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia and shall submit this plan to the CPM for approval. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least 60 days prior to the delivery of aqueous ammonia to the facility, the Project Owner shall provide the plan to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to either the ASME Pressure Vessel Code and ANSI K61.6 or to API 620. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 100% of the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

Verification: At least 60 days prior to delivery of aqueous ammonia to the facility, the Project Owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The Project Owner shall direct all vendors delivering aqueous ammonia to the site to use only transport vehicles that meet or exceed the specifications of DOT Code MC-307.

Verification: At least 60 days prior to receipt of aqueous ammonia on site, the Project Owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 The Project Owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM.

Verification: At least 60 days prior to the delivery of any hazardous materials on-site, the Project Owner shall submit to the CPM for review and approval a copy of the letter to be mailed to the vendors. The letter shall state the required transportation route limitation.

D. WASTE MANAGEMENT

The Project will generate both non-hazardous and hazardous wastes during construction and operation. State and federal laws regulate the management of hazardous waste. Generators of hazardous waste must obtain EPA identification numbers, and use permitted treatment, storage, and disposal facilities. Registered hazardous waste transporters are required to transfer hazardous waste to disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.; Ex. 47, p. 4.13-2.)

This analysis reviews the Applicant's waste management plans for reducing the risks and environmental impacts associated with the handling, storage, and disposal of Project-related wastes. The evidentiary record on this topic was undisputed. (1/25/05 RT 33-34; Ex. 42.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Excavation

The REP site was recently used as the construction staging and laydown area for the adjacent Pleasant Grove Wastewater Treatment Plant (PGWWTP). During construction of the PGWWTP, Applicant's consultants observed several hazardous materials storage areas at the site typical of industrial construction. (Ex. 1, p. 8.14-8; Ex. 47, p. 4.13-3.)

Three Phase I and one Phase II Environmental Site Assessments (ESA) were performed for both the PGWWTP and sites.[28] (Ex. 47, p. 4.13-3; Ex. 1, Appendices 8.14-A through 8.14-D.) . The ESAs did not find any significant soil

[28] The City of Roseville Environmental Utilities Department contracted with Earthen, Ltd., which completed Phase I and Phase II Seas for the PGWWTP in 1999. URS completed a Phase I ESA for the REP site in 2001, and Titrates submitted a Phase I ESA Update in 2003.

contamination at either site. Subsequently, the Department of Toxic Substances Control (DTSC) requested additional Phase I ESA data for the REP's natural gas pipeline route. In February 2004, Applicant submitted the requested information in its Corridor Study Report, which found no evidence of soil contamination along the pipeline route. (Ex. 3, Waste Data Responses 70-71; Ex. 7; Ex. 47, pp. 4.13-9 and 4.13-10.) On March 29, 2004, Staff conducted additional site reconnaissance along all accessible portions of the gas pipeline route to confirm that no new businesses were established after the ESAs were completed. (Ex. 47, p. 4.13-3.) Conditions **WASTE-1** and **WASTE-2** ensure that any contaminated soil discovered during Project-related excavation will be handled in accordance with applicable law.

2. Construction

Site preparation and construction of the power plant and associated facilities will generate both non-hazardous and hazardous wastes in solid and liquid forms. Solid waste generated during construction will primarily be non-hazardous, including approximately 50 tons of wood, paper, glass and plastics, 30 tons of excess concrete, and 10 tons of scrap metal. These wastes will be recycled, where practical, with the remainder deposited at a Class III landfill. Waste concrete will be deposited at a Class III landfill unless clean fill sites are available. (Ex. 1, § 8.14.2; Ex. 47, p. 4.13-4.)

Drilling to install the natural gas pipeline will generate approximately 200 tons of drilling mud, consisting of nontoxic betonies clay used to lubricate and cool the drilling bit. The drilling mud will be tested and disposed appropriately at a Class II or Class III landfill. (Ex. 1, p. 8.14-3; Ex. 47, p. 4.13-4.)

Non-hazardous liquid wastes generated during construction include sanitary wastes, equipment wash water, stormwater runoff, and wastewater from the gas pipeline hydro testing process. (Ex. 1, p. 8.14-3.)

Sanitary waste will be collected in portable toilet facilities. Equipment wash water will be contained at the designated wash sites and disposed of off-site. Storm water runoff will be managed according to an approved plan discussed in the **Soil and Water Resources** section of this document. Wastewater resulting from the hydrostatic test of the gas pipeline will be filtered to remove sediment and welding fragments. The water will then be tested and, if not contaminated, discharged to the PGWWTP in accordance with applicable regulatory requirements via an existing storm sewer. Contaminated water will be delivered to an off-site treatment, storage, and disposal (TSD) facility. (Ex. 1, p. 8.14-3; Ex. 47, p. 4.13-4.)

Hazardous wastes generated during construction include small amounts of spent welding materials and dried paint. Liquid hazardous wastes include waste solvents along with flushing, cleaning, and aestivating (nitrate or phosphate solution) fluids estimated in the amount of one to two times the internal volume of the pipes cleaned. (Ex. 1, p. 8.14-3.)

Both solid and liquid hazardous wastes (except for the flushing fluids, which will be temporarily stored on-site in portable tanks and disposed off-site) will be accumulated at satellite locations and transported daily to a 90-day storage area located at the construction laydown area. Within 90 days of storage, these accumulated wastes will be transported by a certified collection company to a TSD facility in accordance with applicable law. (Ex. 1, p. 8.14-4.)

3. Operation

The Project will generate solid and liquid non-hazardous and hazardous wastes during normal operating conditions.

Non-hazardous solid wastes include rags, turbine air filters, machine parts, electrical materials, empty containers, and typical worker and small office wastes. Approximately 30 cubic yards of these wastes will be generated annually and

recycled, where practical, or otherwise delivered to a Class III landfill. (Ex. 1, § 8.14.2.2.)

The REP's Zero Liquid Discharge System (ZLD) will produce approximately 867 tons per year of salt cake, which would require disposal.[29] (Ex. 1, pp. 8.14-4 and 8.14-7; see also Ex. 1, § 7.0.) Applicant asserted that the salt cake would likely be classified as a non-hazardous waste. While naturally occurring trace metals in recycled water from the PGWWTP will be concentrated in the salt cake, it is not expected to exhibit either state or federal hazardous waste characteristics and, therefore, it is unlikely to require special handling or disposal at a Class I or Class II landfill. (Ex. 1, p. 8.14-4.)

Staff's review of ZLD salt cake constituents at other power plants indicated that metals of concern were below the state's regulatory threshold for identifying hazardous waste and would likely be the same for the REP. (Ex. 47. p. 4.13-5.) Nevertheless, Staff was concerned that due to the high salt content of salt cake, it could be considered a designated waste. This is defined as a non-hazardous waste that contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations that could exceed applicable water quality objectives or affect the beneficial uses of waters of the state.[30] (*Id*. at p. 4.13-6.) Designated wastes must be disposed of at Class I or Class II disposal sites although designated waste can be discharged to a Class III disposal site if there is a lower risk to water quality than indicated by the "designated waste" classification. To ensure the correct classification, Condition **WASTE-7** requires the Project Owner to test salt cake for the presence of hazardous levels of metals and to identify whether it should be classified as hazardous, non-hazardous, or designated waste.

[29] The ZLD system is described in the **Soil and Water Resources** section of this Decision.

[30] Title 27 California Code of Regulations Section 20210 et seq.

Hazardous wastes generated during routine operation of the Project include waste lubricating oil, used oil filters, laboratory waste, selective catalytic reduction (SCR) and oxidation catalysts, oily rags and absorbents, and used acidic and alkaline chemical cleaning wastes (potentially containing high concentrations of heavy metals). See Applicant's Table 8.14-1 replicated at the end of this section, below. (Ex. 1, p. 8.14.6, Table 8.14-1.)

Most of the wastes will be generated in relatively small quantities and will be recycled by certified recyclers. The SCR catalyst will be replaced every three to five years, resulting in the generation of 25,000 pounds of waste material for disposal in a Class I facility, if recycling or regeneration is not feasible. Chemical materials collected in drains as a result of spillage, overflows, and maintenance operations will be neutralized on-site (if necessary) and directed into the cooling tower basin. In addition, about 80 pounds per year of cooling tower sludge, which normally would be deposited at a Class II facility, could require disposal as a hazardous waste. (Ex. 47, p. 4.13-6.)

4. Potential Impacts on Existing Waste Disposal Facilities

Non-hazardous waste disposal sites suitable for discarding Project-related construction and operation wastes are identified in Applicant's Table 8.14-2, replicated at the end of this section, below. The City of Roseville's Solid Waste Division will provide collection services for removal of solid waste from the Project site. Non-hazardous solid waste will be deposited at either the Western Placer Waste Management Authority Materials Recovery Facility for recycling or the Western Regional Sanitary Landfill. (Ex. 1, p. 8.14-7.). The total amount of non-hazardous waste generated from construction and operation will contribute less than one percent of available landfill capacity.[31] (Ex. 47, p. 4.13-7.) It is therefore reasonable to conclude that disposal of non-hazardous solid wastes

[31] The REP will generate an estimated 290 tons of solid waste during construction and 30 cubic yards (equivalent to 30 tons or less) per year during operation. The amount of solid waste disposed of in Placer County was 263,784 tons in 2002. REP's contribution represents less than one percent of total county waste generation. (Ex. 47, p. 4.13-6.)

generated by the REP will not significantly impact either capacity or remaining life of these facilities.

According to Applicant, there is no shortage of hazardous waste landfill capacity in California. The deposit rate has decreased by 50 percent in recent years due to off-site commercial hazardous waste treatment, recycling, and transfer of hazardous waste out of state. (Ex. 1, p. 8.14-9.) The Class I landfills in California are (1) the Clean Harbors Buttonwillow Landfill in Kern County (which has reached capacity but has obtained permits to reopen with additional capacity), (2) the Clean Harbors Westmoreland Landfill in Imperial County, and (3) the Waste Management Landfill in King's County. The Imperial County and King's County facilities represent a combined total of 11.8 million cubic yards of remaining hazardous waste disposal capacity and a remaining operating lifetime of 40 years with extensions planned in the future. (Ex. 47, p. 4.13-7; Ex. 1, p. 8.14-9.)

The evidentiary record indicates that even if the Project's estimated 867 tons per year of salt cake were deposited in a Class I facility, no significant impact on those waste disposal facilities would occur. (Ex. 47, p. 4.13-7.)

5. Mitigation

The Project Owner will implement Best Management Practices in handling Project-generated wastes, using a four-step approach of source reduction, recycling, treatment, and disposal. (Ex. 1, § 8.14.4.)

Since final facility design and operational procedures will determine the amounts and types of wastes ultimately generated, Condition **WASTE-5** requires the Project Owner to submit Waste Management Plans for both construction and operation. As a generator of hazardous waste, the Project Owner must also prepare a Hazardous Waste Source Reduction and Evaluation Review and Plan. (Cal. Code Regs., Tit. 22, § 67100.1 et seq.) Condition **WASTE-3** requires the Project Owner obtain a unique hazardous waste generator identification number

from the DTSC. Condition **WASTE-4** requires the Project Owner to notify the CPM whenever the owner becomes aware of any impending waste management-related enforcement action. Condition **WASTE-6** requires the Project Owner to provide hazardous waste recognition training to workers.

6. Cumulative Impacts

Project-related quantities of non-hazardous and hazardous wastes would add to the total quantities of waste generated in Placer County and the State of California. However, this waste will be generated in small quantities, recycling efforts would be prioritized wherever practical, and capacity remains available in a variety of disposal facilities. It is therefore reasonable to conclude that these added waste materials will not result in significant waste management impacts on available landfills. (Ex. 47, p. 4.13-8.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find as follows:

1. The Project will generate hazardous and non-hazardous wastes during construction and operation.
2. Phase I and Phase II Environmental Site Assessments indicate the soil at the Project site is below the level of regulatory concern. Conditions of Certification **WASTE-1** and **WASTE-2** ensure that any contaminated soil will be handled in accordance with applicable laws, ordinances, regulations, and standards.
3. Hazardous and non-hazardous wastes will be recycled to the extent practical.
4. Wastes that cannot be recycled will be disposed in appropriate landfills.
5. Disposal of Project wastes will not result in significant adverse impacts to existing waste disposal facilities.
6. The Conditions of Certification set forth below and waste management practices detailed in the evidentiary record will reduce potential waste impacts to insignificant levels.
7. Implementation of the Conditions of Certification will ensure that the Project complies with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

We therefore conclude that the Project's construction and operational wastes will be properly managed, and will not create a significant direct, indirect, or cumulative adverse impact.

CONDITIONS OF CERTIFICATION

WASTE-1 The Project Owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority by the Project Owner to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization the Project Owner shall submit the resume to the CPM.

WASTE-2 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the Project Owner and CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the Project Owner shall contact representatives of the Regional Water Quality Control Board (as appropriate), the Roseville Fire Department, and the Sacramento Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The Project Owner shall submit any final reports filed by the Registered Professional Engineer or Geologist to the CPM within five days of their receipt. The Project Owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 The Project Owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

Verification: The Project Owner shall keep its copy of the identification number on file at the Project site and notify the CPM via the Monthly Compliance Report of its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the Project Owner shall notify the CPM of any such action taken or proposed to be taken against the Project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The Project Owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the Project Owner of any changes that will be required in the manner in which Project -related wastes are managed.

WASTE-5 The Project Owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including Project ions of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste stream, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the Project Owner shall submit the Construction Waste Management Plan to the CPM.

The operation waste management plan shall be submitted to the CPM no less than 30 days prior to the start of Project operation. The Project Owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the Project Owner shall document the actual waste management methods used during the year compared to the planned management methods.

WASTE-6 Prior to any earth moving activities, employees shall receive hazardous waste-related training that focuses on the recognition of potentially contaminated soil and/or groundwater and contingency procedures to be followed as specified in Condition **WASTE-2** above. Training shall comply with Hazardous Waste Operations (8 CCR 5192) and Hazard Communication (8 CCR 5194) requirements as appropriate.

Verification: The Project Owner shall notify the CPM via the monthly compliance report of completion of the hazardous waste training program.

WASTE-7 The Project Owner shall test the salt cake product from the crystallizer for the presence of hazardous levels of metals. If levels are below ten times the Soluble Threshold Level Concentration as listed in Title 22, California Code of Regulations, section 66261.24, then future testing is not required unless there is a substantial change in the wastewater treatment process. If not classified as a hazardous waste, the Project Owner shall manage the salt cake product appropriately as a non-hazardous or designated waste unless it is sold as a commercial product.

Verification: No later than 30 days after the initial generation of salt cake, the Project Owner shall notify the CPM of the test results and the planned disposal method.

Table 8.14-1. Hazardous wastes generated at the REP facility during operation.

Waste	Origin	Composition	Quantity	Classification	Disposal
Lubricating oil	Gas and steam turbine lubricating oil system	Hydrocarbons	Approximately 2,500 gal per year	Hazardous	Disposed by certified oil recycler
Lubricating oil filters	Gas and steam turbine lubricating oil system	Paper, metal, and hydrocarbons	Approximately 450 lbs per year	Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	Approximately 400 gal per year	Hazardous	Disposed of in a Class I landfill
SCR & CO catalyst units	SCR/CO catalyst systems	Metal and heavy metals, including vanadium	Approximately 25,000 pounds per 3 to 5 years	Hazardous	Recycled by catalyst manufacturer or disposed in Class I landfill
Oily rags	Maintenance, wipe-down of equipment, etc.	Hydrocarbons, cloth	Approximately 400 rags per year	Hazardous	Recycled by certified oil recycler
Oil sorbets	Cleanup of small spills	Hydrocarbons	Approximately 120 pounds per year	Hazardous	Recycled or disposed of by certified oil recycler
Chemical cleaning wastes	HRSG cleaning	Alkaline and acidic solution, metals	Approximately 50,000 gal initially and every 3 to 5 years	Hazardous	Offsite disposal by contractor
Wash water	Turbine and HRSG fireside washing	Water containing metals	Approximately 3,500 gallons per year	May be hazardous, but usually is not	Offsite disposal by contractor
Cooling tower sludge	Deposited in cooling tower basin by cooling water	Dirt from air, arsenic from water	Approximately 80 tons per year	May be hazardous, but usually is not	Class II LF if non-hazardous; Class I if hazardous
Salt cake	ZLD system	Salts with minor amounts of trace metals and contaminants from the source water	Approximately 867 tons per year	May be hazardous, but is expected to be non-hazardous	Class II or III if non-hazardous; Class I if hazardous
Spent Batteries	Station batteries	Lead-acid batteries	Approximately 40 pounds per year	Hazardous	Battery recycler

Source: Ex. 1, p. 8.14-6, Table 8.14-1.

Table 8.14-2. Solid waste disposal facilities for the REP waste.

Landfill/ Transfer Station	Location	Class	Permitted Capacity	Current Operating Capacity	Remaining Capacity	Estimated Closure Date	Comment
WPWMA MRF	Placer County (between Roseville - Lincoln)	RF	1,200 tons/day	850 tons/day	N/A	N/A	No enforcement actions
WPWMA Western Regional Sanitary Landfill	Placer County (between Roseville - Lincoln)	I/III	1,200 tons/day	845 tons/day	million cubic yards (49 years)	2052	CIWMB letter of intent to place on state standards non-compliance list.

Ex. 1, p. 8.14-8, Table 8.14-2.

This Page Left Intentionally Blank

E. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. This analysis reviews whether Applicant's proposed health and safety plans will be adequate to protect industrial workers and provide fire protection and emergency response in accordance with all applicable laws, ordinances, regulations, and standards. Evidence submitted on this topic was uncontested. (1/25/05 RT 34-35; Ex. 43; Ex. 1, § 8.16; Ex. 47, p. 4.14-1 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

During construction and operation, industrial workers may be exposed to chemical spills, hazardous wastes, fires, gas explosions, moving equipment, live electric conductors, or confined space entry and egress problems. Exposure to these hazards can be minimized through adherence to appropriate design criteria and administrative controls, use of personal protective equipment, and compliance with applicable LORS. (Ex. 47, p. 4.14-4.)

The Project Owner will develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which must be reviewed by the appropriate regulatory agencies prior to Project construction and operation. (Ex. 1, §§ 8.16.2.1, 8.16.2.2 and 8.16.3; Ex. 47, pp. 4.14-5 to 4.14-7.) Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Emergency Action Plans, Fire Protection and Prevention Plans, and other general safety procedures will be prepared for both the construction and operation phases of the project. (*Ibid*.)

The Project will rely on both on-site fire protection systems and local fire protection services. The on-site fire protection system provides the first line of defense for small fires. In the event of a major fire, fire support services including trained firefighters and equipment for a sustained response will come from the

City of Roseville Fire Department (RFD). (Ex. 1, pp. 8.16-9 and 8.16-10; Ex. 47, pp. 4.14-9 and 4.14-10.)

The Project Owner plans to implement the on-site fire protection and suppression requirements described in the evidentiary record. Recycled water will be available in an on-site storage tank dedicated to firefighting purposes. Fire hydrants and hose stations will connect to an underground firewater piping system. Electric motor driven fire pumps will provide water under pressure to the firewater loop. A diesel engine-driven fire pump will provide backup to the motor-drive pumps in the event of a power failure. Sprinkler systems will be installed in both the administration building and the fire pump enclosure as required by NFPA and local code requirements. Flammable materials will be located in designated and approved storage areas with fixed fire prevention systems, which include fire extinguishers and hose lines. A carbon dioxide (CO_2) fire protection system with automatic fire detection sensors will be installed in the combustion turbine generator (CTG) enclosure. Deluge type spray systems will provide fire protection for the steam turbine lube oil skid and combustion turbine lube oil skids. (Ex. 47, p. 4.14-10; Ex. 1, § 8.16.2.2.)

The closest fire station to the REP is Fire Station #5, located at 1657 Pleasant Grove Avenue, approximately 3.8 miles from the Project site. Estimated response time is 8 to 10 minutes. (Ex. 1, pp. 8.16-9 and 8.16-10.) According to Staff, the RFD response time is adequate and consistent with previously certified projects.[32] (Ex. 47, p. 4.14-10.)

The RFD confirmed that it is sufficiently staffed and equipped to control potential fires at the REP site. Further, the evidence indicates that Project construction and operation in concert with the demand of existing industrial facilities in the

[32] Staff indicated that the RFD response time is no greater than that for other rural power plants previously certified by the Energy Commission. The Project area is characterized as a rural area and there are few industrial facilities in the vicinity. (Ex. 47, p. 4.14-10; see also the **Project Description** section of this Decision.)

area will not result in cumulative impacts on the fire and emergency service capabilities of the RFD. (Ex. 47, p. 4.14-10.)

Conditions of Certification **WORKER SAFETY-1, WORKER SAFETY-2,** and **WORKER SAFETY-3** require the Project Owner to develop and implement the appropriate health and safety programs necessary to protect workers and to ensure adequate emergency responses. The final Fire Protection and Prevention Program must be submitted to the Energy Commission's Compliance Project Manager and to the RFD prior to construction and operation to confirm the adequacy of the proposed fire protection measures. (Ex. 47, p. 4.14-11.)

FINDINGS AND CONCLUSIONS

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

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The REP will include on-site fire protection and suppression systems for first line defense in the event of a fire.

4. The City of Roseville Fire Department will provide fire protection and emergency response services to the project.

5. Existing fire and emergency service resources are adequate to meet Project needs.

6. The REP will not result in cumulative adverse impacts to the City of Roseville Fire Department's emergency response capabilities.

7. Implementation of the Conditions of Certification, below, and the mitigation measures described in the evidentiary record will ensure that the Project conforms with all applicable laws, ordinances, regulations,

and standards on industrial worker health and safety as identified in the pertinent portions of **Appendix A** of the Decision.

The Commission therefore concludes that implementation of the Project Owner's Safety and Health Programs and Fire Protection measures will reduce potential adverse impacts to the health and safety of industrial workers to levels of insignificance.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program, which shall include:

- Construction Safety Program;
- Construction Personal Protective Equipment Program;
- Construction Exposure Monitoring Program;
- Construction Emergency Action Plan; and
- Construction Fire Protection and Prevention Plan.

The Safety Program, the Personal Protective Equipment Program, and the Exposure Monitoring Program shall be submitted to the CPM for review and comment concerning compliance of the program with all applicable Safety Orders. The Construction Fire Protection and Prevention Plan and Emergency Action Plan shall be submitted to the City of Roseville Fire Department for review and comment prior to submittal to the CPM.

Verification: At least 30 days prior to the start of construction, the Project Owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The Project Owner shall provide a letter from the City of Roseville Fire Department stating that it has reviewed and commented on the Construction Fire Protection and Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 The Project Owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- Operation Injury and Illness Prevention Plan;
- Emergency Action Plan;
- Hazardous Materials Management Program;

- Operations and Maintenance Safety Program;
- Fire Protection and Prevention Program (Cal. Code Regs., tit. 8, § 3221); and;
- Personal Protective Equipment Program (Cal. Code Regs., tit. 8, §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM, for review and comment concerning compliance of the program with all applicable Safety Orders. The Operation Fire Protection Plan and the Emergency Action Plan shall also be submitted to the City of Roseville Fire Department for review and acceptance

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM (1) a copy of the Project Operations and Maintenance Safety & Health Program and (2) a letter from the City of Roseville Fire Department stating that it has reviewed and accepted the Project Operations and Maintenance Safety & Health Program.

WORKER SAFETY-3 The Project Owner shall ensure that a CPM-approved Safety Monitor(s) conducts an on-site safety inspection of the power plant at least once a week during construction of permanent structures and commissioning unless a lesser number of inspections is approved by the CPM. The CPM may also require a similar inspection and report concerning linear facilities.

The Safety Monitor shall keep the Chief Building Official (CBO) fully informed regarding safety-related matters and coordinate with the CBO concerning on-site safety inspections, and the final safety inspection prior to issuance of the Certificate of Occupancy by the CBO. The Safety Monitor will be retained until cessation of construction and commissioning activities, and issuance of the Certificate of Occupancy, unless otherwise approved by the CPM.

The Safety Monitor(s) shall also:

- Correct any construction or commissioning problems that could pose a future danger to life or health, consulting with the CBO as necessary.
- After consultation with the CBO, have the authority to temporarily stop construction or commissioning activities involving possible safety violations or unsafe conditions that may pose an immediate or future danger to life or health, until the problem is resolved to the satisfaction of the Safety Monitor and CBO.

- Consult with the CBO to determine when construction may resume unless the problem is corrected immediately, and to the satisfaction of the Safety Monitor and/or CBO.
- Inform the CPM within 24 hours of any temporary halt in construction or commissioning activities.
- Be available to inspect the site whenever necessary in addition to the minimum weekly basis during construction and commissioning as determined in consultation with the CBO and CPM.
- Develop a safety program for the project that complies with Cal/OSHA & federal regulations related to power plant projects.
- Ensure that all federal and Cal/OSHA requirements are practiced during the construction and installation of all permanent structures (including safety aspects of electrical installations).
- Ensure that all construction and commissioning workers and supervisors receive adequate safety training.
- Conduct safety training (including fall protection, confined spaces, respiratory protection, hazard communication, etc.), or ensure that the project owner, union hall, and/or contractors conduct adequate safety training.
- Maintain all Material Safety Data Sheets, storage of all hazardous materials and all other required documentation for Cal/OSHA.
- Complete all accident and incident investigations, emergency response reports for injuries and inform the CPM of incidents.
- Ensure that all the plans identified in **WORKER SAFETY-1** are implemented.

The Safety Monitor shall be qualified regarding the following:

- Safety issues related to equipment, pipelines, etc,
- LORS applicable to workplace safety and worker protection
- Workplace hazards typically associated with power production
- Lock out tag out and confined spaces control systems
- Site security practices and issues

Verification: The project owner shall submit the Safety Monitor(s) resume(s) to the CPM for approval at least 30 days prior to site mobilization. One or more individuals may hold this position.

The Safety Monitor shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- Records of all employees trained for that month (all records shall be kept on site for the duration of the project);

- A summary report of safety management actions that occurred during the month;

- A report of any continuing or unresolved situations and incidents that may pose danger to life or health;

- Reports of accidents and injuries that occurred during the month.

This Page Left Intentionally Blank

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other topics of critical biological interest such as unique habitats. The review contained in the record describes the biological resources in the vicinity of the project site and linear alignments, assesses the potential for adverse impacts on biological resources, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards. That review is summarized below. The evidence presented was uncontested (1/25/05 RT 16-18; Ex. 1 Ch. 8.2, App. 8.2; Ex. 3 responses to first set of data req. nos. 8-26; Ex. 9 responses to second set of data req. nos. 72-78; Exs. 13, 25, 27, 30, 47).

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed REP and surrounding areas are mostly vernal pool grasslands, but some areas of the proposed site are being used for activities associated with construction of the Pleasant Grove Waste Water Treatment Plant (PGWWTP). The proposed REP is located on 40 acres that provide habitat for a variety of wildlife. Historically vernal pool fairy shrimp have been documented approximately one-mile northeast of the proposed REP and at the adjacent PGWWTP. Although the region is widely recognized for its vernal pool grasslands, other habitat types include annual grasslands and oak woodlands, seasonal wetlands, and riparian habitats. (Ex. 47, p. 4.2-3.)

Biological Resources Table 1 lists the wildlife and plant species of concern that were observed or have the potential to be present in the project area.

Biological Resources Table 1
Special Status Species Evaluated for REP

Scientific Name Common Name	Fed/State/DFG/CNPS*	Likelihood to Occur	Observed
Riparia riparia (nesting) Bank swallow	Threatened/-/-/-	Low	No
Falco peregrinus anatum (nesting) American peregrine falcon	Endangered/-/-/-	Low	No
Buteo swainsoni (nesting) Swainson's hawk	Threatened/-/-/-	High	Yes
Haliaeetus leucocephalus (nesting and wintering) Bald eagle	Endangered/-/-/-	Moderate	No
Charadrius montanus Mountain plover	Proposed/SC/-/-	Low	No
Grus canadensis tabida (nesting and wintering) Greater sandhill crane	Threatened/-/-/-	Moderate	No
Thamnophis gigas Giant garter snake	Threatened/Threatened/-/-	Low	No
Ambystoma californiense California tiger salamander	Candidate/SC/-/-	Low	No
Rana aurora draytoni California red-legged frog	Threatened/SC/-/-	Low	No
Oncorhynchus tshawytscha Central Valley spring-run chinook salmon	Threatened/Threatened/-/-	Low	No
Oncorhynchus tshawytscha Central Valley fall-run chinook salmon	Candidate/SC/-/-	Low	No
Oncorhynchus tshawytscha Winter-run chinook salmon	Endangered/Endangered/-/-	Low	No
Oncorhynchus mykiss Central Valley steelhead	Threatened/-/-/-	Low	No
Hypomesus transpacificus Delta smelt	Threatened/Threatened/-/-	Low	No

Pogonichtys macrolepidotus Sacramento splittail	Threatened/-/-/-	Low	No
Branchinecta lynchi Vernal pool fairy shrimp	Threatened/-/-/-	High	Yes
Lepidurus packardi Vernal pool tadpole shrimp	Endangered/-/-/-	High	No
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	Threatened/-/-/-	High	No
Gratiola heterosepala Boggs Lake hedge-hyssop	Endangered/-/-/1B	Low	No
Orcuttia viscida Sacramento orcutt grass	Endangered/Endangered/-/1B	Low	No
Perognathus inornatus inornaturs San Joaquin pocket mouse	SC/-/-/-	Low	No
Myotis thysanode Fringed Myotis	SC/-/-/-	Low	No
Eumops perotis californicus Greater western mastiff bat	SC/-/SC/-	Low	No
Myotis volan Long-legged Myotis	SC/-/-/-	Low	No
Myotis ciliolabrum Small-footed Myotis	SC/-/-/-	Moderate	No
Corynorhinus townsendii townsendii Townsend's western big-eared bat	SC/-/-/-	Moderate	No
Antrozous pallidus Pallid bat	-/-/SC/-	Moderate	No
Lasiurus blossevilii Red bat	-/-/Proposed/-	Moderate	No
Aquila chysaetos Golden eagle	-/-/Fully Protected/-	High	Yes
Agelaius tricolor (nesting colony) Tricolored blackbird	SC/-/SC/-	Moderate	No
Athene cunicularia hypugea Western burrowing owl	SC/-/SC/-	Moderate	No

Elanus leucurus (nesting) White-tailed kite	-/-/Fully Protected/-	High	Yes
Empidonax trailli brewsteri (nesting) Little willow flycatcher	SC/-/-/-	Moderate	No
Buteo regalis (wintering) Ferruginous hawk	SC/-/-/SC	High	Yes
Accipiter cooperi (nesting) Cooper's hawk	-/-/SC/-	High	No
Eremophila alpestris Horned lark	-/-/SC/-	High	Yes
Plegadis chihi White-faced ibis	SC/-/SC/-	Moderate	No
Phrynosoma coronatum frontale California horned lizard	SC/-/SC/-	Low	No
Clemmys marmorata Northwestern pond turtle	SC/-/SC/-	Moderate	No
Scaphiopus hammondii Western spadefoot	SC/-/SC/-	High	No
Lampetra ayresi River lamprey	SC/-/SC/-	Low	No
Lampetra tridenta Pacific lamprey	SC/-/-/-	Low	No
Acipenser medirostris Green sturgeon	SC/-/SC/-	Low	No
Spirinchus thaleichthys Longfin smelt	SC/-/SC/-	Low	No
Linderiella occidentalis California linderiella	SC/-/-/-	High	No
Legenere limosa Legenere	SC/-/-/1B	Moderate	No
Downingia pusilla Dwarf downingia	-/-/-/2	High	Yes
Balsamorhiza macrolepis macrolepis Big-scale balsamroot	-/-/-/1B	Moderate	No
Navarretia myersii myersii Pincushion navarretia	-/-/-/1B	Moderate	No
Cordylanthus mollis hispidus Hispid bird's beak	SC/-/-/1B	Moderate	No
Sagittaria sanfordii *Sanford's* arrowhead	SC/-/-/1B	Low	No

Juglans califonica hindsii Northern California black walnut	SC/-/-/1B	High	Yes
Juncus leiospermus leiospermus Red Bluff dwarf rush	-/-/-/1B	Moderate	No

***Federal/State/DFG/CNPS** Status Abbreviations: Endangered=species threatened with extinction, Threatened=species likely to become endangered, Candidate=Candidate for listing, SC= Species of Special Concern, Fully protected=provides additional protection to animals that are rare or threatened with extinction. California Native Plant Society (CNPS): 1B=Rare or endangered in California and elsewhere, 2=Rare or endangered in California, more common elsewhere. •= Surveys not conducted, assumed presence. (-) = No special status listing. (Ex. 47, pp. 4.2-4 – 4.2-7.)

