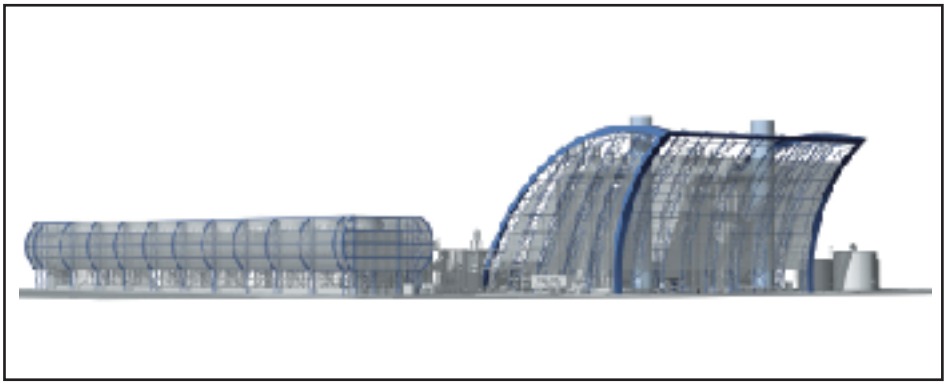
CALIFORNIA
ENERGY
COMMISSION

RUSSELL CITY ENERGY CENTER

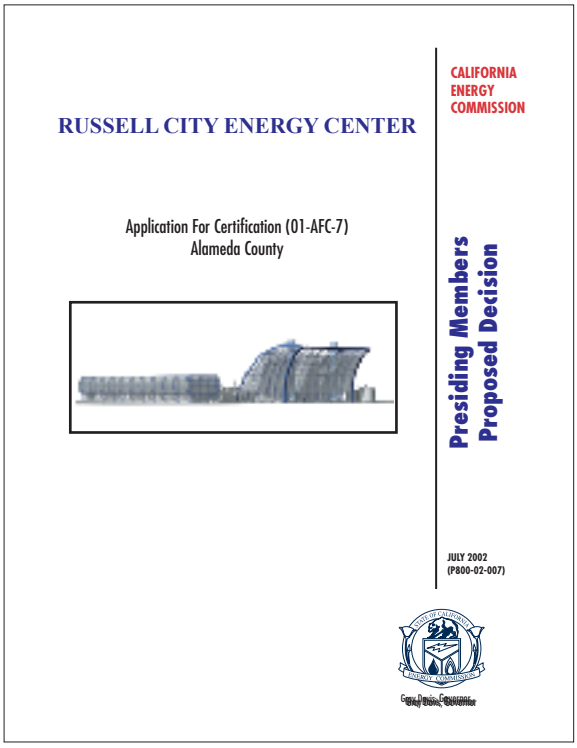
Application For Certification (01-AFC-7)
Alameda County



Presiding Members Proposed Decision

JULY 2002
(P800-02-007)

Gray Davis, Governor



CALIFORNIA
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WILLIAM J. KEESE
Chairman and *Presiding Member*

ROBERT PERNELL
Commissioner and Associate Member

GARY FAY
Hearing Officer

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

In the Matter of: **Application for Certification for the the Russell City Energy Center**	**Docket No. 01-AFC-7** (AFC Accepted 7/11/01) **Order No.** 02-0911-02

COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the Calpine Russell City Energy Center Project. It incorporates the Presiding Member's Proposed Decision (PMPD) in the above-captioned matter and the Committee Errata issued on September 5,2002. The Commission Decision is based upon the evidentiary record of these proceedings (Docket No. 01-AFC-7) and considers the comments received at the September 11, 2002 business meeting. The text of the attached Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and Conditions imposed.

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

FINDINGS

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

1. The Russell City Energy Center is a merchant power plant whose capital costs will not be borne by the State's electricity ratepayers.

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

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in,

nor contribute substantially to, any significant direct, indirect, or cumulative adverse environmental impacts.

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

5. The evidence of record establishes that no feasible alternatives to the project, as described during these proceedings, exist which would reduce or eliminate any significant environmental impacts of the mitigated project.

6. The evidence of the record does not establish the existence of any environmentally superior alternative site.

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

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

ORDER

Therefore, the Commission ORDERS the following:

1. The Application for Certification of the Calpine Corporation, Russell City Energy Center, as described in this Decision, is hereby approved and a certificate to construct and operate the project is hereby granted.