The region is characterized by rapid growth, resulting in fragmentation of wildlife habitat. In addition, the U. S. Fish and Wildlife Service (USFWS) recently designated 32,134 acres in Placer County as critical habitat for vernal pool species. The West Placer Unit contains 70 percent of remaining vernal pools in Placer County. (Ex. 47, pp. 4.2-8 – 4.2-15.)

Historically vernal pool fairy shrimp have been documented approximately one-mile northeast of the proposed REP and at the adjacent PGWWTP. In addition, the proposed REP provides suitable habitat to support other sensitive plants and animals. Of primary concern is the potential for construction and operation activities associated with the proposed REP to cause take of sensitive biological resources, and the degradation, loss and fragmentation of biological communities.

Biological resources surveys were conducted by RE during July and August 2003. Other biological resources surveys of the proposed REP and adjacent areas were conducted for a previously proposed power plant. Additional sampling for vernal pool branchiopods was conducted in the Fall of 2003. Results of dry season branchiopod surveys showed that *Branchinecta* sp. cysts were present in some pools located on the site and adjacent areas. Vernal pool fairy shrimp presence (*Branchinecta lynchi*) was confirmed during wet season presence/absence surveys conducted in December 2003 and February 2004.

Swainson's hawks, northern harriers, and white-tailed kites have been observed foraging at the proposed site.

Although some of the proposed REP at the southern end is disturbed, most of the proposed site, and some adjacent areas are vernal pool grassland habitat designated by the USFWS as critical habitat for the vernal pool fairy shrimp, vernal pools/swales and adjacent vernal pool grasslands. CEC Staff concluded constructing the power plant footprint, offices, and parking areas would cause degradation, loss and fragmentation of vernal pools/swales and adjacent vernal pool grasslands vernal pool fairy shrimp habitat. Take of vernal pool fairy shrimp would be likely. In addition, lighting associated with the power plant could attract birds resulting in collisions with project infrastructure. (*Ibid.*)

1. Constructing the office and parking areas would permanently remove features of the vernal pool landscape affecting the topography and hydrology of the site. Constructing and operating the REP would reduce the value of the vernal pool grassland ecosystem. The wetted and vernal pool grassland portions are both necessary for a healthy and functional vernal pool ecosystem. In addition to direct and indirect adverse impacts to vernal pool fairy shrimp and vernal pool fairy shrimp habitat, other sensitive species protected under the federal/state endangered species acts could be affected by construction and operation of the project.

Vernal pools in California tend to occur in clusters called complexes. A landscape that supports a vernal pool complex is typically grassland (vernal pool grasslands) with areas of obstructed drainage that form pools (Federal Register 2003). Maintaining the integrity of vernal pool grasslands influences not only the hydrology of vernal pools but also the likelihood of maintaining some characteristic pool fauna and interactions among species. Vernal pool grassland habitat adjacent to, and within, a vernal pool complex, is essential to the hydrological and biological integrity of the complex.

Besides supporting the wetland component of the vernal pool grassland ecosystem, vernal pool grasslands are essential to the health of vernal pool grasslands and wildlife populations. Vernal pool grasslands provide important foraging, roosting, and breeding habitat for raptors, waterfowl, shorebirds, and passerines. Migrating waterfowl and shorebirds using vernal pool grasslands, transport dormant seeds and eggs of vernal pool organisms from one location or region to another. These types of interactions help the exchange of genetic information necessary to maintain healthy biological resource populations within vernal pool grasslands. As habitat is lost and fragmented, the exchange of genetic information between populations becomes increasingly difficult. Lack of genetic diversity can lead to population crashes and extinction.

RE indicated that 6.9 acres of raptor foraging habitat would be permanently affected by grading and filling for the proposed power plant footprint and switchyard. RE also indicated that grading and gravelling other areas for use as office space and parking areas would temporarily affect another 4.1 acres of annual grasslands. (*Ibid.*)

Constructing the natural gas pipelines would disturb up to 14.1 acres depending upon the route constructed. Constructing and operating the REP would also cause the degradation, loss and fragmentation of vernal pool grassland foraging habitat used by a variety of wildlife, including the Swainson's hawk. (Ex. 4.2-15 – 4.2-17.)

CEC Staff concluded that impacts to vernal pool grasslands associated with construction of the proposed REP construction office/parking areas are not temporary. Proposed construction and operation activities associated with the office space and parking areas would have direct, indirect, and cumulative adverse impacts to vernal pool grassland habitat. Biological Resources

Condition of Certification **BIO-13, BIO-14** and **BIO-15** will mitigate potential vernal pool grassland impacts to levels less than significant.

The proposed REP and adjacent areas are within USFWS designated critical habitat for the vernal pool fairy shrimp. The REP is included in Unit 12 (West Placer Unit includes portions of the cities of Citrus Heights, Gold Hill, Lincoln, Pleasant Grove, Rio Linda, Rocklin, Roseville, and Sheridan). The main species of concern for Unit 12 is the vernal pool fairy shrimp.

Staff considered the REP and 70-acre City parcel to be vernal pool fairy shrimp habitat because the REP and adjacent 70-acre City property are hydrologically connected vernal pool grassland habitat. There are historical records of vernal pool fairy shrimp documented close to the proposed project site (at the PGWWTP and north of the REP).

Staff concluded that constructing and operating the proposed REP would result in vernal pool fairy shrimp habitat degradation, loss and fragmentation. Grading and filling activities proposed for the REP power plant footprint, office, and parking areas and would cause direct adverse impacts to 0.5 wetted acres of vernal pool fairy shrimp habitat, and indirect adverse impacts to 2.5 wetted acres of vernal pool fairy shrimp habitat. Construction of the pipeline within this open-space area would impact vernal pool grasslands, riparian areas and would require crossings of Curry and Kaseberg Creeks. (*Ibid.*)

Constructing the alternative A natural gas pipeline would have a direct adverse impact on 1.6 acres of vernal pool grassland habitat (excluding wetted acres). Vernal pool grassland ecosystems provide habitat for a variety of sensitive wildlife species.

Adverse impacts to biological resources would be caused by construction of the switchyard. Conditions of Certification **BIO-13, BIO-14** and **BIO-15** mitigate

potential impacts to levels less than significant. RE indicated that the transmission line towers would be constructed using Public Utilities Commission (PUC) rules for overhead line construction. Staff reviewed the proposed tower designs and concluded that the proposed towers would meet Avian Power Line Interaction Committee (APLIC) standards for preventing bird electrocutions (APLIC 1996) and that bird electrocutions are unlikely.

CEC Staff also assessed the potential for bird collisions with the proposed REP transmission line. The transmission line would be constructed within the proposed REP switchyard with towers approximately 65 feet tall. These towers would be the tallest structures associated with the REP transmission line. Avian collisions with these structures are possible; however, a height of 65 feet is considered relatively low risk for bird collisions. Raptors have been observed foraging over the proposed site, but it does not appear to be in the flight path of migratory birds. Because the proposed transmission line would be constructed to APLIC standards for preventing bird electrocutions, staff concluded that the proposed transmission line would not pose a significant risk of electrocution to birds in the proposed project area and that the proposed transmission line does not pose a significant collision hazard to birds in the proposed project area. (Ex. 47, pp. 4.2-17 – 4.2-21.)

RE proposes 800 feet of sanitary sewer pipeline to connect the proposed project to the PGWWTP lift station. The proposed pipeline would traverse mostly disturbed areas; however, a federally designated habitat area would be directly affected by pipeline construction. Biological Resources Conditions of Certification **BIO-13, BIO-14** and **BIO-15** reduce impacts to less than significant. (Ex. 47, Biological Res. Fig. 1, Wet 35.)

RE proposed a 720-foot stormwater outfall as part of the proposed project. The discharge end of the outfall would adversely affect an unnamed tributary to

Pleasant Grove Creek. Conditions of Certification **BIO-8, BIO-9, BIO-11**, **BIO-13**, **BIO-14** and **BIO-15** to reduce impacts to levels less than significant.

RE has proposed general mitigation measures for potential impacts to Central Valley steelhead, Chinook salmon, vernal pool crustaceans, dwarf downingia, western spadefoot, Swainson's hawk, and white-tailed kite. In addition, RE proposed habitat compensation for potential impacts to vernal pool fairy shrimp habitat, Swainson's hawk and white-tailed kite. (*Ibid.*)

Some vernal pool impacts in Placer County have been mitigated by buying credits in a mitigation bank. Development projects in Placer County have exhausted the supply of vernal pool bank credits. No new vernal pool mitigation banks are planned for Placer County. The USFWS and USACE sometimes allow impacts to vernal pool fairy shrimp and vernal pools (respectively) to be mitigated through in-lieu fee programs if there are no other viable options. RE proposes to pay into the USFWS species fund to mitigate impacts to wetted vernal pool fairy shrimp/habitat.

Constructing and operating the REP would also cause the degradation, loss and fragmentation of vernal pool grassland foraging habitat used by a variety of wildlife, including the Swainson's hawk. There are two active Swainson's hawk nests within the Pleasant Grove Creek riparian area. The nests are within approximately two miles of the proposed REP. (*Ibid.*)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find and conclude as follows:

1. The measures specified in the Conditions of Certification will adequately mitigate the potential direct, indirect, and cumulative adverse effects of the REP upon biological resources to a less than significant level.
2. With the implementation of the mitigation measures contained in the Conditions of Certification, the project will conform to all applicable laws, ordinances, regulations, and standards governing biological resources.

We therefore conclude that implementation of the Conditions of Certification below will ensure that construction and operation of the REP project will not create any significant direct, indirect, or cumulative adverse impacts to biological resources, and that the project will conform with all applicable laws, ordinances, regulations, and standards relating to biological resources as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-1 The project owner shall submit the resume, including contact information, of the proposed Designated Biologist and Biological Monitors to the CPM for approval.

Verification: The project owner shall submit the specified information at least 60 days prior to the start of any site (or related facilities) mobilization. Site and related facility activities shall not commence until an approved Designated Biologist and Biological Monitors are available to be on site.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. At least one year of field experience with biological resources found in or near the project area; and

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist.

Designated Biologist Duties

BIO-2 The project owner shall ensure that the Designated Biologist and Biological Monitors shall perform the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification;
2. Be available to supervise or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as wetlands and special status species or their habitat;
3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
4. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for animals in harms way;
5. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification; and
6. Respond directly to inquiries of the CPM regarding biological resource issues.
7. The Designated Biologist will accept responsibility for inspections performed by Biological Monitors.

Verification: The project owner shall ensure that the Designated Biologist maintains written records of the tasks described above, and summaries of these records shall be submitted in the Monthly Compliance Reports.

During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

Designated Biologist Authority

BIO-3 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist to ensure conformance with the biological resources Conditions of Certification.

Protocol: If required by the Designated Biologist, the project owner's Construction/ Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be adverse impact to biological resources if the activities continued;

2. Inform the project owner and the Construction/Operation Manager when to resume activities; and
3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

Verification: The project owner shall ensure that the Designated Biologist notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-4 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project. The training may be presented in the form of a video.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures;
5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM two (2) copies of the WEAP and all supporting written materials prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

The signed training acknowledgement forms shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-5 The project owner shall submit two copies of the proposed BRMIMP to the CPM (for review and approval) and to CDFG and USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP.

The final BRMIMP shall identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources Conditions of Certification identified in the Commission's Final Decision;
3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. All biological resources mitigation, monitoring and compliance measures required in other state agency terms and conditions, such as those provided in the CDFG Incidental Take Permit and Streambed Alteration Agreement and Regional Water Quality Control Board permits;
5. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;
6. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;

7. All required mitigation measures for each sensitive biological resource;
8. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;
9. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
10. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
11. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities - one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen;
12. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
13. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
14. All performance standards and remedial measures to be implemented if performance standards are not met;
15. A discussion of biological resources related facility closure measures;
16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
17. A copy of all biological resources permits obtained.

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

The CPM, in consultation with the CDFG, the USFWS and any other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval.

Any changes to the approved BRMIMP must also be approved by the CPM in consultation with CDFG, the USFWS and appropriate agencies to ensure no conflicts exist.

Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all

modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Closure Plan Measures

BIO-6 The project owner shall incorporate into the permanent or unexpected permanent closure plan, and the BRMIMP, measures that address the local biological resources.

The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures (typical measures are):

1. Removal of transmission conductors when they are no longer used and useful;
2. Removal of all power plant site facilities and related facilities;
3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and
4. Revegetation of the plant site and other disturbed areas utilizing appropriate seed mixture.

Verification: At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure, which is incorporated into the BRMIMP, in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

BIO-7 DELETED

Streambed Alteration Agreement

BIO-8 The project owner shall acquire a Streambed Alteration Agreement from the CDFG (per Section 1600 of the Fish and Game Code), and incorporate the biological resource related terms and conditions into the project’s BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the final CDFG Streambed Alteration Agreement.

Regional Water Quality Control Board Certification

BIO-9 The project owner shall acquire the Regional Water Quality Control Board Section 401 state Clean Water Act certification, and incorporate the biological resource related terms and conditions into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall provide the CPM with a copy of the final Regional Water Quality Control Board's certification.

Federal Biological Opinion

BIO-10 The project owner shall provide final copies of the Biological Opinion per Section 7 of the federal Endangered Species Act obtained from the U. S. Fish and Wildlife Service. The terms and conditions contained in the Biological Opinion shall be incorporated into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the U. S. Fish and Wildlife Service's Biological Opinion.

U. S. Army Corps of Engineers Section 404 Permit

BIO-11 The project owner shall provide a final copy of the U.S. Army Corps of Engineers Section 404 of the federal Clean Water Act permit. The biological resources related terms and conditions contained in the permit shall be incorporated into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall submit to the CPM a copy of the U.S. Army Corps of Engineers permit.

Construction Mitigation Management to Avoid Harassment or Harm

BIO-12 The project owner shall manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources.

Typical measures are:

1. Temporarily fence, cover or provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS and CDFG;
2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited;
3. Prohibit non-security related firearms or weapons from being brought to the site;
4. Prohibit pets from being brought to the site; and
5. Report all inadvertent deaths of sensitive species to the appropriate project representative. Injured animals shall be reported to CDFG

and the project owner shall follow instructions that are provided by CDFG.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and supplied to the CPM no less than 30 days prior to site mobilization.

Habitat Compensation (Vernal Pool Ecosystem), Alternative A

BIO-13 To compensate for direct, indirect, and cumulative impacts to the vernal pool ecosystem (vernal pool grasslands, vernal pools, vernal pool fairy shrimp and its habitat, and seasonal wetlands) the project owner shall preserve at least 14.1 acres of vernal pool grassland habitat suitable for vernal pool fairy shrimp and other sensitive species affected by the project. In addition, the project owner shall preserve at least 6.5 acres of vernal pools/swales within the same parcel and in addition to the 14.1 acres of vernal pool grasslands for a total of 20.6 acres. To comply with this requirement the project owner may 1) preserve grassland habitat which contains vernal pools, 2) six months after a good faith effort to locate high quality vernal pool grassland ecosystem habitat, the project owner shall participate in the in-lieu fund program administered by the USFWS for vernal pool fairy shrimp habitat; or 3) both preserve vernal pool grassland and vernal pool acreage together as vernal pool grassland ecosystem and participate in the in-lieu fund program complying with section 2).

Verification: Within 90 days of the Commission Decision, the project owner shall enter into an agreement with the Center for Natural Land Management (CLNM) or other suitable land management organization to seek to locate and preserve (if sufficient habitat has not already been located and preserved) and manage the grassland and vernal pool habitat required by this Condition. The project owner shall pay all costs incurred by the CNLM or other suitable land management organization resulting from the locating, preservation (if sufficient habitat has not already been located and preserved) and managing the compensation habitat required under this Condition. The project owner shall provide a copy of the agreement to the CPM. After the habitat has been secured, the project owner shall provide proof that the habitat is appropriate mitigation, has been preserved in perpetuity, that a suitable endowment (derived through a PAR or other suitable analysis) has been provided to manage the habitat in perpetuity, and the name of the non-profit organization designated as manager of the habitat. No more than 90 days from the date of habitat acquisition, the project owner shall also provide a habitat management plan to the CPM, CDFG, and USFWS for review and approval. All documents are to be included in the BRMIMP.

If sufficient habitat is not secured within six months from the date of the Commission decision, the project owner shall provide to the CPM, copies of the check made out to the USFWS and documentation indicating USFWS

acceptance of the amount to compensate via the in-lieu fund for the amount of wetted acres not otherwise preserved.

This Page Left Intentionally Blank

B. CULTURAL RESOURCES

The potential for impacts to cultural resources is related to whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic pertains to the structural and cultural evidence of human development in the project vicinity, and appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Resources Code, § 5024.1; Cal. Code of Regs., tit. 14 § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. Since there is often a five year lag between resource evaluation and the date that eligibility is decided, cultural resources specialists may use 45 years as a criterion for considering potential eligibility.

Although a degree of uncertainty existed in this discipline in the Final Staff Assessment, these matters had been resolved and the evidence presented at the evidentiary hearing was uncontroverted. (1/25/05 RT 18-20; Exs. 32, 3 responses to first data req. Nos. 27-38, 9 responses to 2nd data req. nos. 79-82, 20, 47.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The REP project is situated adjacent to and north of the Pleasant Grove Waste Water Treatment Plant and is proposed to be located on an 8.9-acre site within a 40-acre parcel owned by the City of Roseville. The project site consists of relatively flat terrain between Phillip Road and Pleasant Grove Creek. The project site is within the area of the Nisenan or sometimes referred to as the Southern Maidu. The Nisenan, who were food gatherers as well as hunters and fishermen, occupied the area but also traded with valley groups and the Washo. Spanish exploration and settlement occurred in this area in the early 1800s with fur trappers, gold miners, and others also traversing and settling in the region. (Ex. 47, pp. 4.3-6 to 4.3-7.)

Sheep ranching quickly became the dominant business during the mid 1860s and 1870s with ranchers owning large tracts of land. The completion of the transcontinental railroad in 1864 provided transport for the ranch products to the markets to the east, and Roseville became a major shipping and trading center, becoming the largest freight yards west of the Mississippi by the 1920s. The Fiddyment Ranch became one of the largest agricultural/ranching enterprises in the area and has operated for over 125 years. (Ex. 47, p. 4.3-7.)

The Applicant conducted a literature search for a half-mile area around the project site and the linear facility routes. Seventeen cultural resource surveys had been conducted within this area since 1979 with nineteen resources having been recorded as a result of the surveys. The Applicant also consulted lists of historic resources maintained by local municipalities; local historical and archeological societies were contacted regarding their knowledge of local resources. Additionally, portions of the natural gas pipeline were inventoried by pedestrian survey. No new resources were discovered as a result of the survey; and no archeological resources were identified. (Exs. 1; Ex. 47, pp. 4.3-7 to 4.3-9.)

The evidence shows that PG&E does not intend to route the pipeline so that it would interfere with any dwellings. Condition **CUL-6** requires notification if known resources would be impacted in a previously unanticipated manner. (Ex. 47, p. 4.3-25.)

Although the project is not expected to adversely impact cultural resources, full-time monitoring by an archaeologist during initial construction activities will ensure that any cultural resources encountered will be identified and evaluated before significant impacts can occur. In the event of an unanticipated discovery, implementation of Conditions of Certification **CUL-1** through **CUL-7** will reduce impacts to any archaeological resource identified to a level of insignificance, and the mitigation measures contained in the Conditions of Certification will ensure that all potential impacts are rendered less than significant. (Ex. 47, pp. 4.3-20 to 4.3-27.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. No known cultural resources exist in the general project area.
2. Construction activities associated with the REP project and related facilities present the greatest potential for adverse impacts to cultural resources.
3. The potential for impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.
4. The project owner will obtain the services of a Native American monitor to observe ground disturbance activities in areas where Native American artifacts are discovered.
5. The project owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered.

6. The potential for cumulative impacts to cultural resources is insignificant.

7. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

The Commission therefore concludes that with implementation of the Conditions of Certification below, the project will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance, the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternates, if alternates are needed, to manage all monitoring, mitigation and curation activities. The CRS may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation and curation activities. The project owner shall ensure that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR). No ground disturbance shall occur prior to CPM approval of the CRS, unless specifically approved by the CPM. The CRS will be accepted on a provisional basis until the CRMMP required in Cul-3 is approved. Approval of a CRS may be denied or revoked for non compliance on this or other projects.

CULTURAL RESOURCES SPECIALIST

The resume for the CRS and alternate(s) shall include information demonstrating that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published in the Code of Federal Regulations, 36 CFR Part 61 are met. In addition, the CRS shall have the following qualifications:

1. The technical specialty of the CRS shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history or a related field; and

2. At least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California.

Verification: The resume of the CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS on referenced projects,

and shall demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during ground disturbance, grading, construction and operation. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed CRS or alternate has the appropriate training and background to effectively implement the conditions of certification.

CULTURAL RESOURCES MONITOR

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or

2. an AS or AA degree in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or

3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialists, e.g. historic archeologist, historian, architectural historian, physical anthropologist shall be submitted to the CPM for approval.

Verification: The project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval at least 45 days prior to the start of ground disturbance.

At least 10 days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval.

At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resource monitoring required by this condition. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRM, at least five days prior to the CRM beginning on-site duties. At least 10 days prior to beginning tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for on-site work and is prepared to implement the cultural resources conditions of certification.

CUL-2 Prior to the start of ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review submittals and in consultation with the CRS approve those that are appropriate for use in cultural resources planning activities.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless specifically approved by the CPM

Verification:

1. The project owner shall submit the subject maps and drawings at least 40 days prior to the start of ground disturbance. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.
2. If there are changes to any project related footprint, revised maps and drawings shall be provided at least 15 days prior to start of ground disturbance for those changes.
3. If project construction is phased owner shall submit the subject maps and drawings, if not previously provided, 15 days prior to each phase.
4. A current schedule of anticipated project activity shall be provided to the CRS on a weekly basis during ground disturbance and also provided in each Monthly Compliance Report (MCR).
5. The project owner shall provide written notice of any changes to scheduling of construction phases within five days of identifying the changes.

CUL- 3 Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or its preparation overseen by the CRS, to the CPM for approval. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures.

2. A proposed research design that includes a discussion of research questions and testable hypotheses applicable to the project area. A refined research design will be prepared for any resource where data recovery is required. A programmatic treatment plan may be included in the CRMMP for limited resources types.
3. The following statement shall be added to the Introduction: Any discussion, summary, or paraphrasing of the conditions in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. If there appears to be a discrepancy between the conditions and the way in which they have been summarized, described, or interpreted in the CRMMP, the conditions, as written in the Final Decision, supercede any interpretation of the conditions in the CRMMP. (The Cultural Resources Conditions of Certification shall be attached as an appendix.)
4. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases of the project.
5. Identification of the person(s) expected to perform each of the tasks, their responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.
6. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.
7. A discussion of all avoidance measures (such as flagging or fencing), to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address how these measures would be implemented prior to the start of construction

and how long they would be needed to protect the resources from project-related effects.

8. A discussion of the requirement that all cultural resources encountered shall be recorded on a DPR form 523 and mapped (may include photos). In addition, all archaeological materials collected as a result of the archaeological investigations (survey, testing, data recovery) shall be curated as specified in the CRMIMP and in accordance with The State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Federal Code of Regulations, Part 79.

9. A discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding shall be met. If archaeological materials are to be curated, the name and phone number of the contact person at the institution. This shall include information indicating that the project owner will pay all curation fees and state that any agreements concerning curation will be retained and available for audit for the life of the project.

9. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

10. A discussion of the proposed Cultural Resource Report (CRR) which shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines.

Verification: The project owner shall submit the subject CRMMP at least 30 days prior to the start of ground disturbance. Per ARMR Guidelines the author's name shall appear on the title page of the CRMMP. Ground disturbance activities may not commence until the CRMMP is approved, unless specifically approved by the CPM. A letter shall be provided to the CPM indicating that the project owner would pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by the CRS and shall be provided in the ARMR format. The CRR shall report on all field activities including dates, times and locations, findings, samplings and analysis. All survey reports, Department of Parks and Recreation (DPR) 523 forms and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO)

shall be included as an appendix to the CRR. If the ARMR reports have previously been sent to the CHRIS, then receipt letters from the CHRIS shall be included in an appendix.

Verification: The project owner shall submit the subject CRR within 90 days after completion of ground disturbance (including landscaping). Within 10 days after CPM approval, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the SHPO, the CHRIS and the curating institution (if archaeological materials were collected).

CUL-5 Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment. The training shall be conducted by the CRS and may be presented in the form of a video. The CRS shall be available (telephone or in person) to answer questions posed by employees. The CRS shall provide a draft of the training text and graphics to the CPM for review and approval. The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. Information that the CRS, alternate CRS, and CRMs have the authority to halt construction to the degree necessary, as determined by the CRS, in the event of a discovery or unanticipated impact to a cultural resource;
4. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery, and shall contact their supervisor and the CRS or CRM; and that redirection of work would be determined by the construction supervisor and the CRS;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. An acknowledgement form signed by each worker indicating that they have received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless specifically approved by the CPM.

Verification: Thirty days prior to the beginning of site mobilization, the project owner shall provide the CRS draft text and graphics for the training program. The project owner shall provide in the Monthly Compliance Report the WEAP Certification of Completion form of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor ground disturbance full time in the vicinity of the project site, linears and ground disturbance at laydown areas or other ancillary areas to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter or e-mail providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

The CRS and the project owner shall notify the CPM by telephone or e-mail of any incidents of non-compliance with the conditions of certification and/or applicable LORS upon becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions of certification.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored.

During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter or e-mail identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval. Documentation justifying a reduced level of monitoring shall be submitted to the CPM at least 24 hours prior to the date of planned reduction in monitoring.

During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. Copies of daily logs shall be retained and made available for audit by the CPM.

Within 24 hours of recognition of a non-compliance issue with the conditions of certification and/or applicable LORS, the CRS and the project owner shall notify

the CPM by telephone of the problem and of steps being taken to resolve the problem. The telephone call shall be followed by an e-mail or fax detailing the non-compliance issue and the measures necessary to achieve resolution of the issue. Daily logs shall include forms detailing any instances of non-compliance. In the event of any non-compliance issue, a report written no sooner than two weeks after resolution of the issue that describes the issue, resolution of the issue and the effectiveness or the resolution measures, shall be provided in the next MCR.

Verification: One week prior to ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. The project owner shall also provide a plan identifying the proposed monitoring schedule and information explaining how Native Americans who wish to provide comments will be allowed to comment. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

CUL-7 The project owner shall grant authority to halt construction to the CRS, alternate CRS and the CRMs in the event previously unknown cultural resource sites or materials are encountered, or if known resources may be impacted in a previously unanticipated manner (discovery). Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources are found or impacts can be anticipated, construction shall be the halted or redirected and shall remain halted or redirected until all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of eligibility and recommendations for mitigation of any cultural resources discoveries whether or not a determination of significance has been made.
2. The CRS and the project owner have consulted with the CPM and the CPM has concurred with the recommended eligibility of the discovery and proposed data recovery or other mitigation; and
3. Any necessary data recovery and mitigation has been completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS and CRMs have the authority to halt construction activities in the vicinity of a cultural resource discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

C. GEOLOGY AND PALEONTOLOGY

This section reviews the Project's potential impacts on significant geological and paleontological resources. It also evaluates whether Project-related activities could result in exposure to geological hazards, whether the facility can be designed and constructed to avoid any such hazards, and whether geological or mineralogical resources are present. The analysis of record also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present. The evidence on this topic was undisputed. (1/25/05 RT 36-37; Ex. 1, §§ 8.4, 8.8, and Appendix 8.8-A; Ex. 45; Ex. 47, p. 5.2-1 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The REP site is located in the lower Sacramento Valley, which is a subdivision of the Great Valley geomorphic province. This area is characterized by broad lowlands bounded by highly deformed rock units of the Coast Range to the west and the gently sloping western foothills of the Sierra Nevada Mountains to the east. Exploration of the site by Applicant's consultants indicated that subsurface soils generally consist of medium dense to dense silty/clayey sand and stiff to hard sandy silt, silt, and silty clay. Perched ground water was present immediately south of the site at a depth between four to six feet below existing ground elevations, while static ground water south of the site was measured at a depth of 66 feet below existing ground elevations. (Ex. 1, § 8.4.1.3; Ex. 47, pp. 5.2-1 and 5.2-2.)

Seismicity represents the main geological hazard at the Project site. However, the Project site is in a seismically stable area. The closest known Holocene (active) faults are associated with the Foothills Fault System located approximately 16 miles from the site and the Concord-Green Valley fault located approximately 60 miles from the site. (Ex. 1, § 8.4.1.4.) The evidentiary record indicates that in the event of an earthquake, the potential risk is considered "low"

for dynamic compaction of soils, ground rupture, hydrocollapse, subsidence, and landslides beneath or adjacent to Project components. (*Id*. at § 8.4.1.5; Ex. 47, pp. 5.2-3 through 5.2-5.)

Staff was concerned, however, about the potential risk of severe liquefaction and/or expansive soils that could occur in a seismic event. To ensure that additional exploration and analyses of these geological hazards are included in design and construction of the REP, the Project Owner must comply with the requirements of Condition of Certification **GEO-1**. In addition, since the REP is located in Seismic Zone 3 as designated by the California Building Code (CBC), the generating facility and all associated linear facilities must be constructed in accordance with CBC standards on seismic design. Conditions **GEN-1**, **GEN-5** and **CIVIL-1** in the **Facility Design** section of this Decision require the Project Owner to submit the appropriate design calculations and specifications, the soil erosion control plan, and the required CBC geotechnical reports for approval before Project construction.

The evidentiary record indicates that there are no identified geological or mineralogical resources of recreational or scientific value in the Project vicinity. (Ex. 47, p. 5.2-5.)

The Riverbank Formation, which underlies the majority of the Project site, has been assigned a “high” sensitivity rating for potential paleontological resources. Although no significant fossil fragments were observed by Applicant’s consultants at the REP site, evidence of paleobotanical fossils has been exposed in previous trenching operations near the site. Exposures of potentially fossiliferous sedimentary deposits were also identified in areas where streams had incised into the alluvial surface. The presence of previously recorded vertebrate fossil sites in deposits of similar ages suggests a high potential for additional similar fossil remains to be uncovered by Project-related excavations. (Ex. 1, § 8.8.1.4 et seq., Appendix 8.8-A; Ex. 47, p. 5.2-5.) Applicant noted, however, that half of

the area along the natural gas pipeline is currently developed city and residential with minimal to no exposure of the original ground surface. (Ex. 1, p. 8.8-3.)

To ensure that any potential impacts to paleontological resources encountered during excavation and construction will be mitigated to insignificant levels, Conditions of Certification **PAL-1** through **PAL-7** require the Project Owner to implement a Paleontological Resources Monitoring and Mitigation Plan and to employ an on-site Paleontological Resource Specialist to monitor activities and provide worker education.

FINDINGS AND CONCLUSIONS

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

1. The Project is located in Seismic Zone 3.
2. The Project will be designed to withstand earthquake shaking in accordance with the requirements for Seismic Zone 3 established in the applicable California Building Code.
3. There are no known significant geological or mineralogical resources in the Project area.
4. The Project area and portions of the linear facilities corridors have a high sensitivity for paleontological resources.
5. Implementation of the Conditions of Certification will ensure that activities associated with construction and operation of the Project will cause no significant adverse impacts to geological or paleontological resources.
6. The Conditions of Certification are sufficient to ensure that the Project complies with all applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

We therefore conclude that the Project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineralogical, or paleontological resources.

CONDITIONS OF CERTIFICATION

General Conditions of Certification with respect to Geology are covered under Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **Facility Design** section, and include **GEO-1** below. Paleontological Conditions of Certification follow.

GEO-1 The Soils Engineering Report required by the 2001 CBC Appendix Chapter 33, Section 3309.5 Soils Engineering Report, should specifically include data regarding the liquefaction potential and expansion potential of the site soils. The liquefaction analysis shall be implemented by following the recommended procedures contained in *Recommended Procedures for Implementation of California Division of Mines and Geology Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* dated March 1999.

Verification: The Project Owner shall include in the application for a grading permit a copy of the Soils Engineering Report which describes the collapse, expansion, and liquefaction potential of the site foundation soils and a summary of how the results of the analyses were incorporated into the Project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.

PAL-1 The Project Owner shall provide the Compliance Project Manager (CPM) with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of Project mitigation and submittal of the Paleontological Resources Report, the Project Owner shall obtain CPM approval of the replacement PRS. The Project Owner shall submit to the CPM to keep on file, resumes of the qualified Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resumes of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. institutional affiliations, appropriate credentials and college degree,
2. ability to recognize and collect fossils in the field;
3. local geological and biostratigraphic expertise;

4. proficiency in identifying vertebrate and invertebrate fossils and;
5. at least three years of paleontological resource mitigation and field experience in California, and at least one year of experience leading paleontological resource mitigation and field activities.

The Project Owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the Project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year experience monitoring in California; or
- AS or AA in geology, paleontology or biology and four years experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: (1) At least 60 days prior to the start of ground disturbance, the Project Owner shall submit a resume and statement of availability of its designated PRS for on-site work.

(2) At least 20 days prior to ground disturbance, the PRS or Project Owner shall provide a letter with resumes naming anticipated monitors for the Project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the Project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

(3) Prior to the termination or release of a PRS, the Project Owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The Project Owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the Project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the Project Owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings shall show the location, depth, and extent of all ground disturbances and should be of such as scale to allow the PRS to determine and map fossil occurrences. If the footprint of the power plant or linear facility changes, the Project Owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the Project will proceed in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each Project phase shall be provided to the PRS and CPM. Prior to work commencing on affected phases, the Project Owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the Project Owner shall ensure that the PRS or PRM consults weekly with the Project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification: (1) At least 30 days prior to the start of ground disturbance, the Project Owner shall provide the maps and drawings to the PRS and CPM.

(2) If there are changes to the footprint of the Project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to implementing the change.

(3) If there are changes to the scheduling of the construction phases, the Project Owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 The Project Owner shall ensure that the PRS prepares, and the Project Owner submits to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the Project Owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of Project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;

3. A thorough discussion of the anticipated geological units expected to be encountered, the location and depth of the units relative to the Project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. A discussion of the locations of where the monitoring of Project construction activities is deemed necessary, and a proposed schedule for the monitoring and sampling;
5. A discussion of the procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
6. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
7. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontology standards and requirements for the curation of paleontological resources;
8. Identification of the institution that based on pre-field discussions, may be willing to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and
9. A copy of the paleontological Conditions of Certification.

Verification: At least 30 days prior to ground disturbance, the Project Owner shall provide two copies of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the Project Owner evidenced by a signature.

PAL-4 Prior to ground disturbance and for the duration of construction, the Project Owner and the PRS shall prepare and conduct weekly CPM-approved training for all recently employed Project managers, construction supervisors and workers who are involved with or operate ground disturbing equipment or tools and who have not previously had the training. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the Project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and

importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils shall be provided for Project sites containing units of high sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: (1) At least 30 days prior to ground disturbance, the Project Owner shall submit two copies of the proposed WEAP including the brochure with the set of reporting procedures the workers are to follow.

(2) At least 30 days prior to ground disturbance, the Project Owner shall submit the script and final video to the CPM for approval if the Project Owner is planning on using a video for interim training.

(3) If an alternate paleontological trainer is requested by the Project Owner, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of the alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

(4) In the Monthly Compliance Report (MCR) the Project Owner shall provide copies of the WEAP Certification of Completion forms with the names of those trained and the trainer or type of training offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 The Project Owner shall ensure that the PRS and PRM(s) monitor consistently with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potentially fossil-bearing materials have been identified. In the event that the PRS determines full time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the Project Owner shall notify and seek the concurrence of the CPM.

The Project Owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction in the immediate vicinity of the find if paleontological resources are encountered. The Project Owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring different from the accepted program presented in the PRMMP shall be proposed in a letter or email from the PRS and the Project Owner to the CPM prior to the change in monitoring. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.
2. The Project Owner shall ensure that the PRM(s) keeps a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The Project Owner shall ensure that the PRS immediately notifies the CPM of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.
4. For any significant paleontological resources encountered, either the Project Owner or the PRS shall notify the CPM immediately (no later than the following morning after the find, or Monday morning in the case of a weekend) of any halt of construction activities.

The Project Owner shall ensure that the PRS prepares a summary of the monitoring and other paleontological activities that will be placed in the Monthly Compliance Reports (MCR). The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities and general locations of excavations, grading, etc. A section of the report shall include the geological units or subunits encountered; descriptions of sampling within each unit; and a list of identified fossils. A final section of the report shall address any issues or concerns about the Project relating to paleontologic monitoring including any incidents of non-compliance and any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: The Project Owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The Project Owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the Project construction.

Verification: The Project Owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The Project Owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resource Report (See **PAL-7**).A signed contract or agreement with the PRS shall be provided to the CPM upon request. The Project Owner shall be responsible to pay any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The Project Owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submitted to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that Project impacts to paleontological resources have been mitigated.

Verification: Within 90 days after completion of ground disturbing activities, including landscaping, the Project Owner shall submit the Paleontological Resources Report under confidential cover to the CPM.

Certification of Completion of Worker Environmental Awareness Program ROSEVILLE ENERGY PARK (03-AFC-1)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on Cultural, Paleontology and Biological Resources for all personnel (i.e. construction supervisors, crews and plant operators) working on-site or at related facilities. By signing below, the participant indicates that they understand and shall abide by the guidelines set forth in the Program materials. Please include this completed form in the Monthly Compliance Report.

No.	Employee Name	Company	Signature
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			

Cul Trainer: _____ Signature:_____ Date: __/___/____

PaleoTrainer: _____ Signature:_____ Date: __/___/____

Bio Trainer: _____ Signature:_____ Date: __/___/____

This Page Left Intentionally Blank

D. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the project, specifically the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also considers the potential cumulative impacts to water quality in the project vicinity. To prevent or reduce any potential adverse impacts, several mitigation measures are included in the Conditions of Certification to ensure that the project will comply with all applicable federal, state, and local laws, ordinances, regulations, and standards.

By the time of the evidentiary hearings, all disagreements between the parties were settled. Therefore the testimony was uncontroverted. (1/25/05; Ex. 1, Ch. 7, 8.11, 8.15 and App. 7, and 8.15; Ex. 3, responses to first set of data req., nos. 52-57; Ex. 4, Draft Stormwater Pollution Prevention Plan in response to Staff data request no. 55; Ex. 5, Draft Spill Prevention, Control, and Countermeasures Plan for Operation, in response to data req. no 57; Ex. 9, responses to second set of data req. nos. 83-85; Ex. 38; Ex. 47; Ex. 49; Ex. 50.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

EROSION CONTROL AND STORMWATER MANAGEMENT

The 40 acre City-owned parcel and surrounding areas consist of a wide variety of soil types ranging in texture from silty clays to silty sands that are derived from older fan deposits of the Quaternary Riverbank and Turlock Lake formations

The REP construction area, which includes the power plant site, recycled water pipeline, sanitary wastewater pipeline, and stormwater outfall, is situated entirely within the Cometa Ramona sandy loam soil series. The Cometa Ramona sandy loam soil has a permeability that is moderately slow to very slow and is well drained, with a slight erosion hazard.

The proposed natural gas pipeline crosses several soil series; the most prominent being the Fiddyment Cometa Kaseberg and the Cometa Ramona series. The soils within those series are mostly deep and well drained that have formed on terraces. (Ex. 1, § 8.11.1; Ex. 47, p. 4.9-4.)

Power Plant Site

The general site grading of the REP site will establish a working construction surface and provide positive drainage for site buildings and structures. Earthwork at the site will consist of excavation for foundations, underground pipe and utility trenches, and two connected stormwater detention ponds.

During the early phases of construction, temporary erosion and sediment control measures will direct stormwater runoff to the natural runoff swale at the northeastern end of the site. After final site grading and construction of the stormwater detention ponds, stormwater runoff will be directed to the detention ponds. The detention ponds will be constructed for sediment and contamination control and will be designed to release on-site stormwater runoff to the unnamed tributary of Pleasant Grove Creek that lies approximately 700 feet east of the REP site. (Ex. 47, p. 4.9-7.)

RE is required, under Section 402 of the Clean Water Act, to comply with the statewide NPDES permit for stormwater discharges associated with construction and industrial activities. Project design, the Storm Water Pollution Prevention Plans (SWPPP), and the Erosion and Sediment Control Plan (ESCP) will include measures to control stormwater pollution, erosion and other forms of soil degradation. (Ex. 47, p. 4.9-8.)

RE is required under Conditions of Certification **SOIL & WATER 1 & 2** to obtain a NPDES permit for construction activities and to prepare both a construction

SWPPP and an ESCP prior to starting construction activities. Once construction of the REP is complete, RE is required under Conditions of Certification **SOIL & WATER 3** to prepare an industrial SWPPP for operation of the REP. No significant impacts are expected if Conditions of Certification **SOIL & WATER 1, 2 & 3** are implemented. (*Ibid*.)

Natural Gas Pipeline

The natural gas pipeline will be a 10 to 16 inch diameter pipe that will be constructed from the REP site to the existing PG&E gas connection point. PG&E will construct the natural gas pipeline using trench excavation, jack and bore, or horizontal directional drilling (HDD). Two alternative routes are under consideration. Alternative "A" is approximately six miles long and would cross several major waterways including four crossings of Kaseberg Creek and one crossing of Curry Creek. Alternative "D" is one and one-half miles long, without any creek crossings. (Ex. 47, p. 4.9-8.)

Construction impacts will include soil disturbance associated with trenching and jack and bore construction with the potential to cause accelerated soil erosion from wind or water. If HDD is used at Kaseberg or Curry creeks, it will involve drilling from the ground surface adjacent to the creek using a technique that guides the direction of the drill to pass under the creek and emerge on the ground surface on the opposite side without disturbing the creek bed. Staging areas are required at the entry and exit points of the drill.

HDD is used to avoid disturbance of water courses and wet areas. There are, however, potential water quality impacts associated with HDD. Those potential impacts include occasional unintended fracturing (frac-outs) of the ground above the drill resulting in a pathway through which drilling mud discharges onto the ground surface or streambed. Although not generally toxic, the drilling mud can cause turbidity impacts or coat streambed surfaces to the detriment of aquatic

life. Frac-outs can sometimes be difficult to detect, particularly in streams with flowing water. (*Ibid.*)

Trenching for pipeline installation and vehicular travel within the construction corridor will temporarily disturb soils and potentially increase wind and water erosion. However, appropriate erosion and fugitive dust control measures will be implemented during construction. A California Department of Fish and Game 1601 Streambed Alteration Agreement will be needed prior to crossing Kaseberg and Curry creeks. Depending on the construction method used, an ACOE Nationwide permit may also be required. PG&E will construct and own the natural gas pipeline. PG&E will be required, under Section 402 of the Clean Water Act, to comply with its statewide NPDES permit for stormwater discharges associated with construction activities and will be required to implement temporary and permanent best management practices (BMPs) to prevent soil erosion and sediments from affecting surface water. (*Ibid.*)

Sanitary Wastewater Pipeline

The sanitary wastewater pipeline will be a three to six inch diameter, 800-foot pipeline constructed from the REP site to the adjacent PGWWTP. Construction impacts will include soil disturbance associated with trenching and will have the potential to increase wind and water erosion.

The sanitary wastewater pipeline will be constructed across an unnamed tributary to Pleasant Grove Creek. Stream crossings where HDD will not be used will be crossed by open trench. Potential construction-related impacts of an open trench crossing include:

- increased sediment delivery to the stream flow through disturbance of the channel bed and banks during construction;
- sediment deposits to the streambed through disturbance of the channel bed and banks during construction;

- destabilization of the channel bed and banks resulting in long-term erosion; and

- introduction of foreign contaminants through the use of heavy machinery in the streambed.

However, appropriate erosion and fugitive dust control measures will be implemented during construction. RE has provided a draft SWPPP that identifies temporary and permanent BMPs to prevent soil erosion and sediments from affecting surface water. Other BMPs specific to trenched stream crossings include construction in the dry season, diversion of stream flows around the active excavation area through the use of coffer dams, installation of temporary culverted crossings for heavy equipment, and regular maintenance and inspection of heavy equipment used in the stream channel to minimize the introduction of foreign pollutants. (Ex. 47, p. 4.9-9.)

A California Department of Fish and Game 1601 Streambed Alteration Agreement will be needed prior to the creek crossing. Depending on the construction method used, an ACOE Nationwide permit may also be required. Under the NPDES permit and implementation of the SWPPP and ESCP (Conditions of Certification **SOIL & WATER 1 & 2**), no significant impacts are expected. (*Ibid.*)

Pipeline Scour Potential

Natural stream channels are subject to streambed and bank scour during flood events. Bed scour is usually not visible because it occurs during a flood and ceases as the flood subsides. Bank erosion is more evident because the effects can be seen well after the flood. Pipelines buried below and adjacent to active stream channels can be uncovered and exposed by bank erosion or streambed scour. Exposure of the pipeline could result in pipeline rupture through the action of flowing water and debris, or through third party action after the exposure has occurred. Rupture of the gas pipeline could result in water contamination or fire

hazard, while rupture of the sanitary wastewater pipeline would result in surface water contamination. (Ex. 47, p. 4.9-9, 10.)

The potential for exposure of the pipeline by stream erosion and scour can be minimized by locating the pipeline below the expected 100-year depth of scour at stream crossings and extending this depth of burial a sufficient distance away from the streambed to avoid anticipated lateral erosion. Condition of Certification **SOIL & WATER 9** requires that the proposed pipelines (natural gas and sanitary wastewater) will be below the expected 100-year depth of scour at all stream crossings. (*Ibid.*)

Surface Water

The REP site lies within the North American Subbasin where the principal drainages are the Sacramento, American, Feather, and Bear Rivers. The 70 acre City owned parcel, which includes the REP site, is situated within the Pleasant Grove and Kaseberg Creek watersheds with the REP site located 0.25 mile south of Pleasant Grove Creek. Pleasant Grove Creek drains from the Sierra Nevada foothills approximately 1.5 miles north of Rocklin into the Natomas Main Drainage Canal. From the Natomas Main Drainage Canal, water from Pleasant Grove Creek eventually enters the Sacramento River about 15 miles downstream from the project site. (Ex. 47, p. 4.9-4,5.)

Due to the proximity of the proposed REP site to Pleasant Grove Creek (0.25 mile) and its unnamed tributary (approximately 700 feet), the potential for site flooding and surface water degradation has been evaluated. Water surface elevations for the 100-year storm are contained in the June 2003 ***Master Drainage Study for the Fiddyment and Westpark Properties*** and were evaluated for Pleasant Grove Creek in the vicinity of the REP construction area. The Fiddyment and Westpark properties make up the 3,162 acre area surrounding the REP, which will be developed as the West Roseville Specific Plan. (Ex. 47, p. 4.9-10.)

The purpose of the ***Master Drainage Study for the Fiddyment and Westpark Properties*** was to determine the potential drainage impacts from the build-out of the WRSP on the Pleasant Grove and Curry Creek watersheds. As part of the study, the entire Pleasant Grove Creek watershed upstream of the REP was modeled using the Hydrologic Engineering Center-River Analysis System (HEC-RAS) and the results evaluated to delineate the 100-year flood plain for Pleasant Grove Creek and its tributaries. Portions of the construction area are within the 100-year flood plain. The flooding of the construction area will not result in significant impacts. The occurrence of the 100-year storm is not likely during the 18 to 20 months of plant construction. Therefore, surface water degradation from minor flooding of the construction area is not anticipated. (*Ibid.*)

Groundwater

The project site is situated within the North American Subbasin of the Sacramento Valley Groundwater Basin. The North American Subbasin is approximately 30 miles long and 25 miles wide with an area of approximately 548 square miles. The subbasin contains both an upper and lower aquifer system with most of the groundwater produced in the northern portion of the subbasin. The REP is located within the interior portion of the subbasin with a groundwater level at 108.5 feet below ground.

Recharge to the aquifers comes almost exclusively from Sierra Nevada runoff with the greatest percentage of recharge coming from the northern Sacramento Valley. No artificial recharge is known to occur within the subbasin.

The REP site will use groundwater from an on-site well for potable and domestic uses. The City has tested one of the three existing wells on the City-owned parcel and determined that its quality and pressure are sufficient to serve the project. The anticipated REP demand for groundwater from the onsite well is

estimated to be approximately 0.5 gallons per minute (gpm) or less than 1 AFY. (Ex. 47, p. 4.9-5.)

Under Condition of Certification **SOIL & WATER 5**, RE is required to submit for review and approval a master water, sewer, and recycled water plan for the REP, which must show the location of the on-site water source (i.e. the well location) and its method of storage, distribution and treatment. Compliance with Condition of Certification **SOIL & WATER 5** will ensure that the potable water supply for the REP will comply with all State and local LORS. (Ex. 47, p. 4.9-16.)

Reclaimed Waste Water

The project's cooling water and process makeup water will be supplied entirely by tertiary treated recycled water from the adjacent PGWWTP via a pipeline that crosses Phillip Road. Recycled water will also be used on-site for fire suppression and landscape irrigation. The total availability of recycled water from the PGWWTP in 2005 is estimated to be 6.5 million gallons per day (mgd) with the maximum REP demand projected to be 1.71 mgd.

Water quality parameters for the PGWWTP are not yet available. The recycled water from the PGWWTP is expected to be similar to the water from the Dry Creek Waste Water Treatment Plant (Ex. 1, § 8.15.2.2.). The PGWWTP will supply tertiary treated recycled water that has undergone screening, grit removal, extended aeration, secondary clarification, filtration, chlorination, and dechlorination. The recycled water will meet the California Code of Regulations, Title 22, Division 4 requirements for "unrestricted use." (Ex. 47, p. 4.9-5, 6.)

A one million gallon, above-ground storage tank will be constructed on-site to store recycled water for fire protection and provide capacity for intermittent daily peak loads. In the event of a temporary interruption of recycled water from the RGWWTP, the project will use this stored water. If the supply of stored water is exhausted, the REP will shut down. (Ex. 47, p. 4.9-13.)

Use of recycled water will cause the least impact to the environment and is consistent with state water policy for water conservation and maximum reuse of wastewater. (Ex. 47, p. 4.9-14.)

Construction Water Supply

The use of recycled water for all major construction activities is encouraged under State law and is consistent with the City's Recycle Water Policy (Roseville Municipal Code Section 14.17.010 B). Due to the proximity of the REP to the PGWWTP, the use of recycled water for soil compaction, dust suppression and other major construction activities is feasible and economically achievable. Condition of Certification **SOIL & WATER 6** requires the use of recycled water for all major REP construction activities, hydrostatic testing and all other nonpotable uses to ensure that no surface or groundwater suitable for potable use will be used in the construction or testing of any REP element. (Ex. 47, p. 4.9-14.)

SPILL PREVENTION

The REP draft Spill Prevention Control and Countermeasure (SPCC) Plan covers chemical spill control and management of the hazardous materials that will be stored and used onsite. Hazardous materials at the REP will be stored indoors in watertight containers and/or surrounded by secondary containment structures. Bermed containment will be used in areas used for bulk hydrocarbon storage. Some of the hazardous materials used during construction include petroleum hydrocarbons, cleaning fluids and solvents.

Acutely hazardous materials stored on-site during operation of the proposed REP facility include sulfuric acid and aqueous ammonia. Those materials would be stored in above ground storage tanks that would be surrounded by curbed concrete containment basins. Other containment/treatment facilities include berms, concrete sumps, and an oil/water separator. Stormwater runoff from the

hazardous materials containment portions of the plant site will be discharged through an oil/water separator and then to the cooling tower basin. Stormwater runoff from other portions of the plant site will be directed by surface flow through a collection of catch basins and ditches to the on-site stormwater detention ponds. No underground chemical storage tanks are proposed at the project site. No releases of contaminated stormwater from the plant site are expected. (Ex. 47, p. 4.9-15.)

Solid wastes and small amounts of hazardous waste that are generated will be properly accounted for, tracked, handled, and disposed of off-site using licensed transporters and disposal facilities. On-site spills will not cause significant impacts due to the procedures and BMPs described above and included in the draft SPCC and draft. (*Ibid.*)

WASTEWATER DISCHARGE

Construction Wastewater

The construction phase of REP will require minimal dewatering requirements. All excavations will be above the existing water table. Dewatering requirements are expected to consist of stormwater from plant excavations only. The quantity of stormwater collected is expected to result in only several days of dewatering during construction. For the REP project, it is expected that the potential for site dewatering will only occur over a single rain season. The maximum daily dewatering discharge is estimated to be 72,000 gallons. (Ex. 47, p. 4.9-16.)

Water used for dust control and soil compaction during construction will not result in discharge. During the construction period, sanitary waste will be collected in portable toilets (no discharge) supplied by a licensed contractor and disposed of at an appropriate receiving facility. Equipment wash water will be collected and disposed of off-site (Ex. 1, § 8.15.2.4.).

As with the use of construction water, the use of recycled water for hydrostatic testing of the various pipelines is required in Condition of Certification **SOIL & WATER 6**. Recycled water used for hydrostatic testing will be chemically analyzed for contaminants and discharged into a dewatering structure. Depending on water quality, the water will be discharged into the City of Roseville sanitary wastewater system or to tributary drainages to Pleasant Grove Creek under the appropriate State and City discharge permits. Both the use and discharge of recycled water for hydrostatic testing are not expected to affect waters of the state. (Ex. 47, p. 4.9-17.)

Cooling Tower Blowdown

Circulating (or cooling) water system blowdown will consist of recycled water that has been concentrated by approximately five cycles of concentration and will contain the residue of the chemicals added to the circulating water. Cooling water treatment will require the addition of a pH control agent, a mineral scale dispersant, corrosion inhibitors, and biocides. The waste stream will be treated in an on-site Zero Liquid Discharge (ZLD) system where the water evaporated by the brine concentrators will be reclaimed using a condenser producing a distillate very low in total dissolved solids (TDS). The distillate will be recovered for reuse within the REP. The resulting residue from the ZLD process will be disposed of at an appropriately licensed facility. No impacts to surface or groundwater resources are anticipated (Ex. 1, § 8.15.2.4; Ex. 47, p. 4.9-17.).

Zero Liquid Discharge

All process wastewater streams (oil/water separator effluent, filter backwash, quenched HRSG blowdown, crystallizer condensate, and excess distillate) will be directed to the cooling tower for initial concentration and then to the ZLD system. The volume of the cooling tower blowdown going to the ZLD is expected to be from 96 to 116 gpm under average conditions and from 267 to 278 gpm under peak conditions. (Ex. 47, p. 4.9-17.)

The brine concentrators of the ZLD system will use heat to evaporate approximately 96 percent of the feed water. The concentrated brine will be sent to the crystallizers where it will be further concentrated into a salt sludge. The sludge will be dewatered using either a filter press or belt press. The residual solid waste exiting the press will be discharged to a storage bin. The relatively dry solid waste will be transported off-site for disposal at an appropriate landfill. Operation of the REP will produce approximately 121 tons of solid waste per year if operated at its full permitted output (Ex. 1, § 7.4.1.1.).

Since all process wastewater will be eliminated through the ZLD process, the operation of the REP will not cause or contribute to impacts to surface or groundwater resources. (Ex. 47, p. 4.9-18.)

Sanitary Wastewater

The project will include sanitary facilities designed to handle the plant's domestic wastewater. No septic tanks are proposed on-site and sanitary wastes from the REP will be conveyed via pipeline to the PGWWTP. Therefore, no potential adverse impacts to surface or groundwater sources are anticipated (Ex. 1, § 8.15.2.6; Ex. 47, p. 4.9-18.).

Plant Drainage

Miscellaneous plant drainage will consist of process water drainage, equipment leakage, and drainage from facility containment areas. Water from those areas will be collected in a system of floor drains, sumps, and pipes within the REP and discharged to an oil/water separator. The oil free discharge water will be recycled to the cooling tower basin. Oil collected by the oil/water separator will be transported off-site for disposal or recycling. No potential adverse impacts to surface or groundwater resources are expected. (Ex. 47, p. 4.9-18.)

CUMULATIVE IMPACTS

Erosion Control and Stormwater Management

Stormwater runoff typically increases with urbanization and new construction activities. REP construction and operation will only have minor and temporary effects on soil resources. Stormwater discharge will adhere to a SWPPP/ESCP BMPs and is expected to comply with both the City of Roseville and CVRWQCB water quality standards. Contribution to cumulative erosion and sediment impacts are expected to be minor. Therefore, the REP will not contribute significantly to cumulative impacts to soil resources. (Ex. 47, p. 4.9-18, 19.)

Water Supply

REP's cooling, process makeup, fire suppression, and landscape irrigation water will be supplied entirely by tertiary treated recycled water from the PGWWTP. The plant will produce an average supply of approximately 6.5 mgd in 2005, increasing to 12.5 mgd by 2020. The REP will use 0.71 mgd of recycled water for cooling under average conditions (1.71 mgd under maximum conditions). The PGWWTP will have an adequate supply of tertiary treated water for the needs of the REP and other recycled water needs. The use of recycled water by the REP will not affect the City's potable water supply or the regional demand for fresh water. Therefore, no significant cumulative impacts are expected. (Ex., p. 4.9-19.)

Groundwater

No significant cumulative impacts are expected to groundwater resources since the amount of groundwater required to meet the REP's potable needs is so small. Condition of Certification **SOIL & WATER 6** prohibits the use of groundwater suitable for potable use to be used in the construction or testing of any element of the REP. (Ex. 47, p. 4.9-19.)

Wastewater Discharge

Since there will be no wastewater discharge from the REP, there will be no cumulative impacts to water quality. Sanitary wastewater will be piped to the PGWWTP, but the volume is small and will not cause a significant cumulative impact. (Ex., 47, p. 4.9-19.)

Surface Water Quality and Flooding

The REP and PGWWTP are bound on three sides by the Fiddyment and Westpark properties, which will be developed under the WRSP. Based on the pre and post development in the ***Master Drainage Study for the Fiddyment and Westpark Properties***, the location of the REP and operation of its on-site detention ponds will not contribute to flooding or water quality degradation of Pleasant Grove Creek or its tributary. No cumulative impacts to surface water quality or flooding are expected from construction or operation of the REP. (Ex. 47, p. 4.9-19, 20.)

FINDINGS AND CONCLUSIONS

Based upon the evidence of record before us, we find and conclude as follows:

1. Soils in the project area are subject to wind and water erosion.
2. Applicant has submitted a draft erosion control plan for the construction phase of the project which identifies best management practices to be used to control erosion and the discharge of storm water off-site. These measures will ensure no significant adverse impacts occur to area soils.
3. The City of Roseville has agreed to provide both potable and recycled water service to the REP.
4. Use of recycled water for cooling at the REP is consistent with the state water policy.
5. Use of recycled water for industrial processes will avoid any substantial depletion or degradation of local or regional surface water supplies.
6. Use of potable well water for domestic uses will not result in significant impacts to ground water resources.
7. Use of Zero Liquid Discharge will eliminate the discharge of wastewater by the project.

8. The Conditions of Certification, below, are adequate to ensure that construction and operation of the REP will not create significant adverse impacts to the matters addressed in the technical discipline of **Soils and Water Resources**.

We therefore conclude that the project will conform with all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

SOIL&WATER 1: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the construction of the entire project (construction SWPPP). The project owner shall submit copies of all correspondence between the project owner and the Central Valley Regional Water Quality Control Board (CVRWQCB) and the City of Roseville regarding this permit to the CPM.

Verification: The project owner shall submit to the CPM copies of all correspondence between the project owner and the CVRWQCB and the City of Roseville about the General NPDES permit for the Discharge of Storm Water Associated with Construction Activities within 10 days of its receipt (when the project owner receives correspondence from the CVRWQCB or the City) or within 10 days of its mailing (when the project owner sends correspondence to the CVRWQCB or the City). This information shall include copies of the Notice of Intent and Notice of Termination for the project.

SOIL&WATER 2: Prior to beginning any site mobilization activities for any project element, the project owner shall obtain CPM approval for a site specific Drainage, Erosion and Sedimentation Control Plan (ESCP) that addresses all project elements and ensures protection of water quality and soil resources; demonstrates no increase in off-site flooding potential or sedimentation; meets local requirements; provides legible drawings and complete narrative; and provides for monitoring and maintenance of all mitigation measures under the ESCP. The ESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL 1** and may incorporate by reference any SWPPP developed in conjunction with any NPDES permit.

Verification: No later than 60 days prior to the start of any site mobilization activities for any project element, the project owner shall submit a copy of the ESCP to the City of Roseville for review and comment. All City comments shall be provided to the CPM within 30 days of receipt of the ESCP by the City. The

ESCP must be approved by the CPM prior to start of any site mobilization activities for any project element. During construction, the project owner shall provide a report in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control activities and the results of monitoring and maintenance activities. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance activities. A field copy of the plan shall be maintained on-site and available for CPM review. The BMP implementation schedule shall reflect actual on-site conditions and location of each erosion and sediment control BMP.

The ESCP shall include the following elements.

Vicinity Map – A map shall be provided indicating the location of all project elements with depiction of significant geographic features to include watercourses, creeks, wetlands, and sensitive habitat.

Site Delineation – The REP site and all project elements shall be delineated showing boundary lines of all construction areas and the location of existing and proposed structures, pipelines, roads, and drainage facilities.

Watercourses and Critical Areas – The ESCP shall show the location of watercourses and critical areas such as creeks, rivers, wetlands and other environmentally sensitive areas. Indicate the proximity of those features to the REP construction site and all pipeline construction corridors.

Drainage – The ESCP shall provide a topographic site map showing existing, interim and proposed drainage systems; drainage area boundaries and water shed sizes in acres; the hydraulic analysis to support the selection of BMPs to divert off-site drainage around or through the plant and laydown areas; and all pipeline trenching and boring sites. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.

Clearing and Grading – The plan shall provide a delineation of areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slope, location, and extent of all proposed gradings as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography. The ESCP shall include a statement of the quantities of material excavated or filled for each element of the REP (site and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported.