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

3. This Decision is final, issued, and effective within the meanings of Public Resources Code sections 25531 and 25901, as well as 20 Cal. Code of Regs. section 1720.4, when voted upon by the Commission. Anyone seeking judicial review of the Decision must file a Petition for Review with the California Supreme Court no later than thirty (30) days from September 11, 2002.

4. For purposes of reconsideration pursuant to Public Resources Code section 25530 and 20 Cal. Code of Regs. section 1720(a), this Decision is adopted when it is filed with the Commission's Docket Unit. Anyone seeking reconsideration of this Decision must file a petition for reconsideration no later than thirty (30) days from the date the Decision is docketed. The filing of a petition for reconsideration does not extend the 30 day period for seeking judicial review mentioned above, which begins on September 11, 2002.

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

6. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents as provided by Public Resources Code section 25537 and California Code of Regulations, title 20, section 1768.

Dated: September 11, 2002

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

WILLIAM J. KEESE
Chairman

ROBERT PERNELL
Commissioner

ARTHUR H. ROSENFELD, Ph.D.
Commissioner

JAMES D. BOYD
Commissioner

JOHN L. GEESMAN
Commissioner

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INTRODUCTION

A. SUMMARY OF THE PROPOSED DECISION

This document Decision[1] contains the Commission's determinations regarding the Application for Certification (AFC) for the Russell City Energy Center LLC (RCEC) and includes the findings and conclusions required by law. The Decision is based exclusively on the evidentiary record established at the hearings on the application. We have independently evaluated this evidence, presented the Commission's reasons supporting its Decision, and provided references to portions of the record, which support the Commission's findings and conclusions.[2] The Conditions of Certification, which follow each topic section, will ensure that the Russell City Energy Center is designed, constructed and operated in the manner necessary to protect public health and safety, provide needed electrical generation, and preserve environmental quality.

Russell City Energy Center LLC (Applicant), proposes to build a 600 megawatt (MW) natural gas-fired, combined-cycle electric generating facility located at the intersection of Enterprise and Whitesell Streets in the Industrial Corridor of the City of Hayward in Alameda County, California.

The proposed project will use a hybrid, wet/dry plume-abated mechanical draft cooling tower towers connecting the RCEC switchyard to the existing Pacific Gas & Electric (PG&E) Eastshore substation. It will also include 0.9 miles of an underground natural gas pipeline that will extend from PG&E's gas distribution line 153 to the RCEC site. The project's water supply will be principally made up

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[1] The requirements for the Final Commission Decision are set forth in the Commission's regulations, Title 20, California Code of Regulations, section 1755.

[2] References to the evidentiary record, which appear in parentheses following the referenced material, may include an exhibit number and/or a reference to the page number of the reporter's transcript. All transcript references are to the evidentiary hearing transcript of 6/20/02, unless otherwise noted. *e.g.*, (Ex. 2, p. 55; RT 123.)

of secondary effluent from the City of Hayward's Water Pollution Control Facility (WPCF). This supply will receive tertiary-level treatment from an Advanced Water Treatment (AWT) facility to be constructed by the project and owned and operated by the City of Hayward.

Project construction is expected to take approximately 18 to 21 months, employing a peak construction force of 485 workers. When completed, the project will have a permanent operational staff of about 25 employees. The capitol cost of the RCEC project is expected to be between $300 and $400 million.

During the power plant siting process, Energy Commission staff (Staff) and Applicant carried out extensive coordination with numerous local, state, and federal agencies. These included the Bay Area Air Quality Management District (BAAQMD or District), City of Hayward, East Bay Regional Park District (EBRPD) and other regulatory agencies with an interest in this project. Through these efforts, the various parties and agencies have reached mutual agreement on almost all aspects of the proposed project and upon the necessary Conditions of Certification.

At the time of the evidentiary hearing two disputes remained between Applicant and Staff. In the area of air quality, the Staff proposed additional site-specific monitoring during construction. The Commission has decided not to require the additional monitoring at this time. However, if the demonstration construction-monitoring project at the Los Esteros Critical Energy Facility proves effective, Commission staff will evaluate the benefits of requiring similar monitoring during construction of the RCEC.