Project Schedule – The ESCP shall identify on the topographic site map the location of the site specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The submittal of the ESCP for initial approval by the CPM need only contain the BMP implementation schedule for the initial grading phase of each project element. Subsequent BMP schedules for excavation/construction, and final grading/stabilization are required to be submitted to the CPM prior to BMP installation.

Best Management Practices – The ESCP shall show the location, timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, during project element excavation and construction, and final grading/stabilization. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances.

Erosion Control Drawings -- The erosion control drawings and narrative must be designed and sealed by a professional engineer/erosion control specialist.

SOIL&WATER 3: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of REP (operation SWPPP). The project owner shall submit copies to the CPM of all correspondence between the project owner and the CVRWQCB and the City of Roseville.

Verification: The project owner shall submit to the CPM a copy of the operation SWPPP prior to commercial operation and copies of all correspondence between the project owner and the RWQCB and the City of Roseville about the General NPDES permit for the Discharge of Storm Water Associated with Industrial Activity within 10 days of its receipt (when the project owner receives correspondence from the RWQCB or the City) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB or the City). This information shall include copies of the Notice of Intent and Notice of Termination for the project.

SOIL&WATER 4: The project owner shall obtain and provide a copy of the Streambed Alteration Agreement; CWA 401, CWA 404; and adopted waste discharge requirements permits as appropriate, or proof that they are not needed, prior to site mobilization activities. Site modifications required by any of those permits may require evaluation by the CPM prior to issuance of the final construction permit.

Verification: No later than 30 days prior to site mobilization for any project element, the project owner shall provide copies of the final, approved Streambed

Alteration Agreement; CWA 401,and 404 permits; and adopted waste discharge requirements or written verification that one or more are not needed, to the CPM. All copies of correspondence between any federal, state or local agency regarding those permits will be provided to the CPM within 10 days of its receipt.

SOIL&WATER 5: Prior to beginning any site mobilization activities for any project element, the project owner shall submit for review and approval a master water, sewer, and recycled water plan for the REP.

Verification: No later than 30 days prior to the start of any site mobilization activities for any project element, the project owner shall submit a copy of the master water, sewer, and recycled water plan for the REP to the City of Roseville for review and comment. The master water, sewer, and recycled water plan must be approved by the City and such approval shall be provided to and confirmed by the CPM prior to start of any site mobilization activities for any project element. The master water, sewer, and recycled water plan for the REP shall include, but shall not be limited to the following:

1. All project water, sewer, and recycled water utilities and their points of connection to the City of Roseville's system to include the connection to the PGWWTP recycled water terminal point (located south of Phillip Road).

2. All existing backbone infrastructure (i.e. off-site sewer and recycled water utilities).

3. The location of the on-site water source (i.e. the well location) and method of storage, distribution and treatment.

4. The point of connection of the on-site fire system to the recycled water system for additional fire protection.

SOIL&WATER 6: The REP shall use recycled water for cooling tower makeup and process water. The REP shall use recycled water for construction, hydrostatic testing, landscape irrigation and all other nonpotable uses in accordance with Section 14.17.010 of the City of Roseville Municipal Code. The REP shall comply with all requirements of Title 22 and Title 17 California Code of Regulations. Prior to the delivery of recycled water to the REP for cooling tower makeup and process water, the owner shall submit a Title 22 Engineering Report that has been approved by the Department of Health Services, the CVRWQCB, and the City of Roseville.

Verification: At least 60 days prior to the start of construction of the REP recycled water supply and distribution system, the project owner shall submit to the CPM the water supply and distribution system design and Engineering Report approved by the Department of Health Services the CVRWQCB, and the City of Roseville demonstrating compliance with this condition. The water supply and distribution system design shall be included in the final design drawings submitted to the CBO as required in Condition of Certification **CIVIL 1**.

SOIL&WATER 7: Prior to the use of any water by the REP, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volumes of potable and recycled water supplied to the REP. Those metering devices shall be operational for the life of the project. An annual summary of daily recycled and monthly potable water use by the REP, shall be submitted to the CPM in the annual compliance report.

Verification: At least 60 days prior to commercial operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the potable and recycled pipelines serving the project. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report.

The project owner shall submit a water use summary report to the CPM in the annual compliance report for the life of the project. The annual summary report shall be based on and shall distinguish recorded daily use of recycled water and monthly use of potable water. The report shall include calculated monthly range, monthly average, and annual use by the project in both gallons per minute and acre-feet. After the first year and for subsequent years, this information shall also include the yearly range and yearly average recycled and potable water used by the project.

During construction as part of the monthly compliance report, the project owner shall provide monthly usage of potable and recycled water and their sources used during construction.

SOIL&WATER 8: Surface or subsurface disposal of process wastewater or contaminated stormwater from the REP is prohibited. The project owner shall treat all non-sanitary wastewater streams with a zero liquid discharge (ZLD) system that results in a residual solid waste.

Verification: Within 60 days following the commencement of project operations, the project owner shall submit to the CPM the final design of the ZLD system including schematic, narrative of operation, maintenance schedules, on-site storage facilities, containment measures and influent water quality. This information shall also include the results of the Waste Extraction Test of the residual solid waste from the ZLD system. In the annual compliance report, the project owner will submit a status report on operation of the ZLD system, including disruptions, maintenance, volumes of interim wastewater streams stored on-site, volumes of residual solids generated and the landfills used for disposal. REP operation and wastewater production shall not exceed the treatment capacity of the ZLD system.

SOIL&WATER 9: The proposed sanitary wastewater pipeline shall be located below the anticipated depth of scour from a 100 year flood at all creek crossing locations. The depth of pipeline burial shall be extended a sufficient distance away from the creek banks to avoid anticipated lateral erosion. Trenched water

crossings shall be constructed during the dry season using "in the dry" construction techniques that avoid trenching within open or flowing water. Creek beds at trenched crossings shall be restored to their natural contours and revegetated.

Verification: At least 30 days prior to site mobilization for the proposed sanitary wastewater pipelines, the project owner shall submit to the CPM, an analysis (plan) prepared by a registered civil engineer. The analysis (plan) shall demonstrate that the proposed pipelines would be below the expected 100 year depth of scour at all creek crossings and will remain at that depth for a sufficient distance from the creek banks to avoid any lateral erosion that can be reasonably expected to occur during the life of the project. The CPM must approve the analysis (plan) prior to any site mobilization activities for those pipelines.

VII. LOCAL IMPACT ACCESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise, Socioeconomics, Traffic and Transportation, and Visual Resources.**

A. LAND USE

The land use analysis focuses on two main issues: (1) whether the project is consistent with local land use plans, ordinances, and policies; and (2) whether the project is compatible with existing and planned uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Site and Vicinity Description

The proposed Roseville Energy Park (REP) is to be built on a 12-acre portion of an approximately 40-acre parcel situated approximately one mile west of the pre-existing boundary of the City of Roseville. However, both the REP plant site and the Pleasant Grove Waste Water Treatment Plant (PGWWTP) have recently been annexed by the City, thus creating a non-contiguous island of City property surrounded by Placer County land. Now, with the final approval of the West Roseville Specific Plan by LAFCO, the City of Roseville and the project site are connected. The site is located north of Phillip Road. Access to the site will be from Phillip Road via a new access driveway. The site is located approximately 7 miles north of Interstate 80 and 5 miles northwest of State Highway 65. (Ex. 47, p. 4.5-3.)

The parcel is currently undeveloped and being used as a construction staging and laydown area for the construction of the PGWWTP. The site was formerly

used for rural residential purposes and grazing. With the site currently being used as a construction staging area, buildings associated with one of the former residences are being used for storage of materials and construction management activities. (*Ibid.*)

Current land uses surrounding the site include large parcel agriculture, open space and livestock grazing. Specific surrounding uses are described as follows:

- North: Approximately 1,200 feet to the north of the project site is a rural residence and barn. A dog kennel/residence is located 850 feet to the northwest.
- South: The Pleasant Grove Waste Water Treatment Plant is approximately 2,000 feet south of the REP site.
- East: Rural residence and additional out buildings.
- West: Rural residence and outbuilding located 4,100 feet to the northwest.

Other uses in the vicinity of the REP site include the Del Webb Roseville Sun City community, approximately 1.2 miles east, the Robert Cooley Middle School, located approximately 2.7 miles east of the project site, and St. Clare Catholic Church, located approximately 4 miles south of the project site. (Ex. 47, p. 4.5-4.)

Planned Development

Proposed land uses within the West Roseville Specific Plan include general industrial (located to the west of the PGWWTP); light industrial (west of and south of the PGWWTP); commercial, high-density, medium density and low-density residential; parks and recreation; open space; public/quasi-public areas and various proposed school locations. (*Ibid.*)

According to Appendix G of the Guidelines to the California Environmental Quality Act (CEQA), a project may have a significant effect on land use if a proposed project would:

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;

- disrupt or divide the physical arrangement of an established community; or

- convert Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to non-agricultural use.

A project may also have a significant impact on land use if it would create unmitigated noise, dust, public health hazard or nuisance, traffic, or visual impacts, or if it precludes or unduly restricts existing or planned future uses.

The REP site is comprised of three individual and legally separate parcels which encompass 40 acres. The REP facilities would occupy approximately 12 acres of the property. The area within the power plant and switchyard fence lines will encompass 9.1 acres. Condition **LAND-3** would require that the project owner obtain all necessary approvals from the City of Roseville to complete any lot merger or lot line adjustments necessary to ensure that the Project, and its associated facilities will be located on a single legal lot in compliance with Section 18.10.010 of the Roseville Subdivision Ordinance. (Ex. 47, p. 4.5-5.)

Although no schools are currently located within close proximity of the REP site, with the recent approval of the West Roseville Specific Plan by the City of Roseville and LAFCO, future school sites in the vicinity have been identified. The REP proposed several alternate gas pipeline routes in the AFC, but has since elected to withdraw from consideration the pipeline routes that were within 1,500 feet of any planned school facilities as identified in the West Roseville Specific Plan. With this reconsideration by REP, the preferred gas line route will not trigger any additional gas line risk analysis by the California Department of Education. (Ex. 47, p. 4.5-5.)

The City of Roseville General Plan was adopted by Roseville's City Council in 1992 and a technical update was adopted in 2003. The General Plan reflects the values and contains the goals of the community regarding development. The City chose to incorporate a Public Facilities Element as an optional element into its General Plan to recognize the importance of establishing goals and policies related to public facilities. (Ex. 47, p. 4.5-6.)

Of the various zoning districts in the City's Zoning Ordinance, the Public/Quasi-Public (P/QP) zoning district in which the project site is located is the most appropriate zoning district for a power plant. That zoning district is intended to provide for general power production and passive power production facilities. Power plants are specifically listed as a compatible use in the "P/QP" District subject to a conditional permit. Since the City is the applicant, the City would not generally issue itself a conditional use permit, but would proceed through a process that mirrors the conditional use permit process. The project complies with all of the applicable development standards (lot and yard requirements) set forth in the Zoning Ordinance for the "P/QP" District. (*Ibid.*)

The construction lay down area for REP would be immediately north of the power plant's structural footprint within the boundaries of the project site and, therefore, would not conflict with existing or planned land uses. (*Ibid.*)

To ensure that the REP conforms to the City of Roseville Zoning Code, the Commission requires the following Conditions of Certification:

> **LAND-1** would require that the applicant submit evidence of the City's review regarding compliance setback requirements, building elevations, temporary and permanent signs, parking requirements, and design and performance standards for the P/QP Zoning District;
>
> **LAND-2** would require that the applicant submit to the City of Roseville descriptions of the final laydown/staging areas for the City's review and comment; and

LAND-3 would require that the applicant shall obtain the necessary approval(s) from the City of Roseville for merger or lot line adjustment(s) necessary to ensure that the proposed project will be located on a single legal lot and owned by one entity.

The West Roseville Specific Plan does not expressly address the REP project as the Plan examines the potential project specific impacts of proposed developments within a 3,162 acre portion of land to be annexed into the City of Roseville's jurisdiction. The Plan contains guidance for areas to the west, east, and south of the REP project site and the Pleasant Grove Waste Water Treatment Plant. In order to provide sufficient buffers of the REP project from proposed residential developments, the Plan proposes industrial parks, Public/Quasi Public developments, and regional park components to assure public sensitivity of the REP and PGWWTP projects. (Ex. 47, p. 4.5-7.)

Linear Facilities

The natural gas line alignment would temporarily affect land currently being used in agricultural production (cattle grazing). The topsoil in the areas to be disturbed would be removed during the construction period and temporarily converted to non-agricultural use by this project. Soil surface would be returned to the original grades and agricultural use upon completion of construction activities. Therefore, no existing farmlands would be permanently converted to non-agricultural use for the REP's natural gas pipeline facilities. The impacts would be less than significant.

As discussed earlier in this report, portions of the proposed natural gas pipeline route would be installed within dedicated right-of-ways along local roads. They would not affect adjacent residential activities. (Ex. 47, p. 4.5-9.)

CUMULATIVE IMPACTS

The proposed project is consistent with the City of Roseville's (City) long-range land use policies for this industrially-designated area as expressed in the City's General Plan/West Roseville Specific Plan. Conformance with the General Plan/West Roseville Specific Plan is the primary consideration in determining a project's potential to contribute to adverse cumulative land use impacts. Therefore, projects that are consistent with the City's long-range land use policies are not viewed as adverse from a cumulative impact perspective. The West Roseville Specific Plan (WRSP) sets forth the City's long-range vision for the physical development of this incorporated area, and other plans for infrastructure and public services are based on this long-range vision. (Ex. 47, p. 4.5-9, 10.)

The WRSP envisions both long-term continuation of residential, industrial and commercial development in the site vicinity. LAFCO formally approved the annexation of 3,162 acres of land into the City of Roseville's jurisdiction which encompasses the West Roseville proposal in August 2004. (*Ibid.*)

Other projects proposed in the vicinity of the REP project include three residential subdivisions in Placer County. Whisper Creek Unit No.1 consists of 104 lots, Whisper Creek Unit No. 2 consists of 80 lots, and the PFE Residential Subdivision consists of 91 lots. All three subdivisions are located in the area of PFE Road and Walberg Road which is approximately four miles west of the REP project site, and are currently proceeding through the Draft Environmental Impact Report process. As to timing of these projects with the REP project, conceivably the REP project would be underway before construction on any one of the residential subdivisions would occur. (*Ibid.*)

The REP project is consistent with the City's long-range planning policies for industrial development in this area; therefore, cumulative land use impacts are not considered significant.

The proposed project is not expected to make a significant contribution to regional impacts related to new development and growth. The REP is planned to serve the City of Roseville's existing and anticipated electrical needs within its jurisdictional boundaries. (*Ibid.*)

FINDINGS AND CONCLUSIONS

Based upon the uncontested evidence of record, we make the following findings and reach the following conclusions:

1. The REP is located in an industrially zoned area and is a compatible use within that area.
2. The project is consistent with the City of Roseville's land use and zoning, including the West Roseville Specific Plan.
3. The project would not disrupt or divide the physical arrangement of an established community.
4. The project would not preclude or unduly restrict existing or planned land uses.
5. The Conditions of Certification ensure that the project will comply with all applicable local land use requirements.

We therefore conclude that the REP project will not create significant adverse direct, indirect, or cumulative impact, and will comply with applicable laws, ordinances, regulations, and standards contained in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall prepare a site development plan that complies with the applicable design criteria and performance standards for the Public/Quasi Public District set forth in the City of Roseville Zoning Ordinance.

Following preparation of the above site development plan, the project owner shall design and construct the project consistent with the applicable design criteria and performance standards for the Public/Quasi Public District set forth in the City of Roseville Zoning Ordinance.

Verification: At least 60 days prior to the start of construction, the project owner shall concurrently submit the site development plan to the CPM and the City of Roseville Planning Department. The material submitted to the CPM must include documentation that the City of Roseville Planning Department has been given the opportunity to review and comment on the plan and its compliance or conformance the above-referenced requirements.

LAND-2 The project owner shall provide descriptions of the final laydown/staging areas identified for project construction to the Director of the City of Roseville for review and comment, and the CPM for review and approval. The description shall include:

(a) Assessor's Parcel numbers;

(b) addresses;

(c) land use designations;

(d) zoning;

(e) site plan showing dimensions;

(f) owner's name and address (if leased); and,

(g) duration of lease (if leased); and, if a discretionary permit was required, copies of all discretionary and/or administrative permits necessary for site use as lay down/staging areas.

Verification: The project owner shall provide the specified documents at least 30 days prior to the start of any ground disturbance activities on all affected parcels.

LAND-3 The project owner shall obtain the necessary approval(s) from the City of Roseville and complete any lot merger or lot line adjustments necessary to ensure that the proposed project facilities, but excluding linear facilities, will be located on a single legal lot and owned by one entity.

Verification: At least 30 days prior to the start of construction, the Project Owner shall provide the CPM with proof of completion of the above adjustments or satisfactory evidence that no such adjustments are necessary. Prior to

submitting an application to the City, the project owner shall submit the proposed lot configuration to the CPM for review and approval.

This Page Left Intentionally Blank

B. TRAFFIC AND TRANSPORTATION

In this section, we have examined the extent to which the REP will affect the regional and local transportation systems. The evidentiary record contains the parties' analyses of (1) the roads and routings to be used during construction and operation of the Project; (2) the potential traffic problems associated with those routings; (3) the adequacy of parking capacity; (4) whether the Project would lead to inadequate emergency access; (5) the frequency of, and routes associated with, the delivery of hazardous materials; and (6) the likelihood of the Project's cooling tower operations to cause ground-hugging fog which could affect traffic safety. Staff proposed several Conditions of Certification on traffic issues, all of which were acceptable to the Applicant with the exception of **TRANS-7**. That Condition addresses steps the Applicant must take to mitigate potential impacts to traffic safety from Project-related ground-hugging fog. Concerns about ground-hugging fog involved extensive discussion in workshops and at the evidentiary hearing; subsequently, however, the parties agreed in their post-hearing briefs to an acceptable mitigation plan.[33] (1/25/05 RT 40-90; Ex. 1, §. 8.12 et seq.; Exs. 24, 26, 39, 47, 51, 52, 53, 54.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Sacramento/Roseville region has a comprehensive transportation system that includes freeways, highways, bus lines, and rail facilities. The major freeways in the general area include Interstate Highways (I) 5 and 80, and State Routes (SR) 99, 70, and 65. Regional access to the site is provided by SR-99 and I-5 from the west and south, I-80 from the east, and SR-65 from the north. (Ex. 47, p. 4.10-3.)

I-80 provides access to the Project site via Riverside Avenue, Cirby Way, Foothills Boulevard, Pleasant Grove Boulevard, Baseline Road, Fiddyment and

[33] We have incorporated the modifications to Conditions **TRANS-4, TRANS-6,** and **TRANS-7** as agreed by the parties. (1/25/05 RT 47-48, 70, 80; Exs. 39, 49, 50, 51, 52, 53; Post-Hearing Briefs of REP and Staff.)

Phillip Roads. The site can also be reached by utilizing SR-65, Blue Oaks Boulevard, Fiddyment, and Phillip Roads. SR-99/70 provides access via Baseline, Fiddyment, and Phillip Roads. Baseline Road and Blue Oaks Boulevard are east-west arterials with at least three lanes east of Fiddyment Road, which is a north-south arterial with two lanes between Baseline Road and Blue Oaks Boulevard. Phillip Road is both an east-west and north-south arterial with two lanes. It is likely that most traffic coming to the site will use I-80 and SR-65. (Ex. 47, p. 4.10-4.)

Intersections are the critical elements of the roadway system when assessing adequate travel capacity, maximizing safety, and minimizing environmental impacts. Operating conditions of a roadway system, including intersections, are indicated by the "level of service" (LOS), which describes the level of congestion (delay). LOS can range from "A", representing free-flow conditions with little or no delay to "F", representing saturated conditions with substantial delay. The City of Roseville's Capital Improvement Program requires the City to maintain at least 70 percent of its signalized intersections at LOS C or better during the PM peak period. The General Plan requires a formal action by the City Council to modify the projected LOS at intersections which function at less than LOS C. (Ex. 1, p. 8.12-5; Ex. 47, pp. 4.10-7 and 4.10-9.) Current service levels at relevant portions of local Roseville roadways are shown in Staff's **Traffic and Transportation Table 1**, replicated below.

Winter (tule) fog is relatively common in the West Roseville area. Motorists using roads in this area experience tule fog from time to time, which can reduce visibility and increase the potential for traffic accidents.[34]

[34] According to California Highway Patrol's Statewide Integrated Traffic Records System data, in 2000, the average number of accidents in California at signalized suburban intersections per million vehicles was 0.58. The average collision rate for roads in the local area near the REP site ranges from 0.08 for the intersection of Woodcreek Oaks Boulevard and Blue Oaks Boulevard, to 0.85 for the intersection of Washington Boulevard and Blue Oaks Boulevard. Examples of other accident rates include 0.00 for the intersection of Phillip and Fiddyment Roads, and 0.27 for the intersection of Blue Oaks Boulevard and Fiddyment Road. (Ex. 47, p. 4.10-4.)

TRAFFIC AND TRANSPORTATION - TABLE 1

Roseville Energy Park - Existing and REP Traffic Characteristics of Local Roads in the Project Area

SOURCE: Adapted from AFC Figure 8.12-8

Road or Highway	Existing Traffic		Capacities		Existing + Project
	AADT	Peak Hour Traffic	AADT	Peak Hour Traffic	AADT + REP Traffic (LOS)
SR 65 (4-lane expressway) Harding Blvd. To Washington Blvd.	36,000 (1)	4,450 (1)	80,000	7,200	36,232(A)
SR 99 (4-lane expressway) Baseline Road to Highway 70 Junction	23,700 (1)	2,300 (1)	80,000	7,200	23,932(A)
Baseline Road (4-lane Arterial) East of Fiddyment Road	12,788 (2)	1,667 (2)	36,000	3,400	13,020(A)
Brewer Road (2-lane County collector) West of REP Site	551 (3)	55 (3)	15,000	3,000	783(A)
Fiddyment Road (2-lane arterial) North of Baseline Road	8,766 (2)	897(2)	18,000	3,400	8,998(A)
Phillip Road (2-lane County collector) West of Fiddyment Road	157(3)	6(3)	15,000	3,000	389(A)
TRAFFIC AND TRANSPORTATION West of REP site	45(3)	3(3)	15,000	3,000	277(A)
Blue Oaks Blvd. West of Woodcreek Oaks Blvd.	13,741 (4)	1,268 (4)	36,000	3,600	13,973(A)
Pleasant Grove Blvd. West of Foothills Blvd.	27,760 (4)	2,983 (4)	36,000	3,600	27,992(C)*
Foothills Blvd. South of Pleasant Grove Blvd.	30,991 (4)	3,000(4)	36,000	3,600	31,223(D)

Sources: (1) URS 2001
(2) City of Roseville Traffic Court Database 2001
(3) Placer County 2003
(4) This number is Average Daily Traffic which City of Roseville Engineering staff advised CEC staff is equivalent to AADT. * Pleasant Grove Blvd. at peak hour is D.

1. Construction

Construction traffic impacts to local and regional roads are determined by the routes used by construction workers and delivery trucks arriving and departing from the Project site. Most commuting workers and truck deliveries of building supplies and equipment will travel from the greater Sacramento Metropolitan Area. (Ex. 47, p. 4.10-11.)

The average construction workforce is estimated at 114 employees, with a peak force of 206 during the 18-to-20-month construction period. Applicant assumed that construction workers and truck deliveries would travel to the REP site from SR-65 to Blue Oaks Boulevard, Fiddyment Road, and Phillip Road, or via Pleasant Grove Boulevard to Fiddyment Road. In addition, Project-related traffic may originate from I-80, to Cirby Way, Baseline Road, Fiddyment Road, and Phillip Road or via SR-99/70 to Baseline, Fiddyment, and Phillip Roads. It is anticipated that 90 percent of construction traffic leaving the site will travel east on Phillip Road, then north on Fiddyment Road, and then east on Blue Oaks Boulevard to SR-65. (Ex. 1, p. 8.12-13.)

Some large equipment components will be delivered by rail and transported to the site by truck. The heavy haul truck traffic from the Union Pacific yard in Downtown Roseville will be routed along Washington Road north to Blue Oaks Boulevard, west on Blue Oaks Boulevard to Fiddyment Road, south on Fiddyment Road to Phillip Road, and west on Phillip Road to the REP site. (Ex. 47, p. 4.10-11.)

Staff's **Traffic and Transportation Table 2** replicated below, presents a summary of the estimated trip generation during the construction phase. In calculating this estimate, the parties assumed that one-third of construction workers would travel together in carpools. With this assumption, Project-related traffic was estimated at 106 daily vehicle roundtrips during an average

construction month. During the peak months of heaviest construction activity (months 11-12), the REP would generate about 145 roundtrips. This includes both construction worker commute and truck traffic.

Traffic and Transportation Table 2
Trip Generation Summary – Construction Phase

Non-Peak Months 186 workers plus 26 trucks = 212 one way trips or 106 round trips
Peak Months (11 & 12) 278 workers plus 12 trucks = 290 one-way trips or 145 round trips
Adapted from Exhibit 1, Table 8.12-4 Notes: 1. REP assumes 1/3 of workers carpool (1.5 persons per vehicle) 2. REP assumes 80 percent of workers and 10 percent of deliveries arrive or depart during peak traffic hour 3. Staff assumes there will be fewer trucks during the peak construction months because most of the materials and equipment will be on-site.

Source: Ex. 47, p. 4.10-11.

Applicant indicated that construction personnel would typically arrive before the morning peak traffic hours (7 a.m. to 8 a.m.) and leave before the evening peak (5 p.m. to 6 p.m.) and, therefore, would not cause a change to the LOS of any area roads for the average or peak hour traffic conditions compared with existing LOS conditions. (Ex. 1, p. 8.12-13.) While the combination of commute, truck, and visitor traffic associated with the construction phase will likely increase the volume of traffic in the local area, most of the affected roadways will remain at LOS A, with one remaining at LOS C. Foothills Boulevard, however, will continue at a LOS D level until the traffic signals are synchronized and the road is enlarged to six lanes in the next two years. Staff recommended that commuter and truck traffic use alternate roads to avoid Foothills Boulevard. (Ex. 47, p. 4.10-13.)

Condition **TRANS-1** requires the Project Owner to prepare a Construction Traffic Control Plan that would limit peak hour construction truck and commute traffic by directing commuting workers and truck traffic to use alternate roads such as Baseline Road and Blue Oaks Boulevard. The Traffic Control Plan must also address the timing of heavy equipment and building materials deliveries; an employee ridesharing/trip reduction plan; and signing, lighting, and traffic control device placement. Condition **TRANS-1** also requires the Project Owner to maximize the use of daily off-peak traffic periods for the arrival and departure of construction traffic to prevent deterioration of existing traffic conditions.

According to Staff, best management practices must be incorporated in the Traffic Control Plan to include the following measures:

- truck loads must not exceed legal limits;
- loads of material (i.e. excavated soil) must be centered in the cargo bed and either enclosed by vehicle covers or wetted to prevent wind from blowing materials out of the truck;
- trucks and trailers must be swept clean or hosed after unloading and before entering highway;
- mufflers, brakes, and all loose items on trucks must be maintained to minimize noise and ensure safe operation; and
- truck operations must be kept to quietest operating speeds: drivers must be advised to avoid downshifting during vehicle operations through residential communities. (Ex. 47, p. 4.10-13.)

Conditions **TRANS-2 and TRANS-3** require the Project Owner to obtain all necessary transportation permits for the transport of oversize equipment and encroachment permits for construction activity within the public right-of-way. Condition **TRANS-5** requires that all Project-related parking must be limited to designated parking areas. Condition **TRANS-6** requires the Project owner to repair any roadways damaged by oversized vehicles or pipeline construction.

With implementation of the Traffic Control Plan and the other measures described in the evidentiary record, REP construction traffic can be

accommodated on the routes discussed above and local roadways will not be significantly affected by REP-related traffic.

- The Project's natural gas pipeline route, known as "Alternative D", will exit on the west side of the site, proceed south along the western boundary of the Pleasant Grove Waste Water Treatment Plant (PGWWTP), then turn east along a proposed extension to Pleasant Grove Blvd. While PG&E will construct the pipeline, Roseville Electric will coordinate the activity to minimize adverse traffic impacts on the applicable roads. There is a potential for some minor impacts on traffic using the roads along the pipeline route, such as a temporary detour, but those impacts will be transitory and less than significant. (Ex. 47, p. 4.10-12.)

The 50-foot water pipeline connection between the REP and the adjacent PGWWTP will cross underneath the current alignment of Phillip Road. A new 800-foot wastewater discharge pipeline will be installed next to Phillip Road from the REP site to the existing effluent junction at the PGWWTP. The wastewater discharge pipe should be completed within one to two months. Although there may be some traffic impacts on Phillip Road during construction of the two water lines, the impacts are transitory and are considered insignificant. (Ex. 47, p. 4.10-12.)

2. Operation

During Project operation, 25 fulltime employees will generate about 35 roundtrip commute trips per day. This includes 25 roundtrips by employees and 10 roundtrips by vendors, consultants, and City of Roseville management personnel. On average, there will be three roundtrip truck deliveries per day. Existing roadways can accommodate this traffic increase without significant long-term impacts. (Ex. 47, pp. 4.10-13 and 4.10-14.)

Condition **TRANS-4** requires that the transport of hazardous materials to and from the REP site must be conducted in accordance with all applicable LORS, including compliance with all necessary permits, vehicle specifications, and driver training. Licensed transporters of hazardous materials will be directed to access the site via SR-65, Blue Oaks Boulevard, Fiddyment, and Phillip Roads. Compliance with existing state and federal standards will ensure that deliveries of hazardous materials such as aqueous ammonia are not likely to create adverse impacts to area roadways.[35] (Ex. 47, p. 4.10-16.)

Emergency vehicles would enter through the REP's main entrance on Phillip Road or a secondary entrance on the eastern side of the site. All the surrounding roadways currently operate and should continue to operate at LOS A or B. Emergency vehicles such as fire trucks and ambulances could approach the site from the east via Blue Oaks Boulevard and Fiddyment Road and from the south via Baseline and Fiddyment Roads. There is no evidence to indicate that the dispatch of emergency vehicles to the site would result in any impacts to traffic patterns in the Project vicinity. (Ex. 47, p. 4.10-16.)

Ground-Hugging Fog

As noted above, during its analysis Staff identified a potential traffic hazard posed by cooling tower plumes that could form ground fog and significantly reduce visibility for motorists using Phillip Road. (See **Traffic and Transportation Figure 3.**) The Staff analysis revealed a potential for ground fogging to occur approximately 10 to 15 hours per year during winter. (Ex. 47, p. 4.10-23 [Aspen 2004b].) The fog would be opaque, observable, and could occur anywhere within 4,000 feet of the cooling towers. (*Ibid*.) Staff alleged that the fog could significantly reduce visibility and increase the chance of a traffic accident. Staff's consultation with both Caltrans and private consulting engineers confirmed that, due to potential Project-related ground-hugging fog, there would

[35] See sections on **Hazardous Materials Management** and **Waste Management** in this Decision.

be potential adverse traffic safety impacts on local roads near the REP (Ex. 47, p. 4.10-14.) Both the consulting Caltrans engineer and the Staff witness contended that a fogging event of only a few minutes would affect local motorists, depending on the time of day and weather conditions.

Staff testified that the potential ground-hugging fog would significantly reduce visibility and adversely affect traffic safety on Phillip Road and on vehicles using Blue Oaks Boulevard after that road is extended to the west, as envisioned by the WRSP development.[36]

Staff testimony indicated that days in winter when the cooling tower generated ground fog would occur (i.e. 25 miles per hour (MPH) wind), would be in addition to days when the more common tule fog will form under different weather conditions (i.e. less than five MPH wind), and would thereby increase the number of days when fogging conditions would impact traffic safety on local roads. (Ex. 47, p. 4.10-15.)

In addition, Staff identified the potential for the ground fog to affect a planned high school near Phillip Road and other planned streets. The high school site is located approximately 2,300 feet from the REP site. The Roseville Joint Union School District (District) plans to open the school by 2010 and estimates that two-thirds of the high school students (2,200-2,500) will either drive to school or be driven by parents or friends, greatly increasing vehicular traffic in the area. (*Id.*)[37]

---

[36] City of Roseville staff expects that Blue Oaks Boulevard will be extended to Phillip Road by 2008. City staff has also notified Commission staff that subdivision maps have been submitted for building over 2,000 residences west of Fiddyment Road within a couple of years.

[37] This would add an additional 1452 to 1650 round-trip vehicle trips (.66 multiplied by 2200 and 2500 respectively) during the morning peak traffic period. The morning commute may occur during the time when the cooling tower plumes could generate ground fog. In such a case, Staff asserts that cooling tower induced ground fog would create a potential safety hazard, particularly for young inexperienced drivers. (Ex. 47, p. 4.10-15.)

Based on the number of hours that the ground fog could occur annually (primarily in winter), the potential duration of the fog event, and the increased traffic on local roads, Staff proposed mitigation in Condition of Certification **TRANS-7.** That measure, as originally proposed, required the cooling towers to be built with plume abatement technology. The purpose of the plume abatement technology would be to significantly reduce or eliminate the potential for any ground fogging from the REP cooling towers. Staff estimated the cost for the installation of plume abatement technology would be $1.3 million more than the cost of a standard cooling tower without a plume abatement mechanism (Ex. 47, p. 4.10-15 [Aspen 2004a]). Staff argued that the increased cost should be balanced against the potential for a serious injury during one or more traffic accidents.[38]

However, Applicant found Staff's cost estimates to be significantly lower than actual costs to install a plume abatement system. (1/06/05 RT 74.) Furthermore, RE argued that, while Staff had completed modeling to determine the likelihood of ground-hugging fog caused by the Project, Staff had not identified the risk of an accident resulting from the fog. (1/06/05 RT 47.) RE voiced concern that the Staff approach could add millions in cost to the Project to mitigate a problem that may turn out not to exist. This would be true if the modeling did not reflect actual ground conditions or if Project-related ground fog was insignificant in terms of traffic safety.

However, rather than dispute the need for mitigation entirely, RE offered an alternative to Staff's plume abatement proposal. Applicant proposed to build the Project "ready-for-abatement". That is, to build the cooling tower in a way that allows abatement equipment to be put in at a later time. (1/06/05 RT 74.) In that way, minimal revisions would be required to add an abatement system or plume-measuring instrumentation later if it proved to be needed. (1/06/05 RT 67.) Applicant claimed that this was not an insignificant offer on its part. Cooling

[38] Staff also considered the wastewater treatment plant in its ground fogging modeling analysis, but concluded that the two phenomena (i.e. ground fogging from the cooling towers and steam from the ponds at the treatment plant) are unlikely to coincide. (Ex. 53.)

basins and pumps would need to be sized differently than the original design, thus adding approximately $500,000 in cost to the Project. (Id.) The RE also noted its concern about the wording of the "trigger mechanism" that would determine if ground-hugging fog due to the Project would require the installation of expensive mitigation. (Id.)

The parties continued to negotiate the language of Condition of Certification **TRANS-7** even after the evidentiary hearing. Their final agreement is reflected in their respective post-hearing briefs and in the language of Condition **TRANS-7**, which we have incorporated below. As adopted, the Condition requires RE to construct the Project in an abatement-ready manner. RE must also develop a plan for the installation and operation of video cameras, video recorders, visibility range measurement equipment and meteorological data collection equipment to monitor for the presence of cooling tower generated fog on local roadways. Objective standards used by Caltrans will be applied to determine the degree of any degradation of traffic visibility resulting from ground-hugging fog caused by the Project. If such degradation occurs, RE will install one of two alternatives: either an automatic instrumentation system, which will throttle back the Project to eliminate the fog; or the prescribed plume abatement equipment.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find and conclude as follows:

1. The additional traffic associated with construction and operation of the Roseville Energy Project (REP) will not have a significant effect on existing levels of service for roadways in the Project vicinity.
2. Development and implementation of a Construction Traffic Control Program will offset any temporary, short-term increases in congestion resulting from construction of the Project and its linear facilities.
3. The construction of the Project's linear alignments will not result in a significant effect on traffic due to the temporary nature of the construction period and the changing locations for construction activities.

4. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the Project will be mitigated to insignificance by compliance with applicable state and federal laws.

5. Intermittent ground fogging which may result from cooling tower plumes presents a potential significant traffic safety hazard for area motorists. Traffic and Transportation **TRANS-7** describes objective and adequate steps to mitigate this potential significant hazard.

6. Implementation of the Conditions of Certification, below, ensures that Project-related traffic shall conform with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision..

The Commission, therefore, concludes that construction and operation of the Project, as mitigated in accordance with the Conditions of Certification below, will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system.

CONDITIONS OF CERTIFICATION

TRANS-1 The Project Owner shall develop a construction traffic control plan that limits peak hour construction-period truck and commute traffic in coordination with the City of Roseville Public Works Department. The Project Owner shall also consult with Placer County, Caltrans, and the City of Roseville staff dealing with traffic regulation enforcement, as outlined in Appendix A of a letter from the City of Roseville, dated August 18, 2004. (Ex. 34.). Specifically, the overall traffic control plan shall include the following:

- Require the primary contractor and major subcontractors to advise workers develop and implement a construction employee carpool program, and to avoid using Foothills Boulevard;
- Through worker education and shift scheduling, maximize worker commute trips during off-peak hours (off-peak hours are (1) before 7:00 AM; (2) between 9:00 AM and 4:00 PM; and (3) after 6:00 PM or other hours as agreed to by the CPM;
- Schedule heavy vehicle equipment and building material deliveries as well as the movement of materials and equipment to the site, including the adjacent lay-down area to occur during off-peak hours; and

The construction traffic control plan shall also include the following restrictions on construction traffic addressing the following issues for linear facilities:

- Timing of water and gas pipeline construction shall ensure that all pipeline construction affecting local roads shall take place outside the peak traffic periods to avoid traffic flow disruptions, or other hours as agreed to by the CPM;
- Signing, lighting, and traffic control device placement;
- Temporary travel lane closures and potential need for flagmen;
- Maintaining access to adjacent residential and commercial properties; and
- Emergency access.

Verification: At least 45 days prior to start of site mobilization, the Project Owner shall provide to Placer County, the City of Roseville, and the California Highway Patrol for review and comment and to the CPM for review and approval, a copy of its construction traffic control plan.

TRANS-2 The Project Owner shall comply with California Department of Transportation (Caltrans) and other affected jurisdictions' limitations on vehicle sizes and weights. In addition, the Project Owner or their contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the Project Owner shall submit copies of any oversize and overweight transportation permits received during that reporting period. In addition, the Project Owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-3 The Project Owner shall ensure compliance with Caltrans and other relevant jurisdictions' limitations for encroachment into public rights-of-way, and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In the Monthly Compliance Reports, the Project Owner shall submit copies of any encroachment permits received during that reporting period. In addition, the Project Owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-4 The Project Owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of all hazardous materials, and that all federal and state regulations for the transport of hazardous materials are observed.

Verification: The Project Owner shall include in its Monthly Compliance Reports during construction and Annual Compliance Reports during operations copies of

all permits and licenses acquired by the Project Owner concerning the transport of hazardous materials.

TRANS-5 Prior to the construction of the power plant and all related facilities, the Project Owner shall develop a parking and staging plan for all phases of Project construction, to enforce a policy that all Project related parking occurs onsite.

Verification: At least 30 days prior to the start of site mobilization, the Project Owner shall submit the plan to the City of Roseville Public Works staff for review and comment, and to the CPM for review and approval. The material submitted to the CPM shall include documentation of the City's review and comments. Monthly Compliance Reports submitted to the CPM shall describe the Project Owner's actions to ensure that this condition is being met.

TRANS-6 Prior to the beginning of site mobilization activities, the Project Owner shall prepare a road mitigation plan for any roads affected by oversize or overweight vehicles and underground pipeline construction to the City of Roseville Public Works Department, and the CPM. The intent of this plan is to ensure that any roads affected by oversize or overweight vehicles and underground pipeline construction will be repaired and reconstructed to original or as near original condition as possible. This plan shall:

- Document the pre-construction condition of the affected roads in the region of the site (i.e., Phillip Road and Fiddyment Road) and those along a pipeline route (i.e., Phillip Road, Blue Oaks Boulevard, Fiddyment Road, and Baseline Road). Prior to the start of site mobilization, the Project Owner shall provide to the CPM photographs or videotape of the affected roads.
- Document any portions of roads that may be inadequate to accommodate oversize or large construction vehicles, and complete remediation measures that are necessary;
- Provide appropriate bonding or other assurances to ensure that any damage to a road due to construction activity will be remedied by the Project Owner;
- Relocate utility poles if necessary, to insure that adequate clear zones are established along the property frontage; and
- Reconstruct portions of roads that are affected by Project construction including the use of oversize or overweight construction vehicles, and the installation of underground utilities.

Verification: At least 90 days prior to the start of site mobilization, the Project Owner shall submit a road mitigation plan focused on restoring the roads to their pre-Project condition to Placer County and the City of Roseville for review and comment, and to the CPM for review and approval.

At least 90 days prior to the start of pipeline construction, the Project Owner shall submit a separate road mitigation plan to the City of Roseville Public Works Department for review and comment and to the CPM for review and approval at least 30 days prior to the start of site mobilization.

Within 90 days following the completion of construction, the Project Owner shall provide photo/videotape documentation to the City of Roseville Public Works Department, and the CPM that the affected roads have been restored to their pre-Project condition, consistent with local LORS.

TRANS-7 The Project Owner shall design and construct the cooling towers to be able to accommodate plume abatement technology.

The Project Owner shall develop a plan for the installation and operation of video cameras, video recorders, visible range measurement equipment or methods, and meteorological data collection equipment to monitor for cooling tower generated ground-hugging plumes on local roadways.

Prior to commencement of power plant operation, the Project Owner shall install video cameras, video recording equipment, visible range measurement equipment or methods, and meteorological data collection equipment to collect windspeed, relative humidity and temperature, and shall operate the equipment during the months October through March in accordance with the approved monitoring plan.

If the cooling towers generate ground-hugging plumes that reduce driver sight distance visibility (using sight distance measurement standards in the CalTrans Highway Design Manual, 2001) to less than 150 feet on local roadways with posted speed limits up to 30 mph, or to less than 300 feet on local roadways with posted speed limits of up to 50 mph, or a vehicle accident is reported that identifies a ground-hugging plume as a contributing factor, the Project Owner shall be required to install either of the following:

1. Plume abatement technology with a dry-cooling section that has a stipulated plume abatement design point equal to the temperature and relative humidity recorded at the time that a ground-hugging plume that reduced the sight distance visibility below the levels described above were observed, or other abatement design point that the cooling tower manufacturer will guarantee to mitigate the ground-hugging plumes to visibility distances that are greater than the levels described above; or

2. An automatic control system that reduces plant operations to ensure that ground-hugging plumes do not form at the temperature, relative humidity and wind speed recorded at the time that a ground-hugging plume was

observed that reduced the sight distance visibility below the levels described.

The Project Owner shall continue the ground-hugging plume monitoring program until either plume abatement technology or an automatic control system as described above are installed or for three consecutive winters without observations of ground-hugging plumes that meet the sight distance visibility requirements above. Ground hugging plume monitoring may be extended beyond three years by the CPM if either the power plant operating profile during the winter monitoring periods is less than 50 percent of its capacity factor or the meteorological conditions were not conducive to plume formation. If there have been no observed plumes within the three year period, the CPM and Project Owner shall meet to discuss the need for continued monitoring.

If during the monitoring program a ground-hugging plume has caused sight visibility to fall below the distances stated above on a local roadway, or a vehicle accident has occurred which reports a cooling tower generated ground-hugging plume as a contributing factor, the Project Owner shall immediately modify plant operations as necessary to prevent ground-hugging plumes until operation of the selected ground-hugging plume prevention option and shall notify the CPM. If the Project Owner elects to install the automatic control system, the Project Owner shall continue plume monitoring during months in which the automatic control system is operating for a period of three years after operation of the automatic control system. Should the automatic control system fail to prevent ground-hugging plumes then the Project Owner shall either install the plume abatement technology or readjust the automatic control system to prevent ground-hugging plumes. In the event the automatic control system is readjusted, the Project Owner shall continue plume monitoring during months in which the automatic control system is operating for a period of three years after readjustment.

If the Project Owner receives a complaint related to ground-hugging plumes, the Project Owner shall notify the CPM so that a CPM investigation of the complaint can be initiated, and, if warranted, remedial actions can be identified. Remedial actions may include additions or modifications to plume monitoring equipment and/or methods.

Verification: At least 60 days prior to ordering of the cooling towers, the Project Owner shall provide to the City of Roseville City Engineer for review and comment and to the CPM for review and approval, the engineering specifications for the cooling towers that demonstrate that plume abatement technology can be installed at a later date if required. The material submitted to the CPM shall include a copy of the letter accompanying the transmittal to the City.

Prior to July 1 of the first year of plant operation, the Project Owner shall provide to the City of Roseville City Engineer for review and comment and to the CPM for

review and approval a plan to monitor for cooling tower generated ground-hugging plumes on local roadways. The CPM shall consider the meteorological conditions in determining when monitoring equipment will operate. The material submitted to the CPM shall include a copy of the letter accompanying the transmittal to the City.

The Project Owner shall provide to the CPM, within 30 days of the end of each ground-hugging plume monitoring month (October through March) a report that provides evidence of the existence or non-existence of cooling tower generated ground-hugging plumes on local roadways, the visibility distance data recorded during such ground-hugging plume events, if any, the power plant's capacity factor for each hour of the month when the power plant was operating, and the meteorological data for that month. This report shall be provided on electronic media (CD, diskette, or memory stick).

If the Project Owner receives a complaint related to ground-hugging plumes, the Project Owner shall notify the CPM within 24 hours to initiate CPM investigation of the complaint. If at any time during each year's ground-hugging plume monitoring period the Project Owner or the CPM determines that the Project is causing ground-hugging plumes on local roadways that lower visibility below the standards listed in this condition, or a vehicle accident has occurred which reports a cooling tower generated ground-hugging plume as a contributing factor, the Project Owner shall within 30 days provide to the CPM an installation schedule for the ground-hugging plume prevention option chosen, and within 150 days provide to the City of Roseville City Engineer for review and comment and to the CPM for review and approval, the engineering specifications for the ground-hugging plume prevention option chosen (abatement technology and/or automatic control system). If the Project Owner learns that the Project is causing ground-hugging plumes on area roadways that lower visibility below the standards listed in this condition, the Project Owner shall notify the CPM within 24 hours.

Page Intentionally Left Blank

C. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings. (Cal. Code of Regs., tit. 14 § 15382, Appendix G.)

In order to make this assessment, the CEQA guidelines suggest four pertinent inquiries to determine whether the project would:

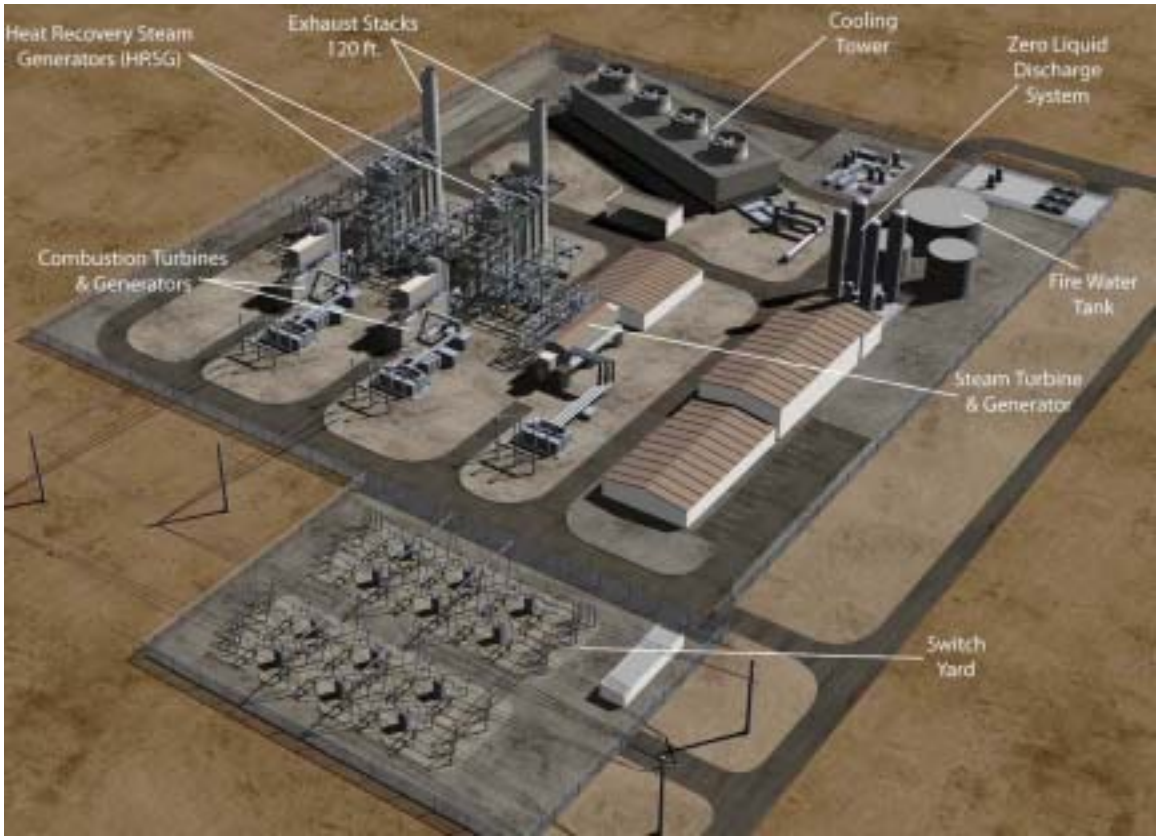
- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or night time views in the area. (14 Cal. Code of Regs. Appendices G and I.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

A visual resources analysis has an inherently subjective aspect. However, the evidence indicates that the use of an ascertainable methodology is also necessary to accurately evaluate visual impacts. The evidence describes this methodology as including an assessment of compliance with applicable laws, the extent of any alteration to the existing viewshed including blockage of desirable views, creation of a decrease in visual quality, and the introduction of a substantial change to nighttime or daytime lighting levels. The type of visual change, duration of impact, viewer sensitivity, and number of viewers are additional factors relevant to a visual resources analysis. (Ex. 11, pp. 4.11-2 to 4.11-5.)

The proposed power plant would be situated within a 40-acre property located on Phillip Road immediately north of the Pleasant Grove Waste Water Treatment Plant (PGWWTP). The power plant and associated electrical switchyard would occupy approximately nine acres of this property. The major visible components of the power plant would include:

- two 120-foot tall heat recovery steam generator (HRSG) exhaust stacks,
- two 53-foot tall and 93-foot long HRSG units,
- two 35-foot tall (including the inlet air filters) and 57-foot long gas combustion turbine generators,
- a 45-foot tall steam turbine generator (including pedestal),
- a 44-foot tall and 193-foot long four-cell cooling tower,
- two 80-foot tall ZLD system brine concentrator stacks, and
- two 70-foot tall ZLD system crystallizer stacks.



The combustion turbines and generator housing, the HRSGs and exhaust stacks, and the cooling tower are proposed to be painted or treated in neutral gray colors to blend in with the sky. The switchyard structures would be galvanized metal to blend with the sky and the color of the power plant structures. The various buildings at the REP site – the administration/control building, warehouse/maintenance building, water treatment building, plant electrical building, and chemical feed building – are proposed to have off-white colored walls and light tan roofs to complement the major power plant structures and to blend with the golden colors of the surrounding grasslands. The large storage tanks – the fire water, demineralized water, and cooling tower water blowdown storage tanks – would be grouped together and are proposed to be painted neutral gray colors. An eight-foot high chain-link fence would surround the power plant site. (Ex. 47, p. 4.12-3.)

Linear Facilities

The REP would connect with a future 60 kV double-circuit transmission line along Phillip Road that was permitted as part of the West Roseville Specific Plan (WRSP). The REP switchyard would be connected to this 60 kV transmission line via connector lines about 100 feet long and confined to the REP site. (Ex. 47, p. 4.12-4.)

The REP would require construction of several underground pipelines. Natural gas would be delivered via one of two alternative pipeline routes. A recycled water pipeline would be constructed underneath Phillip Road to deliver cooling water from the PGWWTP to the REP. A sanitary sewer pipeline would be built along Phillip Road to the PGWWTP influent junction structure about 800 feet east of the site. A storm water outfall would run east to northeast for about 340 feet to an unnamed tributary to Pleasant Grove Creek. The western portion of the outfall would be an underground pipeline and the eastern portion would be an open ditch. (*Ibid.*)

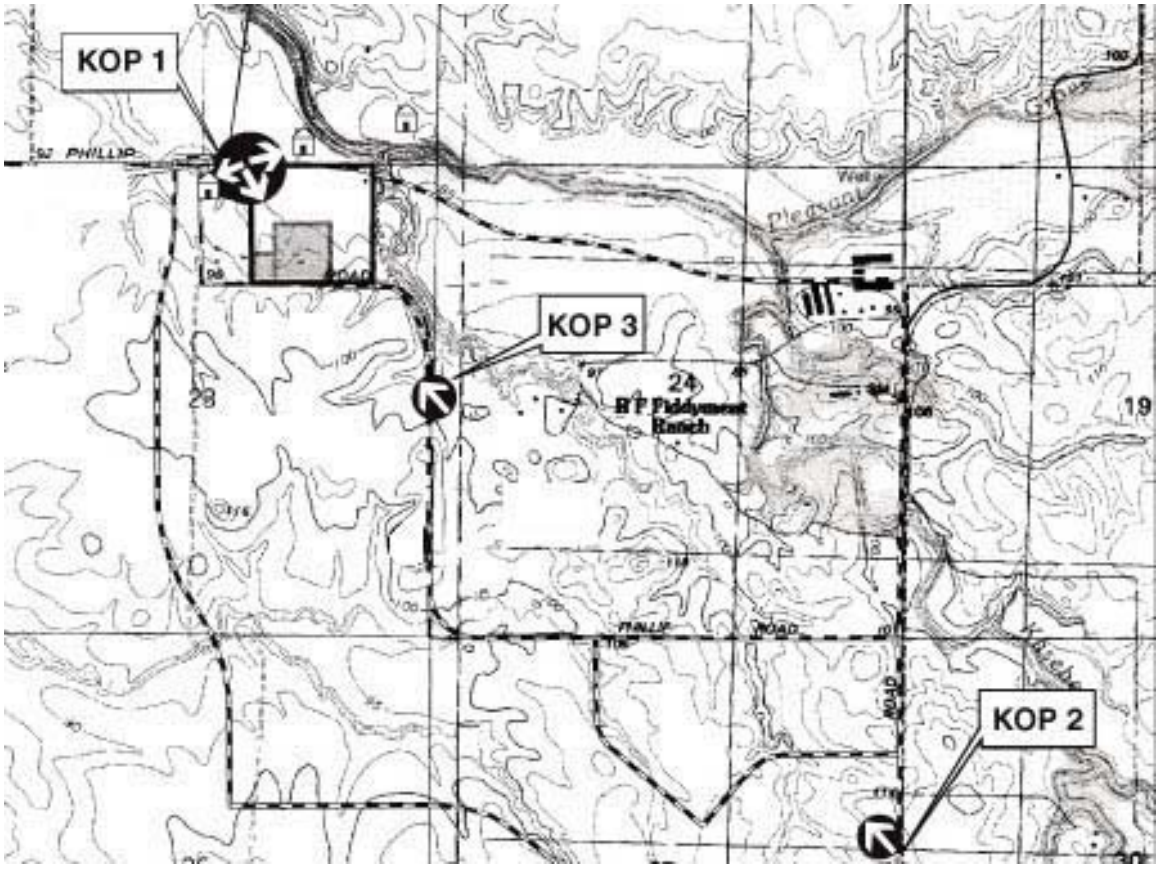
Construction Laydown Areas

Construction of the proposed power plant and associated facilities would cause temporary visual impacts due to the presence of equipment, materials, and workforce. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. An area immediately east of the REP site would be used for temporary construction offices and for construction worker parking. An area southwest of the REP site and adjacent to the PGWWTP property would be used for temporary storage of construction equipment and materials. Construction of the power plant is expected to last for 18 to 20 months. (*Ibid.*)

The visual impacts of constructing the power plant and pipelines would not be significant because the visual disturbances would be temporary and would only be highly visible to one residence with an unobstructed view of the REP site and construction areas, and because the present visual quality of the view from this residence is moderately low. These activities would also be visible to the low number of travelers on local roads, but because none have any scenic designation, and the visual disturbances are temporary, the impacts on these viewers would also not be significant. (Ex. 47, p. 4.12-9.)

KEY OBSERVATION POINTS

The Applicant, in consultation with Staff, selected key observation points (KOPs) to represent sensitive viewing areas that would be most affected by the proposed project.



KOP 1 – Northwest Corner of the REP Property

KOP 1 is located at the northwest corner of the 40-acre REP property and was chosen to represent the view of two rural residences located north and northwest of the REP site. Only the residence located about 1,250 feet due north of the center of the REP site would have an unobstructed view of the power plant. Open undeveloped grasslands, although not particularly unique, are an aesthetically pleasing landscape feature in the view toward the REP site, providing seasonally contrasting colors to the riparian vegetation located to the east along Pleasant Grove Creek. However, the REP site has been degraded by the PGWWTP construction activities and the rural view from KOP 1 has already been somewhat compromised by the industrial buildings at the PGWWTP. (Ex. 47, p. 4.12-6, 7 &10.)

As seen from KOP 1, the REP would introduce prominent geometric forms with industrial character into a setting without similar features. The PGWWTP buildings are visible in the background but they are fairly low on the horizon and are not prominent in the view from KOP 1. The structural characteristics of the project, including the prominent vertical elements of the two turbine/HRSG exhausts, would contrast highly with the flat, horizontal form of the existing landforms. The predominantly neutral gray colors of the project depicted in the visual simulation would contrast moderately with the blue, sky backdrop and the seasonally changing colors (green to tan and brown) of the surrounding grasslands. Overall, the REP would cause a high degree of visual contrast with the existing setting visible from KOP 1. (Ex. 47, p. 4.12-11.)

The power plant structures would dominate the existing structures at the PGWWTP and would occupy a large portion of the landscape visible from KOP 1. The project structures would be seen against the sky, thereby increasing the conspicuousness of the proposed REP. Other than the sky, the project would not block any features with visual quality higher than that of the power plant itself.

The project would cause a moderately high degree of overall visual change (as a result of its contrast, dominance, and view blockage) to the existing setting as seen from KOP 1. The proposed project would be seen by the one residential viewer that would have an unobstructed extended view of the project; the visual impact of the REP structures is considered adverse but not significant. (*Ibid.*)

KOP 2 – Fiddyment Road South of Del Webb Boulevard

KOP 2 is located on Fiddyment Road about 1100 feet south of its intersection with Del Webb Boulevard and about 1.6 miles southeast of the REP site. This KOP was chosen to represent the view of travelers along Fiddyment Road, as well as residents in the Del Webb Sun City Roseville retirement community, which borders Fiddyment Road to the east. (Ex. 47, p. 4.12-7.)

Sun City consists of single-family dwellings interspersed with open riparian corridors and other open spaces, a large golf course, and a community center. The community is separated from Fiddyment Road by a large concrete wall, and very few if any of the residences within the community are oriented such that their residents would have a view towards the project site. The Sun City community is relatively new, and was constructed with attractive landscaping along its arteries and open spaces, including along the east side of Fiddyment Road, resulting in a generally pleasing, suburban character. (*Ibid.*)

Further south of KOP 2 and south of Sun City is a large two-story retirement apartment complex. Residents of a few of the apartments in this complex have a view towards the project site, about 2 miles away to the northwest, but most of the apartments have no views towards the project site. As the landscaping trees planted along the east side of Fiddyment Road mature, they should provide even greater screening of views toward the project site from residences located east of the road. (*Ibid.*)

Travelers along Fiddyment Road and the few nearby residents with views towards the project site now see large fields, which dominate the foreground and middleground of the view from KOP 2, with lines of trees and the structures of the PGWWTP in the distant background. A power line along the west side of Fiddyment Road is also visible from the area of KOP 2. (*Ibid.*)

Approximately 4400 motorists per day have some view of the project site as they travel northbound on Fiddyment Road between Baseline Road and Phillip Road. Groves of oak trees block views of the project site for travelers further north on Fiddyment Road. From KOP 2, the most visible portion of the REP would be the 120-foot tall exhaust stacks, which would be located about 1.8 miles to the northeast at an approximately 45 degree angle to the centerline of the roadway. The moderate number of motorists, their high rate of speed, the over 1.5-mile distance to the project, and the nearly peripheral angle of view from the roadway all contribute to an overall moderately low degree of exposure for motorists on Fiddyment Road. (Ex. 47, p. 4-12-8.)

The only dominant existing structure in the view is the power line adjacent to west side of Fiddyment Road. The foreground and middleground of the view is dominated by open grasslands. In the background are lines of trees near the horizon, and the PGWWTP structures. Very few other structures are visible in the background of the views from KOP 2. (Ex. 47, p. 4.12-11.)

As seen from KOP 2, the simple geometric forms and straight lines of the project structures would be similar to the forms and lines of the PGWWTP to the south of the REP site. The HRSG exhaust, brine concentrator, and crystallizer stacks would be similar to other vertical elements in the view from KOP 2. The medium-gray color depicted on the majority of the structures would blend with the sky and contrast moderately with the seasonally changing colors of the field (green to tan and brown) and the seasonally green trees in the foreground. (*Ibid.*)

The power plant structures would appear comparable in size to the structures of the PGWWTP. The project would occupy a very small portion of the landscape visible from KOP 2. Although the HRSG units and the stacks would be seen against the sky, increasing the visibility of the proposed project somewhat, overall the REP would be a subordinate feature in the view from KOP. (Ex. 47, p. 4.12-12.)

The project structures would block from view a very small portion of the sky. The project would also block from view some trees in the background, but these trees are a relatively small feature in the view from KOP 2. The project would cause a low degree of overall visual change to the existing setting as seen from the area of KOP 2. Since the visual change that would be perceived from KOP 2 would not substantially degrade the existing visual quality of the area, the project would result in an adverse but less than significant impact. (*Ibid.*)

IMPACTS OF COOLING TOWER AND COMBUSTION EXHAUST PLUMES

The proposed REP is a combined-cycle power plant that would include a four-cell, 44-foot-tall cooling tower and two 120-foot tall turbine/HRSG exhaust stacks. Under certain weather conditions, visible water-vapor (steam) plumes would emanate from both the cooling towers and exhaust stacks. REP has not proposed any methods to abate or prevent the formation of the visible plumes. (Ex. 47, p. 4.12-12 to 4.12-16.)

Since water vapor plumes are generally associated with heavy industrial land uses, they tend to be regarded negatively by visually sensitive observers and as such could have an adverse effect on visual resources in the vicinity of the project. The severity of the impacts created by the project's visible plumes depends on several factors, including the frequency and physical size of the plumes, the sensitivity of the viewers who will see the plumes, the distance between the plumes and the viewers, the visual quality of the existing viewshed, and whether any scenic landscape features would be blocked by the plumes.