Applicant and Staff also disputed the visual impacts of relocating the KFAX radio towers from the proposed project site to a location further north. While Staff analyzed the visual impacts of the tower relocation as part of its duties under the

California Environmental Quality Act (CEQA), the Commission does not have permitting authority over the radio tower relocation. Nevertheless, the Commission is required to evaluate and make recommendations to permitting agencies on impacts which occur as part of the "whole of a project" as defined by CEQA guidelines. In this case, the Commission finds that the tower relocation will have a negative effect on visual values in the parking area of a shoreline park. However, we find that the impact is not significant.

B. SITE CERTIFICATION PROCESS

The Russell City Energy Center LLC and its related facilities fall within Energy Commission licensing jurisdiction. (Pub. Resources Code, §§ 25500 et seq.). During its licensing proceedings, the Commission acts as lead state agency under CEQA (Pub. Resources Code, §§ 25519(c), 21000 et seq.), and the Commission's siting process and associated documents are functionally equivalent to the preparation of the traditional Environmental Impact Report. (Pub. Resources Code, § 21080.5.) The siting process is designed to allow the review of a project to be completed within a limited period of time; a license issued by the Commission is in lieu of other state and local permits.

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

Significantly, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally, or on a more formal level as an Intervenor with the same legal rights and duties as the project developers. Public participation is encouraged at every stage of the process.

The process begins when an Applicant submits the Application for Certification (AFC). Commission staff reviews the data submitted as part of this AFC, and recommends to the Commission whether or not the Applicant's filing contains adequate information to permit review to commence. Once the Commission determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process. The Commission also appoints a hearing officer to provide legal assistance to the Committee in each case. This process includes holding public conferences and evidentiary hearings, as well as providing a recommendation to the full Commission concerning a project's ultimate acceptability. The Committee and ultimately the Commission serve as fact-finder and decision-maker. The role of the Commission's Public Advisor is to assist members of the public and intervenors with their understanding of and participation in the Commission's siting process.

All parties, including Applicant, Commission staff, and any intervenors, are subject to the *ex parte* rule, which prohibits them from communicating on substantive matters with Committee members, their staffs, and the hearing officer, except for communications which are on the public record.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such further technical information as is necessary. During this time, the Commission staff sponsors numerous public workshops at which intervenors, agency representatives, members of the public, Staff, and Applicant meet to evaluate and resolve pertinent issues. Staff then publicizes its initial technical evaluation of the project in the document called the "Preliminary Staff Assessment" (PSA).

Following this, the Committee schedules formal evidentiary hearings. At the hearings, Staff presents testimony in the form of a Final Staff Assessment (FSA). In addition, the Applicant and all others who have become formal parties are able

to present testimony, under oath or affirmation. The testimony is subject to cross-examination by other parties and to questioning by the Committee. The public may also comment on a proposed project at these hearings. Evidence and public comment adduced during these hearings provides the basis for the decision-makers' analysis.

This analysis appears in a Committee recommendation to the full Commission in the form of the Presiding Member's Proposed Decision, which is available for a public review period of at least 30 days. Depending upon the extent of revision necessary in response to comments received during this period, the Committee may then elect to publish a revised version. If so, this latter document triggers an additional 15-day public comment period. If not, a formal errata is used to make non-substantive or minor changes to the formal text. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing. Prior to the decision, the parties and members of the public present at the hearing may again offer comments.

C. PROCEDURAL HISTORY

On May 22, 2001, Calpine/Bechtel Joint Development (Calpine/Bechtel) filed an Application for Certification (AFC) for the RCEC.[3] The Energy Commission determined the AFC to be data adequate for the Commission's 6-month process at the July 11, 2001 Business Meeting, thus beginning the Commission's review of this project. [4]

Upon accepting the AFC, the Commission appointed a Committee comprised of Chairman William J. Keese as Presiding Commissioner, and Commissioner

[3] In late 2001, Applicant informed the Commission by letter that the project name and ownership had changed. The current name is Russell City Energy Center LLC, which is a wholly owned subsidiary of Calpine Corporation.

[4] Public Resources Code section 25550 sets forth a process for Commission review of and decision upon an AFC within 6 months of an applicant's filing.

Robert Pernell as Associate, to conduct the Commission's review process for the project. The Committee held a Site Visit and Informational Hearing on August 7, 2001. At that hearing the Staff, presented its Issue Identification Report, which supported processing the project pursuant to the Commission's 6-month process. Accordingly, the Committee adopted a schedule to implement that process.