In past proceedings, the Commission and the CEC staff have used a plume frequency of 20 percent of seasonal (October through March for this case) daylight no rain/fog high visual contrast (i.e. "clear") hours to determine potential plume impact significance. If modeling predicts seasonal daylight clear plume frequencies greater than 20 percent, the second step in staff's analysis is to calculate the dimensions of the clear hour plumes and then assess the visual change (in terms of contrast, dominance and view blockage) that would be caused by the 20th percentile plume dimensions. For this case, staff considers the 20th percentile plume to be the reasonable worst case plume dimensions on which to base its visual impact analysis. (*Ibid.*)

The 20th percentile plume is the smallest of the plumes that are predicted to occur zero to 20 percent of the time, and it is the largest of the plumes that are predicted to occur greater than 20 percent of the time. In other words, 80

percent of the time the dimensions of the clear hour plumes would be smaller than the 20th percentile plume dimensions. Cooling tower plumes as large as or larger than the 20th percentile clear hour plume are predicted to occur approximately 174 hours per year on average. The 20th percentile cooling tower plumes are predicted to be a maximum of 144 feet long and 175 feet tall to 253 feet long and 283 feet tall (for the Alstom GTX100 turbines). (*Ibid.*)

Staff did not identify any other existing sources of industrial plumes in the project viewshed. There could be the potential for fog forming above the waste water ponds at the PGWWTP as cold, dry air moves across the warmer water.

Due to the openness of the project site and surrounding area, the high frequency and large sizes of the REP water vapor plumes during peaking operations would cause a noticeable but intermittent change in the landscape character when viewed from nearby vantage points. The plumes would be most prominent as viewed from within the foreground distance zone (up to one-half mile). The area within approximately one-half mile of the site is sparsely populated. Photo simulation presents the reasonable worst case REP cooling tower and HRSG plumes. (*Ibid.*)

KOP 3 – Future Viewers in the West Roseville Area

To assess the impacts of the vapor plumes on future viewers in the West Roseville Area, staff prepared visual simulations of the current view and simulation of the Alstom turbine's 20th percentile plume as it would appear from a viewpoint (KOP 3) along Phillip Road, approximately 2100 feet southeast of the REP cooling tower. (Ex. 47, p. 4.12-18.)

KOP 3 was selected to approximate the view that would be available to viewers as they drive north on Phillip Road to enter the future Regional Sports Park, a 75-acre city-wide park to be built east and southeast of the REP site, in the areas immediately east of Phillip Road. The Regional Sports Park and adjacent high school site will include various joint-use recreational facilities such as soccer fields, baseball fields, a soccer/football stadium, tennis courts, softball fields, and outdoor swimming pool, basketball courts, and a 400 meter track. (*Ibid.*)

From KOP 3 and from vantage points further south along Phillip Road, the 20th percentile plumes would be noticeable to viewers as they drive north to access the sports park. Further north, the road dips down and the berm built along the east side of the PGWWTP would obscure views of the plumes. Views of the plumes would be further blocked as the trees planted along the east boundary of the PGWWTP continue to grow. (*Ibid.*)

Although the plumes would be prominent, they would not dominate the wide, panoramic view available from the viewpoint depicted in the figures. Other than the sky, the plumes would not block observed or documented important views or landscape features. The water vapor plumes would not substantially degrade views from the Regional Sports Park because of their varying visibility from the area and because they would not dominate the setting or block important visual features other than the sky when present.

From residences in the areas to the east and southeast of the REP site, some of which are expected to be built prior to operation of the REP, the plumes would appear smaller than those depicted in the simulations because the residential areas are located farther away from the cooling tower than KOP 3. Furthermore, as shown on Tentative Subdivision Maps that have been filed for the first phase of development (representing approximately 2100 housing units), residences are oriented such that most views in the direction of the REP site likely would be blocked by neighboring houses or the masonry walls to be built behind residences that would border on major collector roads (such as the future Hayden Parkway east of the REP). In addition, as shown in the West Roseville Specific Plan, trees would be planted along both sides of the collector roadways, and in the case of Hayden Parkway, also within the median. This landscaping as it grows would also screen views from the residential areas toward the REP site. (*Ibid.*)

KOP 1 – Northwest Corner of the REP Property

The only existing residences within this area are the three rural residences located north of the REP site, whose view is represented by KOP 1, and the R.F. Fiddyment Ranch, which is located about 2500 feet southeast of the site. (Ex. 47, p. 4-12-16, 17.)

The plumes would appear as prominent, billowing linear-to-irregular forms with irregular and changing outlines. The plumes would rise vertically on calm days, and diagonally across the sky when the wind is blowing. The movement of the plumes would be noticeable from foreground viewing locations, and less noticeable from middleground to background viewing locations.

Under clear sky viewing conditions, the white cooling tower plumes would contrast highly with the blue sky background. The vertical and diagonal, irregular and changing form of the plume would distinguish the plume from the broad, horizontal, natural landforms and the generally uniform appearance of sky. As seen from KOP 1, the plumes would cause a high degree of visual contrast with the existing setting. (*Ibid.*)

The REP plumes would cause a moderately high degree of overall visual change (as a result of their contrast, dominance, and view blockage) to the existing setting as seen from KOP 1. Taking into account that the degree of visual change caused by the reasonable worst case plumes would be experienced by very few residential viewers (the three residences immediately north of the site and the R.F. Fiddyment Ranch to the southeast), the visual impact of the visible plumes is considered adverse but not significant. (*Ibid.*)

KOP 2 – Fiddyment Road South of Del Webb Boulevard

For any resident or traveler in the area of KOP 2, the reasonable worst case plumes would be a relatively small feature in the broad, panoramic landscape off

to the northwest about 1.5 miles away. From this viewpoint, the plumes would not block any view of important visual resources in the area. The plumes would not greatly contrast with the surroundings because of their relatively small size compared to other distinct landscape features and to the broad landscape, and their white color would blend somewhat with the haze close to the horizon. (Ex. 47, p. 4.12-17.)

When considered within the context of the moderate overall sensitivity at KOP 2, the visual change caused by the plumes would not substantially degrade the existing visual quality of the view, and therefore would result in an adverse but less than significant visual impact. (*Ibid.*)

To ensure that plumes would not have the potential to cause significant visual impacts, staff proposed Condition **VIS-2** to ensure that the cooling tower is designed and operated as was modeled in the FSA analysis. This condition addresses the design of the "wet" section of the cooling tower and therefore does not conflict with condition **TRANS-7**, which deals with the design of a "dry" section of the cooling tower to limit the formation of "ground hugging" plumes that could cause a traffic safety problem on nearby roadways in West Roseville (please refer to the **Traffic and Transportation** section). (Ex. 47, p. 4.12-19.)

Light or Glare

Currently there are no sources of nighttime lighting at the REP site itself. However, there are sources of nighttime lighting in the vicinity of the site that are visible from KOPs 1 and 2, including streetlights along Fiddyment Road and security and operations lighting at the PGWWTP. The REP project would require nighttime lighting for operational safety and security. If project lighting were uncontrolled, the resultant direct light trespass and uplighting to the nighttime sky could cause significant adverse visual impacts on nearby sensitive visual receptors, such as the residences in the KOP 1 area, and in the case of

uplighting, adverse impacts on more distant visual receptors too, such as those near KOP 2. (Ex. 47, p. 4.12-19.)

RE has committed to minimizing offsite lighting impacts (Ex. 1, pages 8.13-11, 8.13-13, and 8.13-16.). Specifically, exterior lights would be hooded to prevent direct illumination of the night sky. In addition, lights would be directed downward and situated and designed (shielded) to prevent dispersal of direct light onto adjacent properties. High illumination areas not occupied on a regular basis and not required to be lit for security would have switches or motion detectors to light these areas only when occupied. Illumination levels would be limited to that required for worker safety and security. Thus, the REP project would not create a substantial new source of light or glare that could adversely affect nighttime views. Condition of Certification **VIS-3** would require a project lighting plan to ensure that the measures proposed by RE are properly implemented. (*Ibid.*)

The applicant proposes to paint all major project structures in neutral colors to blend with each other and the surrounding environment. The predominately gray project colors would blend well with the sky, helping the plant fade into the background when seen from a distance. Alternatively, a color scheme similar to that used at the PGWWTP, which has buildings painted/treated in a mix of gray and tan colors.

Where feasible, the applicant would treat structures visible offsite with non-reflective paints and use embossed or corrugated surfaces. Condition of Certification **VIS-4** would require a structural surface treatment plan to ensure that the measures proposed by RE are properly implemented. With the mitigation measures of Condition **VIS-4**, the REP would not be a source of substantial glare that could adversely affect daytime views in the project area. (*Ibid.*)

CUMULATIVE IMPACTS

The PGWWTP is the only existing project in the immediate vicinity of the REP site. The REP in combination with the PGWWTP would increase the industrial character of the primarily rural, agricultural area. Looking from KOP 1, the PGWWTP is not dominant in the view as the buildings have a low profile and are partially screened from view by the berm that was constructed along the northern boundary of the PGWWTP along Phillip Road. Landscaping has been planted around the PGWWTP which over time will reduce the visibility of the waste water treatment plant buildings. The REP would appear much more massive in the view from KOP 1 because it includes structures that are larger than the PGWWTP buildings, and it would be located closer to this viewpoint. However, the cumulative visual impact of the REP and the PGWWTP is not considered significant from KOP 1 because the viewpoint represents so few sensitive viewers, the present visual quality is moderately low, and the REP would block much of the PGWWTP buildings from view but would not block any important scenic resources. (Ex. 47, p. 4.12-20, 21)

The existing view from KOP 2 is largely dominated by pasture land in the foreground and middleground of the view. The PGWWTP is located about 1.25 miles northwest of KOP 2 so it is not very noticeable from this viewpoint. The only dominant structure in the view is the electric distribution line that runs along the west side of Fiddyment Road. Because few if any residences in the area are oriented such that they would have views of the REP project, because the REP site is currently open space with no dominant structures near it, and because the current view is of moderately low to moderate visual quality, the cumulative visual impact of the REP in combination with existing projects is not considered significant from KOP 2. (*Ibid.*)

The West Roseville Specific Plan envisions approximately 8,400 new residential units in the areas west, south, east, and northeast of the proposed REP site, as well as some general and light industrial development immediately west and

south of the PGWWTP. The WRSP would substantially change the visual character of the area surrounding the REP site. As seen from KOP 1, the REP project would substantially contribute to this change in character due to its proximity to the viewpoint and large mass, but because the viewpoint represents so few existing sensitive viewers, the REP would not combine together with the WRSP to cause significant cumulative visual impacts. The development proposed in the WRSP would block views of the REP project from the KOP 2 area, so the REP would not combine together with the WRSP to cause significant cumulative impacts on existing viewers at this viewpoint.

Finally, the evidence uniformly establishes that the project will not create a new source of substantial light or glare that would adversely affect day or night time views in the area. Project light fixtures will be restricted to areas as required for safety, security, and operations. Lighting will be directed on-site and shielded from public view. Non-glare fixtures and switches, sensors, and timers (to minimize the time that lights not needed for safety and security are on) will be used. (*Ibid.*)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find and conclude as follows:

1. The project area posseses no notable visual features, scenic vistas, or visual quality.
2. The REP project does not substantially degrade the existing visual character or quality of the site and its surroundings.
3. Construction of the project's linear facilities will cause temporary visual impacts, but no permanent visual impacts will result.
4. The primary project components that could affect visual resources include the heat recovery system generators (HRSG), HRSG exhaust stacks, the steam turbine generator, and the cooling tower.

5. The project owner will implement appropriate mitigation measures to reduce or eliminate visual impacts due to backscatter and glare from nighttime lighting, and glare from sunlight reflection on the metallic surfaces of project components.
6. The Conditions of Certification ensure that the occurrence of visible cooling tower plumes will be minimized to the extent practicable.
7. Implementation of the Conditions of Certification will ensure that the project's visual impacts are less than significant.
8. The REP will not create or contribute to the creation of significant adverse cumulative visual impacts.
9. Implementation of the Conditions of Certification, below, will ensure that REP complies with all applicable laws, ordinances, regulations, and standards relating to visual resources as identified in the pertinent portion of **Appendix A** of this Decision.

We therefore conclude that with implementation of the following Conditions of Certification the project will not cause any significant adverse direct, indirect, or cumulative impacts to visual resources.

CONDITIONS OF CERTIFICATION

Construction Lighting

VIS-1 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a) All lighting shall be of minimum necessary brightness consistent with worker safety and security;

b) All fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities);

c) Wherever feasible and safe and not needed for security, lighting shall be kept off when not in use; and

d) If the project owner receives a complaint about construction lighting, the project owner shall notify the CPM and shall use the complaint resolution form shown in the General Conditions section of the Compliance Plan to record each lighting complaint and to document the resolution of that complaint. The project owner shall provide a copy of each complaint form to the CPM.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection.

If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 15 days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

Within 48 hours of receiving a lighting complaint, the project owner shall provide to the CPM a) a report of the complaint; b) a proposal to resolve the complaint; and c) a schedule for implementation of the proposal. The project owner shall provide a copy of the completed complaint resolution form to the CPM in the next Monthly Compliance Report.

VisibleWater Vapor Plumes

VIS-2 To ensure that the cooling tower is designed, built and operated as presented in this AFC proceeding, the project owner shall ensure that the cooling tower is designed and operated as follows:

The cooling tower shall be designed and operated so that that the exhaust air flow rate per heat rejection rate:

GTX Configuration

(1) will not be less than 25.4 kilograms per second per megawatt when operating without duct firing and the ambient temperatures are between 41 degrees F and 80 degrees F; (2) will not be less than 19 kilograms per second per megawatt when operating without duct firing and the ambient temperatures are below 41 degrees F (assuming only three cooling tower cells in operation); and (3) will not be less than 13.6 kilograms per second per megawatt when operating with duct firing and the ambient temperatures are below 80 degrees F.

LM6000 Configuration

(1) will not be less than 32.6 kilograms per second per megawatt when operating without duct firing and the ambient temperatures are between 55 degrees F and 80 degrees F; (2) will not be less than 24.5 kilograms per second per megawatt when operating without duct firing and the ambient temperatures are between 41 degrees F and 55 degrees F (assuming only three cooling tower cells in operation); (3) will not be less than 16.1 kilograms per second per megawatt when operating without duct firing and the ambient temperatures are below 41 degrees F (assuming only two cooling tower cells in operation); and (4) will not be less than 14.4 kilograms per second per megawatt when operating with duct firing and the ambient temperatures are below 80 degrees F.

Verification: At least 90 days prior to ordering the cooling tower, the project owner shall provide to the CPM for review the final design specifications of the cooling tower related to plume formation. The project owner shall not order the cooling tower until notified by the CPM that the two design requirements above have been satisfied.

The project owner shall provide written documentation in each Annual Compliance Report to demonstrate that the cooling tower has consistently been operated within the above-specified design parameters, except as necessary to prevent damage to the cooling tower. If determined to be necessary to ensure operational compliance, based on legitimate complaints received or other physical evidence of potential non-compliant operation, the project owner shall monitor the cooling tower operating parameters in a manner and for a period as specified by the CPM. For each period that the cooling tower operation monitoring is required, the project owner shall provide to the CPM the cooling tower operating data within 30 days of the end of the monitoring period. The project owner shall include with this operating data an analysis of compliance and shall provide proposed remedial actions if compliance cannot be demonstrated.

Permanent Exterior Lighting

VIS-3 To the extent feasible and consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting such that a) lamp and reflector visibility is minimized from adjacent properties b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies with local policies and ordinances. The project owner shall submit to the CPM for review and approval and simultaneously to the City of Roseville Planning Department for review and comment a lighting control plan that includes but is not necessarily limited to the following:

a) Determination of location and direction of light fixtures shall take the lighting control requirements into account.

b) Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting control requirements.

c) Lighting design shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated.

d) Light fixtures shall have cutoff angles that are sufficient to minimize lamp and reflector visibility, except where necessary for security.

e) All lighting shall be of minimum necessary brightness consistent with operational safety and security. Lighting within the parking areas shall provide a minimum of one (1) foot candle of light;

f) Pole mounted lighting should be spaced for maximum energy efficiency;

g) Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied; and

h) If the project owner receives a complaint about lighting, the project owner shall notify the CPM and shall use the complaint resolution form shown in the General Conditions section of the Compliance Plan to record each lighting complaint and to document the resolution of that complaint. All records of lighting complaints shall be kept in the on-site compliance file. The project owner shall provide a copy of each completed complaint form to the CPM.

i) The lighting plan shall describe proposed technical methods to address any lighting complaints.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting control plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to the City of Roseville Planning Department for review and comment a lighting control plan that describes the measures to be used and demonstrates that implementation of the plan will satisfy the requirements of the condition.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) within 30 days of receiving notification that revision is required.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide to the CPM a) a report of the complaint; b) a proposal to resolve the complaint; and c) a schedule for implementation of the proposal. The project owner shall provide a copy of the completed complaint resolution form to the CPM within 30 days of complaint resolution, and retain a copy in the project owner's compliance file.

Surface Treatment of Project Structures and Buildings

VIS-4 The project owner shall treat the surfaces of all project structures and buildings visible to the public such that a) their color(s) minimize(s) visual intrusion and contrast by blending with the landscape; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. Transmission line conductors shall be non-specular and insulators shall be non-reflective and non-refractive. The project owner shall submit to the CPM for review and approval, and to the City of Roseville Planning Department for review and comment, a specific surface treatment plan whose proper implementation will satisfy these requirements. The treatment plan shall include:

b) A list of each major project structure, building, tank, and pipe; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;

c) One set of color brochures or color chips showing each proposed color and finish;

d) One set of 11" x 17" color simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture, from Key Observation Points 1 and 2, whose locations are shown on Figure 2 in the Final Staff Assessment;

e) A specific schedule for completion of the treatment; and

f) A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan, or relevant portions thereof, by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

Verification: At least 60 days prior to ordering the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the City of Roseville Planning Department for review and comment.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) within 30 days of receiving notification that revision is required.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed

and they are ready for inspection, and shall submit one set of electronic color photographs taken from the same key observation points identified in (d) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all major structures and buildings at the end of the reporting year; b) major maintenance activities that occurred during the reporting year; and c) the schedule of major maintenance activities for the next year.

Landscape Screening

VIS-5 The project owner shall install landscaping that complies with the West Roseville Specific Plan Design Guidelines for street landscaping for the re-routed Phillip Road and the Blue Oaks extension. The landscaping shall be installed when these respective roadways are constructed. The project owner shall maintain the landscaping for the life of the project, including providing any needed irrigation, removing debris on an annual or semi-annual basis, and replacing dead or dying vegetation.

The project owner shall submit to the CPM for review and approval and simultaneously to the City of Roseville Planning Department for review and comment a landscaping plan whose proper implementation will satisfy these requirements.

The project owner shall not implement the plan until the project owner receives approval from the CPM.

Verification: The landscaping plan shall be submitted to the CPM for review and approval and simultaneously to the City of Roseville Planning Department for review and comment prior to the start of construction of the REP.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and the City of Roseville a revised plan for review and approval by the CPM.

Installation of the landscaping shall not commence until the CPM authorizes final approval and shall be completed immediately following construction of the re-routed Phillip Road and Blue Oaks extension. The project owner shall simultaneously notify the CPM and the City of Roseville within seven days after completing installation of the landscaping, that the landscaping is ready for inspection.

Fences, Signs, and Storage, Trash and Recycling Areas

VIS-6 The project owner shall ensure that fences, outdoor storage areas, and trash/recycling areas are designed and visually screened consistent with the City of Roseville Community Design Guidelines. Project signs shall be designed consistent with the City of Roseville Sign Ordinance. Signs required by safety regulations shall conform to the design criteria established by those regulations.

Verification: At least 60 days prior to construction of the power plant, the project owner shall provide to the CPM for review and approval, and simultaneously to the City of Roseville Planning Department for review and comment, information that will demonstrate that fences, storage areas, trash/recycling areas, and signs will be designed consistent with City LORS.

The project owner shall not construct these elements of the project until the project owner receives approval of the submittal from the CPM.
If the CPM notifies the project owner that revisions are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal.

D. NOISE AND VIBRATION

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting, which has the potential to cause structural damage and annoyance. The analysis of record summarized below evaluates whether noise and vibration produced during project construction and operation will be sufficiently mitigated to comply with applicable law. The evidence presented was uncontested (1/25/05 RT 22-23; Ex. 1 Ch. 8.7 and App. 8.7; Ex 3 responses to first set of data req. nos. 48-50; Exs. 8, 35, 47.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located within the City of Roseville, on land owned by the City, and is directly north of the Pleasant Grove Waste Water Treatment Plant (PGWWTP). Surrounding land uses currently include ranching (agricultural grazing) and rural residential. Agricultural land to the north of the site is located in unincorporated Placer County. To the west, east, and south of the project and the PGWWTP is a 3,100-acre area called West Roseville, which will be developed for residential, industrial, and commercial uses over 15 years under the West Roseville Specific Plan (WRSP) (Ex. 1, 1.1, 2.2.1, 8.6.1.2, 8.7.1.).

Applicant conducted an ambient noise survey to assess likely effects of the project on adjacent sensitive receptors. Existing noise levels were measured at:

- Location 1: Adjacent to residence and dog kennel at 5480 Phillip Road, approximately 1,115 feet northwest of a point midway between the two HRSG stacks of the power plant (assumed, for purposes of modeling power plant noise emissions, as the point source of plant noise).

Existing noise is due primarily to the barking of dogs housed in indoor kennel spaces located 300 feet north of the monitoring site and outdoor pens located within 50 feet of the monitoring site; intermittent traffic on Phillip Road, 330 feet west of the monitoring site; occasional aircraft; and infrequent noise related to construction of the PGWWTP.

- Location 2: Adjacent to residence at 5490 Phillip Road, approximately 1,125 feet north of a point midway between the two HRSG stacks of the power plant. Existing noise is due to the same sources as at Location 1.
- Location 3: Adjacent to residence at 4900 Phillip Road, approximately 1,815 feet northeast of a point midway between the two HRSG stacks of the power plant. The primary existing sources of noise in this location are birds and insects. Secondary sources include intermittent traffic on Phillip Road, occasional aircraft, and infrequent noise related to construction of the PGWWTP.
- Location 4: On the center point of the south boundary of the site, approximately 440 feet south of a point midway between the two HRSG stacks of the power plant. It is not located near any sensitive receptor and was selected to provide data representative of traffic on Phillip Road. Existing noise consists primarily of intermittent traffic on Phillip Road. Secondary sources include low-level pump noise at the PGWWTP, air conditioning units on distant construction trailers, birds, insects, occasional aircraft, and infrequent noise related to construction of the PGWWTP (Ex. 1, p. 8.7.1.).

Table 1, below, summarizes the measured noise levels.

NOISE Table 1

Summary of Measured Noise Levels

Measurement Sites	Measured Noise Levels, dBA		
	Average During Nighttime Hours		Community Noise Equivalent Level (CNEL)
	L_{eq}	L_{90}	
1 – 5480 Phillip Road residence	41.1	37.6	50.8
2 – 5490 Phillip Road residence	37.8	35.6	46.8
3 – 4900 Phillip road residence	38.8	35.9	49.1
4 – South boundary of site	44.1	40.4	52.7

Source: Roseville 2003a, AFC Table 8.7-1 and staff calculations

In general, the noise environment in the vicinity of the project site is dominated by dogs barking, traffic, and aircraft noise during the day and by insect noise at night. The area is relatively quiet at the present time because of its distance from

typical urban activities. The project will create noise during both its construction and its operation.

1. Construction

Construction noise is a temporary event, in this case expected to last about 18 to 21 months. Construction noise is usually considered temporary with construction of the REP, which is expected to last approximately 18 to 21 months (Ex. 1, pp. 1.4, 8.7.2.2.). Construction of an industrial facility such as a power plant is typically noisier than permissible under usual noise ordinances and in order to allow the construction of new facilities, construction noise during certain hours of the day is commonly exempt from enforcement by local ordinances. The Local Noise Ordinance places no limit on the level of construction noise, but limits such noise to certain hours. As described above, construction hours are restricted to weekdays between 7:00 a.m. to 7:00 p.m., and weekends from 8:00 a.m. to 8:00 p.m.

The Applicant has predicted construction noise impacts at the sensitive receptors which are summarized below in **NOISE Table 2**.

NOISE Table 2

Construction Noise Impact Predictions

Location	Distance from Noise Source (feet)	Loudest Predicted Sound Level, dBA*
5480 Phillip Road residence	1115	62
5490 Phillip Road residence	1125	62
4900 Phillip Road residence	1815	58

Source: Roseville 2003a, AFC Table 8.7-3

The loudest predicted sound levels at these receptors vary from 58 to 62 dBA. During the daytime, when noisy construction work is performed, L_{eq} levels at these locations range from 40 dBA to as high as 50 dBA. Construction noise levels will be 8 to 22 dBA above the existing daytime L_{eq} levels. With adequate

feasible mitigation, construction noise impacts would be insignificant. Conditions of Certification **NOISE-1, NOISE-2**, and **NOISE-8** establish an effective noise complaint resolution process.

Steam blows are necessary to clean debris from the feed water and steam systems. These typically constitute the loudest construction noise, potentially being as loud as 136 dBA at a distance of 50 feet. To lessen construction noise from this source, appropriate piping will be equipped with a temporary silencer; this will result in a 30 dBA reduction. Furthermore, a quieter steam blow process, such as QuietBlow™ or Silentsteam,™ can be used. Conditions of Certification **NOISE-4, NOISE-5**, and **NOISE-8** will limit noise from steam blows by prohibiting the use of high-pressure steam blows unless appropriately silenced; require implementation of a notification process to make neighbors aware of impending steam blows; and restrict such work to daytime hours. (Ex. 47, p. 4.6-10.)

Typically, construction of the linear facilities will impact individual receptors for only a few days. The evidence establishes that condition **NOISE-8** provides sufficient assurance that no significant impacts will result from this source. (Ex. 47, p. 4.6-11.)

2. Operation

The noise emanating from a power plant during normal operation is generally broadband, steady state in nature. During its operating life, the REP will essentially be a steady, continuous noise source both day and night. Occasional brief increases in noise levels will occur as steam relief valves open to vent pressure, or during startup or shutdown as the plant transitions to and from steady-state operation. At other times, such as when the plant would be shut down for lack of dispatch or for maintenance, noise levels would decrease. The primary noise sources of the project include the gas turbine generators, the

steam turbine generator, gas turbine air inlets, HRSG exhaust stacks, natural gas fuel compressors, electrical transformers, and various pumps. (Ex. 47, p. 4.6-12.)

The Applicant performed noise modeling to determine the project's noise impacts on currently existing sensitive receptors.

Background (L_{90}) levels are relatively low for a period of four or five hours centered around 2 a.m., with increasing levels before and after this time span. This is to be expected where late evening and early morning commute traffic influence the background noise.

Based on projected power plant noise levels, the power plant noise levels at the three sensitive receptors (ranging from 46.6 to 50.6 dBA nighttime L_{eq}), would be lower than the City of Roseville's Noise Ordinance requirement of 52 dBA, and thus in compliance with this ordinance.

Condition of Certification **NOISE-9** will ensure mitigation measures to nearby residents in the form of exterior sound barriers, replacement of single-pane windows and hollow-core doors, air conditioning and additional sound insulation in exterior walls.

Therefore, noise levels from the REP, in combination with the expected WRSP noise levels, will result in an insignificant adverse impact on the future West Roseville Specific Plan residential neighborhoods. However, incorporation of the requirements embodied in the Conditions of Certification will ensure that all necessary mitigation would be employed to reduce project noise impacts from both construction and operation of the REP to the extent feasible.

There will be no significant cumulative impacts with other projects, and no significant direct or cumulative noise impacts to an environmental justice population.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission makes the following findings and reaches the following conclusions:

1. Construction and operation of the REP will increase noise levels above existing ambient levels in the surrounding community.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by employing measures such as sound reduction devices and limiting construction to daytime hours in accordance with local noise control laws and ordinances.

3. Operational noise could cause significant adverse impacts. Measures contained in the Conditions of Certification will, however, ensure that these impacts are mitigated to below levels of significance.

4. The project owner will implement measures to protect workers from injury due to excessive noise levels.

5. The REP will not create ground or airborne vibrations which are detectable off-site.

6. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

The Commission concludes that implementation of the following Conditions of Certification ensure that the REP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision, and will not cause indirect, direct, or cumulative significant adverse noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one-half mile of the site and the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the

phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

VERIFICATION: Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;

- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

VERIFICATION: Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, with the local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

VERIFICATION: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program. The project owner shall make the program available to Cal-OSHA upon request.

STEAM BLOW MANAGEMENT

NOISE-4 If a traditional, high-pressure steam blow process is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 106 dBA measured at a distance of 50 feet. The project owner shall conduct steam blows only during the hours specified in Condition of Certification **NOISE-8**, unless the CPM agrees to longer hours based on a demonstration by the project owner that offsite noise impacts will not cause annoyance.

If a low-pressure continuous steam blow or air blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting noise levels from the steam or air blows alone will not exceed 53 dBA L_{eq} measured at the residence at 5480 Phillip Road. If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of the CPM.

At least 15 days prior to the first high-pressure steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected, and a description of the steam blow schedule.

At least 15 days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

STEAM BLOW NOTIFICATION

NOISE-5 Prior to the first high-pressure steam blow(s), the project owner shall notify all residents, school principals or business owners within one mile of the site of the planned steam blow activity, and shall make the notification available to other area residents in an appropriate manner.

The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

VERIFICATION: Project owner shall notify residents, schools and businesses at least 15 days prior to the first high-pressure steam blow(s). Within five days of notifying these entities, the project owner shall send a letter to the CPM confirming that the residents, schools and businesses have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE RESTRICTIONS

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to plant operation alone to exceed 52 dBA L_{eq} measured near the residences at 5480 Phillip Road (Monitoring Location 1), 5490 Phillip Road (Monitoring Location 2), and 4900 Phillip Road (Monitoring Location 3), and will comply with Section 9.24.120 of the Roseville Municipal Code.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

A. When the project first achieves a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring sites ML-1, ML-2 or ML-3, whichever represents the current residential use nearest the project site. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been introduced.

   The measurement of power plant noise for the purposes of demonstrating compliance with this Condition of Certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the nearest residence. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at the nearest residence to determine the presence of pure tones or other dominant sources of plant noise.

B. If the results from the noise survey indicate that the power plant noise level (L_{eq}) at the affected receptor exceeds the above value for any given hour during the 25-hour period, or that the noise standards of the LORS have been exceeded, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

The survey shall take place within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity. Within 30 days after

completing the survey, the project owner shall submit a summary report of the survey to the City of Roseville Planning Department, and to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

VERIFICATION: Within 30 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Following the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

VERIFICATION: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

CONSTRUCTION TIME RESTRICTIONS

NOISE-8 Heavy equipment operation and noisy construction work relating to any project features including high pressure steam blows shall be restricted to the times of day delineated below unless specifically approved by the City of Roseville under the procedures set forth in section 9.24.160 of the Roseville Municipal Code:

Monday through Friday	7 a.m. to 7 p.m.
Saturday and Sunday	8 a.m. to 8 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

VERIFICATION: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project. If an exception for specific activity is granted by the City of Roseville pursuant to section 9.24.160 of the Roseville Municipal Code, the project owner shall submit evidence of such approval to the CPM prior to conducting such activities.

NOISE-9 In the event legitimate noise complaints under Condition of Certification **NOISE-2** are made by the owners of any of the existing residences located at 5480 Phillip Road (Monitoring Location 1), 5490 Phillip Road (Monitoring Location 2), and 4900 Phillip Road (Monitoring Location 3) during operation of the REP, the project owner shall offer to pay for the following noise attenuating upgrades to the residences:

- Exterior sound barriers;
- Replacement of single-pane windows with dual-pane windows;
- Replacement of hollow-core exterior doors with solid-core doors and weather stripping;
- Air conditioning; and
- Additional sound insulation in exterior walls.

The owner of each residence may select any or all of the above upgrades that the residence owner decides, in his or her sole discretion, but after consulting with the project owner, are appropriate. The residence owner and the project owner shall select a mutually acceptable contractor to perform the upgrades. The project owner shall pay the cost of the upgrades.

A "legitimate complaint" refers to a noise caused by the REP project, as opposed to another source, and as verified by the CPM. A legitimate complaint constitutes either: a violation by the project of any noise Condition of Certification, which is documented by another individual or entity affected by such noise; or a minimum of three complaints over a twenty-four (24) hour period that are confirmed by the CPM, the project owner, or any local or state agency which would, but for the exclusive jurisdiction of the Commission, otherwise have the responsibility for investigating noise complaints or enforcing noise limitations.

Verification: Upgrades shall, unless impossible due to circumstances beyond the project owner's control, be installed within 6 months of the receipt of the complaint. In the first annual compliance report after the receipt of a complaint, the project owner shall include documentation certifying that: 1) the noise-attenuating upgrades were installed on the specified residence at the project owner's expense, 2) the noise attenuating upgrades were already a feature of the residence, 3) installation was offered but refused by an owner, or 4) residential use by the complainant was ceased. In the event noise-attenuating upgrades are not complete at the time the annual compliance report is issued, the report shall include a schedule for the completion of the upgrades and the documentation listed above shall be included in the next annual compliance report.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Roseville Energy Park
(03-AFC-1)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____
Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____
Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

E. SOCIOECONOMICS

This review of "socioeconomics" evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities and other public services, as well as the fiscal and physical capacities of local government to meet those needs. The public benefits of the project including economic, environmental, and electricity reliability benefits are also reviewed. In addition, an environmental justice screening analysis is conducted to determine whether project-related activities would result in disproportionate impacts on low income and/or minority populations. The evidence of record is undisputed on this topic. (1/25/05 RT 24-25; Ex. 1 Ch 8.10; Ex. 3 responses to first set of data req. no. 51; Ex. 10; Ex. 47.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The construction phase is typically the focus of the analysis because of the potential influx of workers into the area. Socioeconomic impacts are considered significant if a large influx of non-resident workers and dependents occurs in the project area, thus increasing demand for community resources.

Sacramento and Placer Counties, and their major cities, Sacramento and Roseville, are within a one-hour one-way commute distance of the power plant site. Workers may live in this area as well as the Golden Sierra Consortium (Alpine, El Dorado, Nevada, Placer, and Sierra Counties), and North Central Consortium (Colusa, Glenn, Lake, Sutter, and Yuba Counties). The bulk of the construction workers are expected to come from Sacramento and Placer Counties with a small percentage drawn from the Golden Sierra Consortium as well as the North Central Consortium. (Ex. 47, p. 4.8-4, 4.8-5.)

Actual construction is expected to occur over approximately 18 to 20 months, beginning in mid-2005. Personnel requirements will be minimal during the

mobilization and site-grading period (i.e., during the first 3 months of the construction period) and during the start-up and testing period (i.e., during the last 3 months of the construction period). The primary trades in demand will include boilermakers, carpenters, electricians, ironworkers, laborers, millwrights, operators, and pipe-fitters. Construction personnel requirements will peak at approximately 206 workers in the 11th and 12th months of the construction period. (Ex. 47 pp. 4.8-3 to 4.8-4.) Most construction workers are expected to commute to the project site and, therefore, will not increase the population of the area. The REP will also require an operational workforce of about 25 workers. Most are expected to come from Placer and Sacramento Counties. (Ex. 47, pp. 4.8-5.)

The evidence establishes that the required construction and operational workforce will not displace the existing population nor place an undue stress upon available housing. (Ex. 47, p. 4.8-5.) Similarly, the evidence shows that existing educational, police, medical, and emergency services will not be adversely impacted. (Ex. 47, pp. 4.8-5 to 4.8-7.)

The REP's initial capital cost is estimated to be between $100 to $130 million; of this, locally purchased materials and supplies will cost approximately $1.5 and $3 million. The anticipated payroll, as well as the purchase of materials and supplies during the construction period, will have a slight beneficial impact on the area. [39] About $450,000 worth of construction materials and supplies will be purchased locally (within Placer County). The total local sales tax expected to be generated during construction is $109,000 to $218,000. REP will also provide about $30 million in construction payroll. (Ex. 47, pp. 4.8-5 to 4.87-6.)

Since REP is a public agency, it does not pay property taxes to the County. However, as noted above, REP will benefit the City of Roseville and Placer County through the construction and operation payrolls, jobs created directly and

[39] Public Resources Code section 25523(h) requires a discussion of a project's public benefits.

indirectly, and sales taxes on locally purchased materials and supplies. (Ex. 47, p. 4.8-6.)

The following Table provides a summary of socioeconomic data and information, with emphasis on the economic effects of the REP project.

Socioeconomic Data and Information - Table	
Project Capital Costs	$100-$130 million
Estimate of Locally Purchased Materials	
Construction	$1.5-$3 million
Operation	$450,000 per year
Estimated Annual Property Taxes	Not applicable. Roseville Electric (RE) is exempt.
Estimated School Impact Fees	Not applicable. RE is exempt.
Direct Employment	
Construction (average)	114 jobs
Operation	25 jobs
Secondary Employment	
Construction	99 jobs
Operation	27 jobs
Direct Income	
Construction	$13,263,000
Operation	$4,000,000
Secondary Income	
Construction	$3,204,000
Operation	$1,111,000
Payroll	
Construction	Total-$30 million.
Operation	Average: $1.45 million annually.
Estimated Sales Taxes	
Construction	$109,000 to $218,000
Operation	$32,625 annually.
Existing /Projected Unemployment Rates	Existing – 5 percent in January 2004 (preliminary), not seasonally adjusted for Placer County and 6.7 percent in January 2004 (preliminary), not seasonally adjusted for California. Projected - Not available.
Percent Minority Population (6 mile radius)	28.75 percent
Percent Poverty Population (6 mile radius)	5.22 percent

Source: Ex. 47, p. 4.8-2 (modified).

Finally, the evidence of record contains a screening analysis to determine whether environmental justice concerns are present in this case. (Ex. 47, p. 4.8-8.) The screening analysis assessed: (1) whether the potentially affected community includes minority and/or low-income populations; and (2) whether the project's potential environmental impacts are likely to fall disproportionately on minority and/or low-income members of the community.

Staff reviewed relevant 2000 Census data for the area within a six-mile radius of the site to determine whether low income/minority populations constitute more than 50 percent of the general population. This revealed a minority population of 28.75 percent by census block, with pockets of greater than 50 percent minority population as well as a low-income population of 5.22 percent within the same radius. The evidence does not identify any significant direct or cumulative impact upon these populations which are attributable to the project. (Ex. 47, pp. 4.8-9.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find as follows:

1. The REP project will draw primarily upon the local labor force from nearby counties for the construction and the operation workforce.

2. The project will not cause an influx of a significant number of construction or operation workers into the local area.

3. The proposed project is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.

4. The project will have a construction payroll of approximately $30 million.

5. REP will result in local construction expenditures of $1.5 to $3 million, and local operational expenditures of about $450,000.

6. The project will likely result in increased revenue from sales taxes due to construction activities.

7. The project owner will recruit employees and purchase materials within Placer County to the greatest extent possible.

8. The project will not have any disproportionately high adverse impacts on any minority or low-income populations.

9. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

We therefore conclude that the project construction and operation activities will create some degree of benefit to the local area. No Conditions of Certification are required for this topic.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

APPENDICES

AIR QUALITY

FEDERAL

Under the Federal Clean Air Act (40 CFR 52.21), there are two major components of air pollution law, New Source Review (NSR) and Prevention of Significant Deterioration (PSD). NSR is a regulatory process for the evaluation of those pollutants that violate the federal ambient air quality standards. Conversely, PSD is a regulatory process for the evaluation of pollutants that do not violate the federal ambient air quality standards. The NSR analysis has been delegated by the U.S. Environmental Protection Agency (U.S. EPA) to the Placer County Air Pollution Control District (District). The U.S. EPA determines the conformance with the PSD regulations. The PSD requirements apply only to those projects that emit pollutants in excess of 100 tons per year (known as major sources).

STATE

The California State Health and Safety Code, section 41700, requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerate number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

LOCAL

PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

The proposed project is subject to all PCAPCD rules and regulations that the Air Pollution Control Officer finds to be applicable. The applicability of these rules and regulations are discussed fully in the Preliminary Determination of Compliance (PDOC) issued by the District on May 25, 2004 (PCAPCD 2004a). These rules and regulations include common prohibitions against visibility impairment and nuisance from air emissions, as well as, specific NSR procedural requirements. While it is required that REP comply with all applicable rules and regulations, the District NSR rule is the most relevant for the REP.

Rule 502 – New Source Review

This rule codifies the scope, process and requirements for the District to issue a Determination of Compliance (DOC), Authority to Construct (ATC) and a Permit to Operate (PTO) within the California Energy Commission's (Commission) California Environmental Quality Act (CEQA) equivalent process. This rule includes the requirement for determining the Best Available Control Technology (BACT) for the class and category of emitting device. It includes the standard for establishing emission limits on an hourly, daily and quarterly basis and

establishes precursor pollutants, offset triggers, offset ratios, and distance ratios needed for the determination of offsetting requirements. Additionally, this rule establishes the ability of the Air Pollution Control Officer to determine an appropriate interpollutant trading ratio.

ALTERNATIVES

Title 14, California Code of Regulations Section 15126.6(a), provides direction by requiring an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." In addition, the analysis must address the No Project Alternative [Cal. Code Regs., tit. 14, §15126.6(e)].

The range of alternatives is governed by the "rule of reason" which requires consideration only of those alternatives necessary to permit informed decision-making and public participation. The California Environmental Quality Act (CEQA) states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative [Cal. Code Regs., tit. 14, §15125(d)(5)]. However, if the range of alternatives is defined too narrowly, the analysis may be inadequate (City of Santee v. County of San Diego (1989) 214 Cal. App. 3d 1438).

BIOLOGICAL RESOURCES

FEDERAL

- **Endangered Species Act of 1973**

  Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat.

- **Migratory Bird Treaty Act**

  Title 16, United States Code, sections 703-712, prohibit the take of migratory birds.

- **Clean Water Act**

  33 United States Code, section 404 et seq., prohibits the discharge of dredged or fill material into the waters of the United States without a permit.

STATE

- **California Endangered Species Act of 1984**

  Fish and Game Code sections 2050 et seq., protect California's rare, threatened and endangered species.

- **Nest Or Eggs-Take, Possess, or Destroy**

  Fish and Game Code section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs or any bird.

- **Birds of Prey or Eggs-Take, Possess, or Destroy**

  Fish and Game Code section 3503.5, protects California's birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

- **Migratory Birds-Take or Possession**

  Fish and Game section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird.

- **Fully Protected Species**

  Fish and Game Code sections 3511, 4700, 5050, 5515 prohibit take of animals that are classified as Fully Protected in California.

- **Significant Natural Areas**

  Fish and Game Code section 1930 et seq. designate certain areas such as refuges, natural sloughs, riparian areas and vernal pools as significant wildlife habitat.

- **Streambed Alteration Agreement**

  Fish and Game Code section 1600 et seq., require the California Department of Fish and Game to review project impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions and other disturbances.

- **Native Plant Protection Act of 1977**

  Fish and Game Code section 1900 et seq., designate state rare, threatened, and endangered plants.

- **California Code of Regulations**

  Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

LOCAL

- **Placer County General Plan**

  Appendix C, Conservation Goals, Policies & Programs. Plant and Animal Communities. Biological Resource protection measures include: avoiding areas rich in wildlife or of a fragile ecological nature, maintaining fish and wildlife populations at viable levels, identifying and protecting critical habitat, reducing wetland impacts to point of no net loss, conserving upland areas adjacent to wetlands and riparian areas when they are critical to survival and nesting of wetland and riparian species, preserving habitats of rare, threatened or endangered species, and developing a comprehensive habitat management plan.

- **Placer Legacy Open Space and Agricultural Conservation Program Natural Community Conservation Plan and Habitat Conservation Plan**

  Protect the diversity of plant and animal communities, including endangered and other special-status species, and establish open-space buffers between communities.

CULTURAL

FEDERAL

- Code of Federal Regulations, 36 CFR Part 61 (48 FR 44716), revised July 1, 2003. Federal Guidelines for Historic Preservation Projects: The U.S. Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary's standards and guidelines are used by federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The State Historic Preservation Office refers to these standards in its requirements for mitigation of impacts to cultural resources on public lands in California.
- Code of Federal Regulations, 36 CFR Part 800 et seq., the implementing regulations of Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470 requires federal agencies to take into account the effects of their undertakings on historic properties through consultations beginning at the early stages of project planning. The regulations implementing this act, which were revised in 1997, set forth procedures to be followed for determining eligibility of cultural resources, determining the effect of the undertaking on the historic properties, and how the effect will be taken into account. The eligibility criteria and the process described in these regulations are used by federal agencies. Very similar criteria and procedures are used by the state in identifying cultural resources eligible for listing in the California Register of Historical Resources.

STATE

- California Code of Regulations, Title 14, section 4852 defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.
- Public Resources Code, Section 5000 establishes the California Register of Historical Resources (CRHR), establishes criteria for eligibility to the CRHR, and defines eligible resources. It identifies any unauthorized removal or destruction of historic resources on sites located on public land as a misdemeanor. It also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. This section defines procedures for the notification of discovery of Native American artifacts or remains, and states that it is the policy of the State that Native American remains and associated grave artifacts shall be repatriated.
- The California Environmental Quality Act (CEQA) (Public Resources Code, section 21000 et seq.; Title 14, California Code of Regulations, section 15000

et seq.) requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

- Public Resources Code section 21083.2 states that the lead agency determines whether a project may have a significant effect on “unique” archaeological resources; if so, an Environmental Impact Report (EIR) shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, the lead agency may require reasonable steps to preserve the resource in place. Otherwise, mitigation measures shall be required as prescribed in this section. The section discusses excavation as mitigation; limits the applicant’s cost of mitigation; sets time frames for excavation; defines “unique and non-unique archaeological resources;” and provides for mitigation of unexpected resources. [The California Energy Commission process is a CEQA equivalent process.]
- Public Resources Code section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource. The section further defines a “historic resource” and describes what constitutes a “significant” historic resource.
- CEQA Guidelines, Title 14, California Code of Regulations, section 15126.4(b), prescribes the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project’s impact on a historical resource; discusses documentation as a mitigation measure; and discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.
- CEQA Guidelines, section 15064.5 defines the term “historical resources,” explains when a project may have a significant effect on historic resources, describes CEQA’s applicability to archaeological sites, and specifies the relationship between “historical resources” and “unique archaeological resources.” Subsection (f) directs the lead agency to make provisions for historical or unique archeological resources that are accidentally discovered during construction.
- Penal Code, section 622 1/2 states that anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.
- California Health and Safety Code, section 7050.5 states that if human remains are discovered during construction, the project owner is required to contact the county coroner.
- California Health and Safety Code, section 18961 states that all agencies which enforce and administer approvals, variances, or appeals procedures or decisions affecting the preservation or safety of the historical aspects of historical buildings shall use the alternative provisions of this part and shall

consult with the State Historical Building Safety Board to obtain its review prior to undertaking action or making decisions on variances or appeals which affect historical buildings.

LOCAL

Placer County

The County of Placer protects cultural resources by reviewing development applications for compliance with CEQA. More specifically, the Placer County General Plan (1994, Section 5) specifically addresses the identification and protection of cultural resources in a series of policy statements. County Comprehensive General Plan Land Use Standards require the Planning Department to determine whether proposed development will alter or destroy an historical site or an archaeological site, cause a substantial adverse change in the significance of an historical or archaeological resource (cf. California Code of Regulations 15064.5), disturb any human remains, or restrict existing religious or sacred uses.

Placer County's General Plan identifies one primary objective that is specifically designed for the protection of both Historic and Prehistoric cultural resources. The objective or goal, as it is referred in Section 5.D of the general plan, calls for the identification, protection, and enhancement of the county's important historical, paleontological, and cultural sites and their environment. It is under this stated goal that the county further defines sixteen separate policy statements that relate to numerous aspects of cultural resource management. The stated policies are the joint responsibility of the Parks Department, Planning Department, and Department of Museums. In addition, Placer County's Park Classification System, policy (5.A.19.), states that areas, sites, and buildings considered culturally significant are protected, managed and maintained. When appropriate, and as a secondary objective, the county encourages the use of these specially designated areas for recreational events.

City of Roseville

The General Plan of the City of Roseville (2003) establishes the following goals with respect to land use, open space, and conservation issues as these relate to the enhancement, protection and interpretation of cultural resources. The City recognizes that archeological, historical and cultural resources identify Roseville's heritage and provides direction for preservation and management of these sites and buildings. The City maintains a commitment to the preservation of known cultural resources and recognizes the importance of cooperation with outside agencies that include, but are not limited to, the State Office of Historic Preservation and the California Native American Heritage Commission (Open Space and Conservation Element , p. V33-34).

1. A commitment to preserving its small town attributes and cultural heritage, while preserving individual neighborhoods and promoting a prosperous business community (Land Use Element, Community Form, Goal 1b, p. II-30).
2. Emphasize the preservation and enhancement of historically and culturally significant buildings, woodlands and other significant features, as a primary element of Roseville's character (Land Use Element, Community Design, Goal 4. p. II-40).
3. Strengthen and maintain Roseville's unique identity through the protection of its archaeological, historic and cultural resources (Open Space and Conservation Element, Goal 1, p. V-37).

The Open Space and Conservation Element of the Roseville General Plan include the following policies for Archaeological Historic and Cultural Resources (pp. V-37 and V-38):

1. When items of historical, cultural or archaeological significance are discovered within the City, a qualified archaeologist or historian shall be called to evaluate the find and to recommend proper action.

2. When feasible incorporate significant archaeological sites into open space areas.

3. Subject to approval by the appropriate federal, state, and local agencies, artifacts that are discovered and subsequently determined to be "removable" should be offered for dedication to the Maidu Park Native American Interpretive Center.

4. Preserve and enhance Roseville's historic qualities through the implementation of the Downtown, Old Town and Riverside Master Plans.

5. Establish standards for the designation, improvement and protection of buildings, landmarks, and sites of cultural and historic character.

6. Participate in the completion of a countywide inventory of historical sites.

7. Encourage public activities, including the placement of monuments or plaques, that recognize and celebrate historic sites, structures, and events.

8. Explore funding for cultural, archaeological and historic programs and activities.

9. Provide opportunities to public awareness and education through coordination with the Historical Society and local schools.

West Roseville Specific Plan

In addition to the General Plan established for the City of Roseville, there is a specific plan for West Roseville. This document was also prepared for the City of Roseville, and is entitled the West Roseville Specific Plan and Sphere of Influence Amendment, 2003 (WRSP). The WRSP refers to the goals and policies in the Roseville General Plan. The WRSP also recognizes the Fiddyment Ranch Complex as a resource to be preserved as a community facility for use by the City. No specific measures that detail the reuse of the complex are provided.

FACILITY DESIGN

The lists of laws, ordinances, regulations, and standards (LORS) applicable to each engineering discipline (civil, structural, mechanical and electrical) are described in Exhibit 1, Appendices 10-A through 10-D. Some of these LORS include:

- the California Building Standards Code (CBSC) also known as Title 24, California Code of Regulations,
- American National Standards Institute (ANSI),
- American Society of Mechanical Engineers (ASME),
- American Society for Testing and Materials (ASTM), and
- American Welding Society (AWS).

GEOLOGY, MINERAL RESOURCES, AND PALEONTOLOGY

FEDERAL

The proposed REP is not located on federal land. As such, there are no federal LORS for geological hazards and resources or grading for the REP plant site.

STATE AND LOCAL

The project shall be designed and constructed to the 2001 edition of the California Building Standards Code (CBSC), in particular Part 2, the California Building Code (CBC). The CBC includes a series of standards that are used in project investigation, design and construction (including grading and erosion control).

The “Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources: Standard Procedures” (Society of Vertebrate Paleontology [SVP], 1995) is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 by the Society of Vertebrate Paleontology (SVP), a national organization of professional scientists.

HAZARDOUS MATERIALS MANAGEMENT

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (Pub. L. 99-499, §301,100 Stat. 1614 [1986]), also known as SARA Title III, contains the Emergency Planning and Community Right To Know Act (EPCRA) as codified in 42 U.S.C. §11001 et seq. This Act requires that certain information about any release to the air, soil, or water of an extremely hazardous material must be reported to state and local agencies.

The Clean Air Act (CAA) of 1990 (42 U.S.C. §7401 et seq. as amended) established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The CAA section on Risk Management Plans - codified in 42 U.S.C. §112(r) - requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of the CAA are reflected in the California Health and Safety Code, section 25531 et seq.

STATE

The California Accidental Release Prevention Program (Cal-ARP), implemented pursuant to Health and Safety Code, section 25531, directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local Administering Agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This program supersedes the California Risk Management and Prevention Plan.

Section 25503.5 of the California Health and Safety Code requires facilities which store or use hazardous materials to prepare and file a Business Plan with the local Certified Unified Program Authority (CUPA), in this case the City of Roseville Fire Department. This Business Plan is required to contain information on the business activity, the owner, a hazardous materials inventory, facility maps, an Emergency Response Contingency Plan, an Employee Training Plan, and other recordkeeping forms.

Title 8, California Code of Regulations, section 5189, requires facility owners to develop and implement effective safety management plans to ensure that large quantities of hazardous materials are handled safely. While such requirements

primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

Title 8, California Code of Regulations, section 458 and sections 500 – 515, set forth requirements for design, construction and operation of vessels and equipment used to store and transfer anhydrous ammonia. These sections generally codify the requirements of several industry codes, including the ASME Pressure Vessel Code, ANSI K61.1 and the National Boiler and Pressure Vessel Inspection Code. While these codes apply to anhydrous ammonia, they may also be used to design storage facilities for aqueous ammonia.

California Health and Safety Code, section 41700, requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Gas Pipeline

The safety requirements for pipeline construction vary according to the population density and land use, which characterize the surrounding land. The pipeline classes are defined as follows (Title 49, Code of Federal Regulations, Part 192):

- Class 1: Pipelines in locations within 220 yards of ten or fewer buildings intended for human occupancy in any 1-mile segment;
- Class 2: Pipelines in locations within 220 yards of more than ten but fewer than 46 buildings intended for human occupancy in any 1-mile segment. This class also includes drainage ditches of public roads and railroad crossings;
- Class 3: Pipelines in locations within 220 yards of more than 46 buildings intended for human occupancy in any 1-mile segment, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12 month period (the days and weeks need not be consecutive); and
- Class 4: Pipelines in locations within 220 yards of buildings with 4 or more stories above ground in any 1-mile segment.

The natural gas pipeline will be designed for Class 3 service and will meet California Public Utilities Commission General Order 112-E and 58-A standards. The natural gas pipeline must be constructed and operated in accordance with the Federal Department of Transportation (DOT) regulations, Title 49, Code of Federal Regulations (CFR), Parts 190, 191, and 192:

- Title 49, Code of Federal Regulations, Part 190 outlines the pipeline safety program procedures;

- Title 49, Code of Federal Regulations, Part 191, Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days;
- Title 49, Code of Federal Regulations, Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, specifies minimum safety requirements for pipelines and includes material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use which characterize the surrounding land. This part contains regulations governing pipeline construction, which must be, followed for Class 2 and Class 3 pipelines.

LOCAL AND REGIONAL

The Uniform Fire Code (UFC 2000) contains provisions regarding the storage and handling of hazardous materials in Articles 4 and 79. The most recent version of the UFC was adopted in 2000.

The City of Roseville Fire Department is the designated Certified Unified Program Authority (CUPA) and is responsible for administering Hazardous Materials Business Plans, Hazardous Materials Management Plans, Spill Prevention, Control, and Countermeasure Plans and RMP's (CH2MHill 2004d).

LAND USE

FEDERAL

There are no Federal land use-related LORS that apply to this project.

STATE

California Department of Education

Education Code Section 17521 and the California Code of Regulations Title 5, sections 14001 through 14012, outline the powers and duties of the Department of Education (CDE) regarding future school site selection. The code section also provides distance requirements from hazardous pipelines and air emission sources that school districts are required to assess for school site selection. Although no schools are currently located within close proximity of the REP site, with the recent approval of the West Roseville Specific Plan by the City of Roseville, future school sites in the vicinity have been identified. Energy Commission staff will be assisting the CDE in providing specific data as needed to assure school site compliance with State law.

Subdivision Map Act (Pub. Resources Code, § 66410-66499.58)

The Subdivision Map Act provides procedures and requirements regulating land divisions (subdivisions) and the determining of parcel legality. Regulation and control of the design and improvement of subdivisions, by this Act, has been vested in the legislative bodies of local agencies. Each local agency by ordinance regulates and controls the initial design and improvement of common interest developments and subdivisions for which the Map Act requires a tentative and final map.

LOCAL

City of Roseville Zoning Ordinance

The City of Roseville Zoning Ordinance (Title 19 of the Roseville Municipal Code) establishes land use (zone) districts in the incorporated areas of the City. In each specific land use district, the types of development, dimensions for buildings, and open spaces are regulated for the purpose of implementing the general plan of the city. The purposes of these regulations are protecting existing development, encouraging beneficial new development, and preventing overcrowding and congestion

City of Roseville General Plan

Under California State planning law, each incorporated City and County must adopt a comprehensive, long-term General Plan that governs the physical development of all lands under its jurisdiction. The general plan is a broadly scoped planning document and defines large-scale planned development patterns over a relatively long timeframe.

The General Plan consists of a statement of development policies and must include a diagram and text setting forth the objectives, principles, standards and proposals of the document. At a minimum, a General Plan has seven mandatory elements including Land Use; Circulation; Housing; Conservation; Open Space; Noise and Safety. The City of Roseville added a Public Facilities Element to their General Plan, which is discussed further in the **IMPACTS** section of this analysis.

The City of Roseville administers the State required general plan as a group of documents organized by geographic areas and subject matter and has included a Land Use element in its Plan (Government Code, § 65301).

West Roseville Specific Plan

The City of Roseville adopted a resolution for approval of the West Roseville Specific Plan (WRSP) on February 4, 2004. The second reading was approved by the City Council on February 23, 2004. On July 14, 2004 the Placer County Local Agency Formation Commission (LAFCO) approved the West Roseville annexation request.

Land uses in the WRSP will include a mixed-use planned development, industrial, commercial, park/open space, school sites, and public/quasi-public uses. Land immediately west of the project site is zoned General Industrial; to the east of the REP site, land will be preserved as open space and/or developed as a regional park.

Placer County

Placer County General Plan

Placer County administers the State required general plan as a group of documents organized by geographic areas and subject matter. (Government Code, § 65301).

Similar to the City of Roseville's General Plan, the Placer County General Plan includes specific policies designed to preserve and enhance existing development and to provide for orderly and appropriate new development to meet the needs of the area for the next 20 years.

Land Use Element

The Land Use Element addresses the types and locations of land uses (e.g., residential, industrial, commercial, agriculture, infrastructure such as roads, wastewater treatment, and utility facilities) that the County Supervisors consider appropriate for the long-range outlook of the General Plan.

The General Plan designation for lands adjacent to the north of the REP site that are not within the Roseville city limit is Agriculture.

Placer County Zoning Ordinance

The Placer County Zoning Ordinance (Title 17 of the Placer County General Code) establishes land use (zone) districts in the unincorporated area. In each specific land use district, the types of development, dimensions for buildings, and open spaces are regulated for the purpose of implementing the general plan of the county. The purposes of these regulations are protecting existing development, encouraging beneficial new development, and preventing overcrowding and congestion. The areas north of the REP project site are within the Farm (F) district.

NOISE AND VIBRATION

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed (see Exhibit 47, p. 4.6-27.) The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

There are no federal laws governing off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

STATE

California Government Code section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed below in **NOISE Table 1**.

NOISE Table 1
Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (dB)													
	50		55		60		65		70		75		80	
Residential - Low Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Transient Lodging – Motel, Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

The State of California, Office of Noise Control, prepared a Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. The Model also contains a definition of a simple tone, or “pure tone,” in terms of one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by five dBA.

Other State LORS include the California Occupational Safety and Health Administration (Cal-OSHA) regulations.

Cal-OSHA

Cal-OSHA has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

LOCAL

City of Roseville General Plan

Chapter IX of the City's General Plan (Roseville 2003) is the City of Roseville's Noise Element. The applicable noise standards for various uses are expressed in Table IX-3, Performance Standards for Non-Transportation Noise Sources, summarized below in **NOISE Table 2**. These standards declare that noise impacts on noise-sensitive receptors be no greater than 50 dBA L_{eq} during daytime hours (7 a.m. to 10 p.m.), and no greater than 45 dBA L_{eq} during nighttime hours (10 p.m. to 7 a.m.).

NOISE Table 2
City of Roseville Noise Performance Standards

Noise Level Descriptor*	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum level, dB	70	65

*Measured at the property line of the noise-sensitive receptor

City of Roseville Noise Regulation

The City's Noise Ordinance restricts the times of day, and the days of the week, that construction may occur near residentially-zoned property (Roseville 2001, § 9.24.030 G). Construction is permitted:

- weekdays between 7:00 a.m. and 7:00 p.m.; and
- weekends between 8:00 a.m. and 8:00 p.m.

The Noise Regulation repeats the standards of the General Plan Noise Element shown in **NOISE Table 2** . Further, the Noise Regulation prohibits noise created on industrially-zoned land, when heard at a sensitive receptor that is adjacent or is separated by a roadway, to cause the noise level at the property line of the sensitive receptor to exceed the ambient level by 7 dBA, or to exceed the standards by 7 dBA, whichever is greater.

Placer County Noise Ordinance

The Placer County Noise Ordinance sets Sound Level Standards for sound that causes the ambient noise level to increase by 5 dBA, or that exceeds certain values, as shown in **NOISE Table 3** below, whichever is greater (Placer 2004a, § 9.36.060, Table 1):

NOISE Table 3
Placer County Sound Level Standards

Noise Level Descriptor*	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	55	45
Maximum level, dB	70	65

*Measured at the property line of the noise-sensitive receptor

This ordinance, however, will not apply to the REP. The Applicant provided staff with a letter from Placer County explaining that, since the source of the noise lies within the City of Roseville, the County deems the ordinance not applicable to the project.

POWER PLANT EFFICIENCY

FEDERAL

No federal LORS apply to the efficiency of this project.

STATE

No State LORS apply to the efficiency of this project.

LOCAL

No local or county ordinances apply to power plant efficiency.

POWER PLANT RELIABILITY

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation [Cal. Code Regs., tit. 20, § 1752(c)]. Commission staff takes the approach that a project is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely the case if the project exhibits reliability at least equal to that of other power plants on that system.

PUBLIC HEALTH

FEDERAL

The Clean Air Act of 1970 (42 U.S.C., section 7412)

This section requires new sources, which emit more than 10 tons per year of air toxics or any combination of air toxics, to apply the Maximum Achievable Control Technology (MACT).

STATE

California Health and Safety Code section 41700

This section of the code states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have a natural tendency to cause injury or damage business or property.”

California Health and Safety Code section 39650 et seq.