The Committee subsequently granted petitions to intervene filed by California Unions for Reliable Energy, Parker Ventures LLC, and East Bay Regional Park District.[5]

However, in the sixth month of the sitting process it was apparent that other local, state, and federal agencies that provide critical information for the Commission's licensing process were not able to do so within the six-month time-frame. At the request of Applicant on April 15, 2002, the Committee converted the RCEC project from a 6-month proceeding to a 12-month proceeding. This conversion was granted on April 26, 2002, by Committee Order.

On June 10, 2002, Staff issued its Final Staff Assessment on the project. The Committee conducted an evidentiary hearing on June 20, 2002, at the conclusion of which the evidentiary record was closed.

On the morning of the evidentiary hearing, Barbara George, on behalf of Woman's Energy Matters (WEM), petitioned to intervene in the case and asked for an additional two-months to prepare testimony. The Committee denied the petition on the grounds that it was not timely filed and that petitioner had failed to show good cause for the late filing. Petitioner WEM appealed the Committee ruling to the full Commission for reconsideration. The full Commission heard the matter on August 14, 2002 and denied Barbara George's appeal on behalf of Women's Energy Matters (WEM).

[5] The above-note Petitions were filed respectively on July 16, 2001, August 28, 2001, and September 21, 2001.

D. RESPONSE TO COMMENTS

1. Calpine

Calpine stated that it strongly supports the PMPD and offered only a few non-substantive comments and typographical corrections. Applicant added that it has no disagreement with Staff's filed comments with the exception of Staff's recommendation that the Committee reconsider the question of hand-held monitoring for PM10 during construction. Applicant disagrees with such a requirement unless the demonstration program for the Los Esteros project is shown to be effective for monitoring PM10 during construction.

2. Commission Staff

Staff filed comments recommending that the Committee reconsider the question of hand-held monitoring for PM10 during construction. In addition, Staff will propose language for a Condition of Certification which will incorporate into the condition statements from the PMPD on monitoring, and set a protocol for determining if, and how such monitoring would be required at the Russell City construction site.

3. Agency Comments

No agencies filed written comments on the PMPD or offered oral comments at the Committee Conference.

4. Comments from Individuals

Charlie Cameron submitted comments regarding formatting of resumes in the FSA.

Sheila Junge expressed concern as to whether Applicant's agreements with the City of Hayward and with Waste Management Corporation are sufficiently complete to secure the compensatory wetlands addressed in the PMPD. Calpine

Development Manager James R. Leahy stated that Applicant has an option to purchase the Waste Management property in question.

Janice Delfino asked if project construction is delayed, will that also delay the project-related wetland restoration projects. Mr. Leahy responded that the various purchases of shoreline wetlands, which Calpine will make pursuant to any Commission permit, will not occur until the commencement of project construction. Thus, a delay in construction would also delay mitigation steps.

Howard Beckman commented that while the project site is at the edge of an industrial corridor, it also abuts a vast area of natural wetlands. He pointed out that his stated concern regarding noise impacts on wildlife pertained specifically to impacts from *operational* noise from the project. He also noted that, contrary to the statement in the PMPD, controversy did exist about mitigation for biological impacts. However, we note that the controversy was not among parties in the case but rather from members of the public, including Mr. Beckman. Finally, he disagrees with the language contained in Condition of Certification BIO-12. His specific concerns are addressed in the section of the Decision on Biological Resources.

I. PROJECT PURPOSE AND DESCRIPTION

SUMMARY OF THE EVIDENCE

The Applicant's objectives include selling clean and efficiently generated baseload energy to the California's electricity market; benefiting the electrical supply and transmission system within the San Francisco Bay area; providing system reliability and transmission congestion benefits; and locating generation near centers of demand for maximum efficiency and system benefits. (Ex. 1, p. 3-1; 6/20/02 RT 21.)

PROJECT LOCATION

The Applicant proposes to construct and operate an energy generating facility known as the Russell City Energy Center in the City of Hayward's industrial Corridor (Alameda County). The site will consist of 14.7 acres and will accommodate generation facilities, an advanced water treatment facility, control and administration building, emission control equipment, storage tanks, parking area, and storm water detention basins. The proposed facilities will be located in the southwest corner of the intersection of Enterprise Avenue and Whitesell Street, directly south of the City of Hayward's Water Pollution Control Facility (WPCF). This location is approximately 2 miles from the east entrance to the San Mateo-Hayward Bridge (State Route 92). See **Project Description Figure 1** for the local setting of this proposed project. In addition, primary construction worker parking are proposed to be located adjacent to the PG&E Eastshore Substation.