This section of the code mandates that the California Environmental Protection Agency (Cal-EPA) establish safe exposure limits for toxic, non-criteria air pollutants, and identify the best available methods for controlling their emission. These laws also require that the new source review rules for each air district include regulations establishing procedures for controlling the emission of these pollutants. The toxic emissions from natural gas combustion are listed in the California Air Resources Board’s (CARB’s) Toxic Emissions Factors (CATEF) database for natural gas-fired combustion turbines to allow for uniform assessment as emitted from combustion and non-combustion sources in the state. Cal-EPA has developed specific cancer potency estimates for assessing any cancer risk that these air toxics may pose at specific exposure levels. For toxic air pollutants that do not cause cancer, Cal-EPA established the previously noted no-effects levels (also known as reference exposure levels or RELs) for assessing the likelihood of producing health effects at specific exposure levels. Such health effects would be considered significant only when exposure exceeds these reference levels. Staff uses these Cal-EPA potency estimates and reference exposure values in its health risk analyses.

Health and Safety Code section 44300 et seq.

This section of the code requires facilities, which emit large quantities of criteria pollutants, and any amount of non-criteria pollutants, to provide the local air district an inventory of toxic emissions. Operators of such facilities may also be required to prepare a quantitative health risk assessment to address the potential

health risks involved. The ARB ensures statewide implementation of these requirements through the state's air districts.

California Code of Regulations, Title 22, section 60306

This section mandates that, whenever recycled water is used in an industrial cooling system involving the use of a cooling tower that creates a mist, disinfected tertiary recycled water shall be used. It also requires that when a cooling system uses recycled water in conjunction with a cooling tower that creates a mist that could come into contact with employees or members of the public, a drift eliminator and chlorine, or other biocide shall be used to treat the cooling system re-circulating water to minimize the growth of Legionella and other micro-organisms.

LOCAL

Placer County Air Pollution Control District Rule 502

This rule requires safe exposure limits for toxic and other air pollutants, use of Best Available Control Technology (BACT) and New Source Review (NSR).

SOCIOECONOMICS

California Government Revenue and Taxation Code 202(a)(4) exempts city property from taxes. California Government Code section 65995(d) exempts facilities owned and occupied by agencies of local government from school impact fees.

SOIL AND WATER RESOURCES

FEDERAL

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs).

Section 401 of the CWA requires that any activity that may result in a discharge into a water body must be certified by the RWQCB. Section 401 of the CWA applies to both the REP site and the stream crossings during pipeline construction. This certification ensures that the proposed activity will not violate state and federal water quality standards.

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (ACOE) to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. The ACOE issues site specific or general (Nationwide) permits for such discharges.

STATE

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Water quality criteria for the project area are contained in the Water Quality Control Plan, Fourth Edition, for the Sacramento River and San Joaquin river Basins. This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the state's waters and land. Those standards are applied to the proposed project through the Waste Discharge Requirements permit.

California Water Code

- Section 13550 requires the use of reclaimed water where available, as determined by the SWRCB. The availability of reclaimed water is based upon a number of criteria, which include provisions that the quality and quantity of the reclaimed water are suitable for the use, the cost is

reasonable, the use is not detrimental to public health, and will not impact downstream users or biological resources.

- Section 13551 of the Water Code prohibits the use of "…water from any source of quality suitable for potable domestic use for nonpotable uses, including …industrial… uses, if suitable reclaimed water is available…" given conditions set forth in Section 13550. Those conditions take into account the quality and cost of the water, the potential for public health impacts and the effects on downstream water rights, beneficial uses and biological resources.

- Section 13552.6 of the Water Code specifically identifies that the use of potable domestic water for cooling towers, if suitable reclaimed water is available, is an unreasonable use of water. The availability of reclaimed water is based upon a number of criteria that must be taken into account by the SWRCB. Those criteria are that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, and the use is not detrimental to public health, will not impact downstream users or biological resources, and will not degrade water quality.

- Section 13552.8 of the Water Code states that any public agency may require the use of reclaimed water in cooling towers if certain criteria are met, as determined by the SWRCB. Those criteria include that reclaimed water is available and meets the requirements set forth in section 13550; the use does not adversely affect any existing water right; and if there is public exposure to cooling tower mist using reclaimed water, appropriate mitigation or control is necessary.

Recycling Act of 1991

The California Legislature's Water Recycling Act of 1991 (Water Code § 13575 et seq.) makes several findings and declarations regarding California's water resources and the need to develop reliable water sources. The Act encourages the use of recycled water for certain uses and established standards for the development and implementation of recycled water programs.

California Code of Regulations

Under Title 22 of the California Code of Regulations, the California Department of Health Services (DHS) reviews and approves wastewater treatment systems to ensure they meet tertiary treatment standards allowing use of reclaimed water for industrial processes such as steam production and cooling water.

Title 17 of the California Code of Regulations addresses the requirements for backflow prevention and cross connections of potable and nonpotable water lines.

The California Safe Drinking Water and Toxic Enforcement Act

This Act (California Health & Safety Code Section 25249.5 et seq.) prohibits actions contaminating drinking water with chemicals known to cause cancer or possessing reproductive toxicity. The requirements of the Act are administered by the RWCQB.

State Water Resources Control Board

The SWRCB has adopted policies that provide guidelines for water quality protection. The principal policy of the SWRCB that specifically addresses the siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling (adopted as Resolution 75-58 on June 19, 1975). This policy states that fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound.

State Water Resources Control Board Resolution 77-1 encourages and promotes reclaimed water use for nonpotable purposes.

LOCAL

City of Roseville Municipal Code & Conditions of Approval

Section 14.17 – Recycle Water Policy requires recycled water to be used in a manner that is in compliance with all LORS and in lieu of potable water where feasible.

Appendix A, Standard Conditions of Approval -- Major Project Permit, Roseville Energy Project.

TRAFFIC AND TRANSPORTATION

FEDERAL

- Title 49, Code of Federal Regulations. Chapter 11, Subchapter C. These authorities establish national standards for the transportation of hazardous materials.
- Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the type of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G, Federal Motor Carrier Regulations, addresses safety considerations for the transport of goods, materials, and substances over public highways.
- Part 77, Federal Aviation Administration (FAA) Regulations, establishes standards for determining obstructions in navigable airspace and sets forth requirements for notification to the FAA of proposed construction. Notification is also required if the structure or obstruction is more than a specified height and falls within any restricted airspace in the approach to airports.

STATE

The California Vehicle Code and the Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, and the transportation of hazardous materials and rights-of-way. In addition, the California Health and Safety Code addresses the transportation of hazardous materials. Provisions within the California Vehicle Code are as follows:

- Section 353 defines hazardous materials.
- Sections 31303-31309 regulate the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- Section 31030 identifies commercial shipping routes for specified waste streams.
- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of inhalation hazards and poisonous gases.
- Sections 34000-34121 establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5, and 34510-11 regulate the safe operation of vehicles, including those used for the transportation of hazardous materials.

- Section 25160 et seq. address the safe transport of hazardous materials.
- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.
- Sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. These sections also require certificates permitting the operation of vehicles transporting hazardous materials.
- California Streets and Highways Code, sections 117 and 660-72, and California Vehicle Code, section 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Street and Highways Code, sections 660, 670, 1450, 1460, 1470, and 1480, regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.
- In accordance with Section 21400 of the California Vehicle Code, and per the California Department of Transportation (Caltrans), all construction within the public right-of-way will need to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones."

LOCAL

Placer County General Plan

The Placer County General Plan is the major controlling document for growth and development in Placer County and is evaluated and revised every ten years. The 1994 Plan is under revision and the new plan is expected to be adopted by the Placer County Board of Supervisors sometime in 2004. The goals and policies for the County's transportation and circulation system can be found in Section Three of the 1994 General Plan. A principal goal is to provide for the long-range planning and development of the county's roadway system to ensure the safe and efficient movement of people and goods (County of Placer 1994).

City of Roseville Comprehensive General Plan, Transportation Element

The Circulation Element of the City of Roseville's General Plan establishes goals, policies, and identifies implementation measures for City traffic and transportation systems, and its provisions are mandated by State law. The Roseville City Council is the administering agency.

The major goals of the Circulation Element are to: ensure that the City's circulation system provides for the safe, efficient, and reliable movement of people and goods; shift from the automobile to other modes of transportation; and provide an adequate level of transportation service for all persons traveling in and through Roseville (City of Roseville 1992). The City General Plan set the performance standards for intersections at LOS C.

The Environmental Impact Report for the West Roseville Specific Plan

The Transportation and Circulation section of the West Roseville Specific Plan describes the roadway improvements that would be needed to meet an acceptable level of service (LOS) when full development of all vacant lands within the sphere of influence is achieved. A portion of the Plan includes roads that surround the REP.

TRANSMISSION LINE SAFETY AND NUISANCE

AVIATION SAFETY

Any potential hazard to area aircraft would relate to the potential for collision in the navigable air space. The applicable federal LORS, as discussed below, are intended to ensure the distance and visibility necessary to prevent such collisions.

FEDERAL

- Title 14, Part 77 of the Federal Code of Regulations (CFR), "Objects Affecting the Navigation Space." Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid the aviation hazards of concern.
- FAA Advisory Circular (AC) No. 70/460-2H, "Proposed Construction and or Alteration of Objects that May Affect the Navigation Space." This circular informs each proponent of a project that could pose an aviation hazard of the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA.
- FAA AC No. 70/460-1G, "Obstruction Marking and Lighting." This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

INTERFERENCE WITH RADIO-FREQUENCY COMMUNICATION

Transmission line-related radio-frequency interference is one of the indirect effects of line operation and is produced by the physical interactions of line electric fields. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge, but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines.

Electric fields are unable to penetrate most materials, including the soil, therefore, such interference and other electric field effects are not associated with underground lines. The level of any such interference usually depends on the magnitude of the electric fields involved. Because of this, the potential for perception could be assessed from considering the field strength estimates obtained for the line. The following regulations are intended to ensure that such lines are located away from areas of potential interference and that any interference is mitigated whenever it occurs.

Federal

- Federal Communications Commission (FCC) regulations are specified in Title 47 CFR, Section 15.25. Provisions of these regulations prohibit operation of any devices producing force fields, which interfere with radio communications, even if (as with transmission lines) such devices are not intentionally designed to produce radio-frequency energy. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis. Staff recommends specific conditions of certification as necessary to ensure compliance with this FCC requirement.

State

- California Public Utilities Commission (CPUC), General Order 52 (GO-52), governs the construction and operation of power and communications lines to prevent or mitigate inductive interference.

Several design and maintenance options are available for minimizing these electric field-related impacts. When incorporated into the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

AUDIBLE NOISE

Industry Standards

There are no design-specific federal or state regulations to limit the audible noise from transmission lines. As with radio noise, such noise is limited through design, construction or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency maintainability and reliability. All modern overhead high-voltage lines are designed to assure compliance with such noise limits. As with radio-frequency noise, such audible noise usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying or hissing sound or hum, especially in wet weather. Since the noise level depends on the strength of the line electric field, the potential for perception can be assessed from estimates of the field strengths expected during operation. Such noise is usually generated during rainfall, but mainly from overhead lines of 345 kV or higher. It is, therefore, not generally expected at significant levels from those of less than 345 kV as proposed for REP. Research

by the Electric Power Research Institute (EPRI 1982) has validated this by showing the fair-weather audible noise from modern transmission lines to be generally indistinguishable from background noise at the edge of a 100-ft right-of-way.

FIRE HAZARDS

The fire hazards addressed through the following regulations are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects.

State

- CPUC, General Order 95 (GO-95), “Rules for Overhead Electric Line Construction,” specifies tree-trimming criteria to minimize the potential for power line-related fires.
- Title 14, California Code of Regulations, Section 1250: “Fire Prevention Standards for Electric Utilities” specifies utility-related measures for fire prevention.

HAZARDOUS SHOCKS

The hazardous shocks addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines.

State

- CPUC, GO-95, “Rules for Overhead Line Construction,” specify uniform statewide requirements for overhead line construction regarding ground clearance, grounding, maintenance and inspection. Implementing these requirements ensures the safety of the general public and line workers.
- Title 8, California Code of Regulations, Section 2700 et seq.: “High Voltage Electric Safety Orders,” establish essential requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.

Industrial Standards

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements in the National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. These provisions specify the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. They are intended to minimize the potential for direct or indirect contact with the energized line.

NUISANCE SHOCKS

Industry Standards

Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line electric and magnetic fields.

There are no design-specific federal or state regulations to limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). As with the proposed overhead lines, the applicant will be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way. Staff recommends specific conditions of certification as necessary to ensure that such grounding is made along the proposed route.

ELECTRIC AND MAGNETIC FIELD (EMF) EXPOSURE

The possibility of deleterious health effects from electric and magnetic field exposure has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of describing exposure to them together as EMF exposure. The available evidence as evaluated by CPUC, other regulatory agencies, and staff, has not established that such fields pose a significant health hazard to exposed humans. However, staff considers it important, as does the CPUC, to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Staff, therefore, considers it appropriate in light of present uncertainty, to recommend reduction of such fields as feasible without affecting safety, efficiency, reliability and maintainability.

While there is considerable uncertainty about EMF health effects, the following facts have been established from the available information and have been used to establish existing policies:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.
- The measures employed for such field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures.

State

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. It requires each utility within its jurisdiction to establish EMF-reducing measures and incorporate such measures into the designs for all new or upgraded power lines and related facilities within their respective service areas. The CPUC further established specific limits on the resources to be used in each case for field reduction. Such limitations were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Utilities, such as Roseville Energy, which are not within the jurisdiction of the CPUC, voluntarily comply with these CPUC requirements. This CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013.

In keeping with this CPUC policy, staff requires a showing that each proposed overhead line would be designed according to the EMF-reducing design guidelines applicable to the utility service area involved. These field-reducing measures can impact line operation if applied without appropriate regard for environmental and other local issues bearing on safety, reliability, efficiency, and maintainability. Therefore, it is up to each applicant to ensure that such measures are applied in ways that prevent significant impacts on line operation and safety. The extent of such applications would be reflected by the ground-level field strengths as measured during operation. When estimated or measured for lines of similar voltage and current-carrying capacity, such field strength values can be used by staff and other regulatory agencies to assess the effectiveness of the applied reduction measures. These field strengths can be estimated for any given design using established procedures. Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m), for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the support structures, degree of cancellation from nearby conductors, distance between conductors and, in the case of magnetic fields, amount of current in the line.

Since each new line in California is currently required by the CPUC to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved, its fields are required under this CPUC policy to be similar to fields from similar lines in that service area. Designing the proposed REP connection line according to existing RE field strength-reducing guidelines would constitute compliance with the CPUC requirements for line field management. Staff recommends a specific condition of certification (**TLSN-1**) to ensure implementation of the design measures necessary.

Industrial Standards

There are no health-based federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. However, the federal government continues to conduct and encourage research necessary for an appropriate policy on the EMF health issue.

In the face of the present uncertainty, several states have opted for design-driven regulations ensuring that fields from new lines are generally similar to those from existing lines. Some states (Florida, Minnesota, New Jersey, New York, Montana) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects. Most regulatory agencies believe, as does staff, that health-based limits are inappropriate at this time. They also believe that the present knowledge of the issue does not justify any retrofit of existing lines.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component whose effects can manifest themselves as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate soil, building and other materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic fields from the more visible overhead transmission and other high-voltage power lines, staff considers it important, for perspective, to note that an individual in a home could be exposed to much stronger fields while using some common household appliances (National Institute of Environmental Health Services and the U.S Department of Energy, 1995). The difference between these types of field exposures is that the higher-level, appliance-related exposures are short-term, while the exposure from power lines are lower level, but long-term. Scientists have not established which of these types of exposures would be more biologically meaningful in the individual. Staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than around high-voltage power lines.

TRANSMISSION SYSTEM ENGINEERING

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), "Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance, operation, or use of overhead electric lines and to the public in general.
- Western Systems Coordinating Council (WSCC) Reliability Criteria provide the performance standards used in assessing the reliability of the interconnected system. These Reliability Criteria require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. The WSCC Reliability Criteria include the Reliability Criteria for Transmission System Planning, Power Supply Design Criteria, and Minimum Operating Reliability Criteria. Analysis of the WSCC system is based to a large degree on WSCC Section 4 "Criteria for Transmission System Contingency Performance" which requires that the results of power flow and stability simulations verify established performance levels. Performance levels are defined by specifying the allowable variations in voltage, frequency and loading that may occur on systems other than the one in which a disturbance originated. Levels of performance range from no significant adverse effect outside a system area during a minor disturbance (loss of load or facility loading outside emergency limits) to a performance level that only seeks to prevent system cascading and the subsequent blackout of islanded areas. While controlled loss of generation, load, or system separation is permitted in extreme circumstances, their uncontrolled loss is not permitted (WSCC 1998).
- North American Electric Reliability Council (NERC) Planning Standards provide policies, standards, principles and guides to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC's Criteria for Transmission System Contingency Performance. The NERC planning standards provide for acceptable system performance under normal and contingency conditions. The NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).
- Cal-ISO's Reliability Criteria also provide policies, standards, principles, and guides to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC's Criteria for Transmission System Contingency Performance and the NERC Planning Standards. The Cal-ISO Reliability Criteria incorporate the WSCC Criteria and NERC Planning Standards. However, the Cal-ISO Reliability Criteria also provide some

additional requirements that are not found in the WSCC Criteria or the NERC Planning Standards. The Cal-ISO Reliability Criteria apply to all existing and proposed facilities interconnecting to the Cal-ISO controlled grid. It also applies when there are any impacts to the Cal-ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the Cal-ISO.

VISUAL RESOURCES

FEDERAL

The proposed project is not located on federally administered public lands and therefore is not subject to federal regulations pertaining to visual resources.

STATE

There are no State Scenic Highways within the project viewshed. Therefore, no state regulations pertaining to scenic resources are applicable to the project.

LOCAL

The proposed power plant and associated linear facilities (recycled water and natural gas supply pipelines, sanitary sewer pipeline, and storm water outfall) would be located within the City of Roseville. Therefore, the project would be subject to local LORS pertaining to the protection and maintenance of visual resources, which are found in the City of Roseville General Plan and Community Development Guidelines. The project's consistency with specific local goals, policies and guidelines pertaining to visual resources is discussed later in this analysis.

WASTE MANAGEMENT

FEDERAL

Resource Conservation and Recovery Act (42 U.S.C. § 6922)

Resource Conservation and Recovery Act (RCRA) establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding:

- record keeping practices which identify quantities of hazardous wastes generated and their disposition;
- labeling practices and use of appropriate containers;
- use of a manifest system for transportation; and
- submission of periodic reports to the U.S. Environmental Protection Agency (U. S. EPA) or authorized state agency.

Title 40, Code of Federal Regulations, part 260

These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity; and specific types of wastes are listed.

STATE

California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended)

This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)

These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.

Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)

These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, registered hazardous waste transporters must only handle hazardous waste. Generator requirements for record keeping, reporting, packaging, and labeling are also established.

Title 22, California Code of Regulations, §67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)

These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.

LOCAL

The Placer County Department of Health and Human Services has the responsibility for administration and enforcement of the California Integrated Waste Management Act for non-hazardous solid waste at the proposed REP.

The REP must also comply with the Roseville Fire Department, which will govern the storage and use of hazardous materials and wastes per Fire Code requirements. The Roseville Hazardous Materials Emergency Response Unit is responsible for emergency spills, containment and cleanup (Ex. 1, pp. 8.14-14 – 8.14-15).

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970, Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act (OSH Act) of 1970. This Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, § 651 (29 U.S.C. §§ 651 through 678). Implementing regulations are codified at Title 29 of the Code of Federal Regulations, under General Industry Standards §§ 1910.1 - 1910.1500 and clearly define the procedures for conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the general industry safety and health standards now in force under this OSH Act represent a compilation of materials from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA) which publishes the National Fire Codes.

The purpose of the Occupational Safety and Health Act is to "assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources," (29 U.S.C. § 651). The Federal Department of Labor promulgates and enforces safety and health standards that are applicable to all businesses affecting interstate commerce. The Department of Labor established the Occupational Safety and Health Administration (OSHA) in 1971 to discharge the responsibilities assigned by the OSH Act.

Applicable federal requirements include:

- 29 U.S.C. § 651 et seq. (Occupational Safety and Health Act of 1970);
- 29 C.F.R. §§ 1910.1 - 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations);
- 29 C.F.R. §§ 1952.170 – 1952.175 (federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 C.F.R. §§ 1910.1 – 1910.1500).

STATE

California passed the Occupational Safety and Health Act of 1973 ("Cal/OSHA") as published in the California Labor Code section 6300. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with sections 337 through 560 and continuing with sections 1514 through 8568. The California Labor Code requires that the Cal/OSHA Standards Board adopt standards at least as effective as the federal standards [Labor Code § 142.3(a)] and thus all Cal/OSHA health and safety

standards meet or exceed the federal requirements. California obtained federal approval of its State health and safety regulations, in lieu of the federal requirements published at Title 29 Code of Federal Regulations, sections 1910.1 through 1910.1500. The U.S. Secretary of Labor, however, continually oversees California's program and will enforce any federal standard for which the State has not adopted a Cal/OSHA counterpart.

The State of California Department of Industrial Relations is charged with responsibility for administering the Cal/OSHA plan. The Department of Industrial Relations is further split into six divisions to oversee, among other activities: industrial accidents, occupational safety and health, labor standards enforcement, statistics and research, and the State Compensation Insurance Fund (workers compensation).

Employers are responsible for informing their employees about workplace hazards, potential exposure, and the work environment (Labor Code §6408). Cal/OSHA's tool for ensuring that workers and the public are informed is the Hazard Communication standard first adopted in 1981 (Cal. Code Regs., tit. 8, § 5194). This regulation was promulgated in response to California's Hazardous Substances Information and Training Act of 1980. It was later revised to mirror the federal Hazard Communication Standard (29 C.F.R. §1910.1200) which established, on the federal level, an employee's "right to know" about chemical hazards in the workplace, but added the provision of applicability to public sector employers. A major component of this regulation is the required provision of Material Safety Data Sheets (MSDSs) to workers. MSDSs provide information on the identity, toxicity, and precautions to take when using or handling hazardous materials in the workplace.

Finally, Title 8, California Code of Regulations, section 3203 requires that employers establish and maintain a written Injury and Illness Prevent Program to identify workplace hazards and communicate them to its employees through a formal employee-training program.

Applicable State requirements include:

- Title 8, California Code of Regulations, section 330 et seq. Cal/OSHA regulations;
- Title 24, California Code of Regulations, section 3 et seq. - incorporates the current addition of the Uniform Building Code;
- Health and Safety Code, section 25500 et seq. - Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at the facility;
- Health and Safety Code, sections 25500 - 25541 - Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at the facility.

LOCAL

The California Building Standards Code published at Title 24 of the California Code of Regulations, section 3 et seq. is comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and fire codes applicable to the project. Local planning/building & safety departments enforce the California Uniform Building Code.

National Fire Protection Association (NFPA) standards are published in the California Fire Code. The fire code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code reflects the body of regulations published at Part 9 of Title 24 pertaining to the California Fire Code.

Similarly, the Uniform Fire Code (UFC) Standards, a companion publication to the California Fire Code, contains standards of the American Society for Testing and Materials and the NFPA. It is the United States' premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition. The City of Roseville Fire Department is the administering agency for the 2000 Uniform Fire Code (Hendrickson 2002).

Applicable local (or locally enforced) requirements include:

- 2001 Edition of California Fire Code and all applicable NFPA standards (Cal. Code Regs., tit. 24, Part 9);
- California Building Code Title 24, California Code of Regulations (Cal. Code Regs., tit. 24, § 3 et seq.).
- Uniform Fire Code, 2000

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION **FOR THE ROSEVILLE ENERGY PARK PROJECT**	**Docket No. 03-AFC-01**

EXHIBIT LIST

Exhibit 1: Application for Certification for the Roseville Energy Park, Volumes I and II, docketed October 28, 2003. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 2: Supplement to AFC in Response to Data Adequacy Recommendations, docketed December 15, 2003. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 3: RE Responses to First Set of CEC Data Requests, Nos. 1-71, docketed on February 6, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 4: RE's Draft Storm Water Pollution Prevention Plan submitted in response to Staff Data Request No. 55, docketed on February 6, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 5: RE's Draft Spill Prevention, Control, and Counter measures Plan for Operation, submitted in response to Staff Data Request 57, docketed on February 24, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 6: Letter from Schneider to Habashi dated February 24, 2004 regarding purchase and sale of Enron Emission Reduction Credits, docketed on February 14, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 7: Supplemental Responses to CEC Data Requests, Nos. 70-71, docketed March 1, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 8: Letter from Placer County regarding inapplicability of Placer County Noise Ordinance to REP. Docketed on March 9, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 9: Responses to Second Set of CEC Data Requests, Nos. 72-85. Docketed on April 1, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 10: RE's Supplemental Evaluation of Indirect Induced Economic Effects from Construction and Operation of the REP. Docketed April 6, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 11: Maps showing REP Proposed Construction Laydown, Parking and Office area. Docketed on April 6, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 12: Placer County Air Pollution Control District Preliminary Determination of Compliance. Docketed on May 27, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 13: RE's supplemental Filing regarding Biological Resources Permit Application, Wetland Delineation Report, Biological Assessment, and Rare and Endangered Plant Survey. Docketed on July 8, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 14: RE's Preliminary Comments on the Preliminary Staff Assessment. Docketed on July 16, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 15: Final West Roseville Specific Plan. Docketed on August 3, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 16: RE's Supplemental Comments on the Preliminary Staff Assessment. Docketed on August 11, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 17: RE's Revised Site Plan, Layout, and Construction Laydown Plan. Dated August 12, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 18: RE's Cumulative Air Quality Impact Analysis. Docketed on August 26, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 19: RE's Proposed Revision to Staff-proposed Condition of Certification VIS-4. Docketed on September 10, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 20: RE's Draft Cultural Resources Mitigation, Implementation and Monitoring Plan. Docketed on September 22, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 21: Letter from City of Roseville to James Reede regarding visual and vapor plumes, dated September 29, 2004. Docketed on September 29, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 22: City of Roseville's Comments to the Preliminary Staff Assessment. Docketed on September 29, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 23: RE's Supplemental Information regarding Project Description. Docketed on October 1, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 24: Letter from City of Roseville to James Adams regarding Roseville Accident Data. Docketed on October 7, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 25: Addendum to Wetland Delineation Report and Request for Wetland Verification. Docketed on October 13, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 26: Letter from Roseville Joint Union High School District to James Reede regarding air quality concerns. Docketed on October 13, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 27: RE's Biological Resources Mitigation Summary. Docketed on October 22, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 28: Placer County Air Pollution Control District Final Determination of Compliance. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 29: Testimony of Bob Hren and Tom Habashi – Project Description. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 30: Testimony of Debra Crowe and Mark Morse – Biological Resources. Docketed on January 14, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 31: Testimony of Greg Darvin and Jim McLucas – Air Quality. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 32: Testimony of Doug Davy – Cultural Resources. Docketed on January 14, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 33: Testimony of Karen Parker – Hazardous Materials. Docketed on January 14, 2004. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 34: Testimony of Mathew Franck – Land use. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 35: Testimony of Mark Bastasch – Noise and Vibration. Docketed on January 14. 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 36: Testimony of Doug Davy – Public Health. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 37: Testimony of Fatuma Yusuf – Socioeconomics. Docketed on January 14, 20005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 38: Testimony of David Jones, Doug Davy and Jim McLucas – Soil and Water Resources. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 39: Testimony of Rob Jensen and Bob Hren – Traffic and Transportation. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 40: Testimony of Russ Nichols – Transmission System Engineering and Transmission Line Safety and Nuisance. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 41: Testimony of Thomas Priestly – Visual Resources. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 42: Testimony of Karen Parker – Waste Management. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 43: Testimony of Andrea Grenier – Worker Safety and Fire Protection. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 44: Testimony of Steve Clark – Facility Design, Power Plant Efficiency and Reliability. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 45: Testimony of Tom Lae and W. Geoffrey Spaulding – Geology and Paleontology. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 46: Testimony of Andrea Grenier – Compliance Monitoring and Facility Closure. Docketed on January 14, 2005. Sponsored by Applicant; admitted into evidence on January 25, 2005.

Exhibit 47: Final Staff Assessment, dated November 2004, docketed on November 30, 2004. Sponsored by Staff, admitted into evidence on January 25, 2005.

Exhibit 48: Staff Air Quality Errata, dated January 5, 2005. Sponsored by Staff, admitted into evidence on January 25, 2005.

Exhibit 49: Staff Report of Resolution of Issues, dated January 7, 2005. Sponsored by Staff, admitted into evidence on January 25, 2005.

Exhibit 50: Roseville Electric's Revised Prehearing Conference Statement, dated January 7, 2005. Sponsored by Applicant, admitted into evidence on January 25, 2005.

Exhibit 51: Roseville Electric's Traffic and Transportation Proposed Condition of Certification TRANS-7, dated January 24, 2005. Sponsored by Applicant, admitted into evidence on January 25, 2005.

Exhibit 52: Roseville Electric's Plume Abated Cooling Tower, Implementation Timeline Estimate, dated January 24, 2005. Sponsored by Applicant, admitted into evidence on January 25, 2005.

Exhibit 53: Plume Abatement Attachment A. Sponsored by Applicant, admitted into evidence on January 25, 2005.

Exhibit 54: Staff Second Errata to the Final Staff Assessment, dated January 19, 2005. Sponsored by Staff, admitted into evidence on January 25, 2005.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE ROSEVILLE ENERGY PARK BY THE CITY OF ROSEVILLE	**DOCKET NO. 03-AFC-1** **PROOF OF SERVICE LIST** **(*REVISED FEBRUARY 9, 2004)**

I, _____, declare that on _____, I deposited copies of the attached_____, in the United States mail at *Sacramento, CA* with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
Attn: Docket No. 03-AFC-1
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

*** * * ***

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to

CONSULTANTS FOR APPLICANT

Doug Davy
CH2M HILL
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833
ddavy@ch2m.com

Andrea Grenier
Grenier & Associates, Inc.
1108 Kris Way
Roseville, CA 95661
andrea@agrenier.com

APPLICANT

Tom Habashi, Executive Director
Roseville Electric
2090 Hilltop Circle
Roseville, CA 95747
thabashi@roseville.ca.us

Robert Hren, Project Manager
Roseville Electric
2090 Hilltop Circle
Roseville, CA 95747
rhren@roseville.ca.us

COUNSEL FOR APPLICANT

Scott Galati
Galati and Blek, LLP
555 Capitol Mall, Suite 600
Sacramento, CA 95814
sgalati@gb-llp.com

INTERESTED AGENCIES

Patty Dunn
Assistant City Manager
311 Vernon Street
City of Roseville
Roseville, CA 95678
pdunn@roseville.ca.us

INTERVENORS

Adams Broadwell Joseph & Cardozo
California Unions for Reliable Energy
Att: Mark D. Joseph and Tanya A. Gulesserian
651 Gateway Boulevard, Suite 900
South San Francisco, CA 94080
mdjoseph@adamsbroadwell.com
tgulesserian@adamsbroadwell.com

I declare under penalty of perjury that the foregoing is true and correct.

[signature]

* * * *

INTERNAL DISTRIBUTION LIST

FOR YOUR INFORMATION ONLY! Parties **DO NOT** mail to the following individuals. The Energy Commission Docket Unit will internally distribute documents filed in this case to the following:

John L. Geesman
Commissioner & Presiding Member
MS-33

Arthur H. Rosenfeld
Commissioner &
Associate Member
MS-32

Gary Fay
Hearing Officer
MS-9

James Reede
Project Manager
MS-15

Kerry Willis
Staff Counsel
MS-14

PUBLIC ADVISER

Margret J. Kim
Public Adviser's Office
1516 Ninth Street, MS-12
Sacramento, CA 95814
pao@energy.state.ca.us