Although the project site lies within an area zoned for industrial use, significant biological resources areas lie to the west and southwest of the site. These include: Hayward Area Parks and Recreation District's (HARD) salt marsh restoration project and East Bay Regional Parks District's (EBRPD) Cogswell Marsh and Salt Marsh Harvest Mouse Preserve.

Radio broadcasting towers at the project site will require relocation to vacant land owned by the City of Hayward near the entrance to the Hayward Regional Shoreline Park. The owners of the radio towers have previously received permission from the City of Hayward to relocate the towers based on a Negative Declaration adopted by the City. The impacts of the radio tower relocation are also discussed separately in the Visual Resources section of the FSA as Appendix B. (Ex. 1)

POWER PLANT

The proposed facility will include two Siemens Westinghouse "F-class" combustion turbine generators (CTGs) equipped with dry, low oxides of nitrogen (NOx) combustors and steam injection capability; two heat recovery steam generators (HRSG); a single condensing steam turbine-generator (STG); a deaerating surface condenser; a mechanical draft hybrid, (wet/dry) plume-abated cooling tower; and support equipment. Each HRSG unit will have a 145-foot exhaust stack and will be equipped with duct burners for additional steam production when increased electric power generation is necessary. See **project Description Figure 2** for the facility and equipment configuration of the proposed project. Also see the **Visual Resources** section for discussion of the plant design.

To control emissions of air pollutants, RCEC will have gas turbines with dry, low nitrogen oxide (NOx) burners. The units will use the best available control technology (BACT) including selective catalytic reduction (SCR) for control of

NOx. The SCR system consists of a reduction catalyst and an aqueous ammonia injection system. In addition, the RCEC is required by the Bay Area Air Quality Management District to provide emission reduction credits for NOx and precursor organic compounds (POC).

NATURAL GAS FACILITIES AND TRANSMISSION LINE

Natural gas will be supplied from a 0.9-mile pipeline that will be constructed to deliver fuel from pipeline number 153 located along the Union Pacific Railroad corridor. The pressure of natural gas delivered to the site is expected to be approximately 250 pounds per square inch gauge (psig).

The RCEC will interconnect with the electrical grid from a switchyard built on the plant site, which connects to PG&E's Eastshore Substation south of State Route 92. The proposed transmission line is a 1.1-mile 230-kilovolt (kV) double-circuit overhead line that will be added to the existing corridor of the Eastshore-Grant 115 kV transmission line and run parallel to that line. The project will be responsible for the construction of seven additional transmission towers to accommodate the project's transmission line.

The California Independent System Operator (Cal-ISO) has not determined whether reconductoring of East Shore to San Mateo 230 kV transmission line will be required. At the request of Staff, the Applicant has provided an environmental assessment of the potential reconductoring of the East Shore to San Mateo 230 kV transmission line. Staff has reviewed this document and provided comments in the Transmission System Engineering section of the FSA under Appendix A. (Ex. 1.)

WATER SUPPLY AND WASTE WATER TREATMENT

The combined cycle units are proposed to use a maximum of 3.3 million gallons per day (gpd) or 3,730 acre feet of water per year. Approximately 95 percent of

the water demand would be used as makeup water for evaporation losses in the cooling tower. The remainder will be used as process water to produce steam and for other plant uses.

The cooling and process water used at RCEC will consist of secondary effluent (wastewater) supplied by the City of Hayward's Water Pollution Control Facility (WPCF) located across from the plant site. This water will be delivered from WPCF to a new advanced wastewater treatment plant (AWT) that will supply tertiary effluent water to the plant (secondary effluent is not appropriate for power generating operations without additional treatment). The AWT will be built by the project and ultimately owned and operated by the City of Hayward. Cooling wastewater from the plant will subsequently be delivered to the WPCF for reuse.

Secondary effluent from the City's WPCF will be the primary water supply for RCEC following treatment in the AWT. The AWT will provide for six million gallons of on-site storage of recycled water. In the event of an extended outage at the Hayward WPCF that depletes this storage, the City of Hayward will provide water from the City's water supply. Water for fire protection, drinking and other domestic uses will be supplied from this same City of Hayward source. Pipelines will be constructed from the WPCF to the AWT and the plant under Enterprise Avenue along with wastewater return piping from the plant to the WPCF.

CONSTRUCTION AND OPERATION

Assuming timely completion of the AFC process, the Applicant expects construction to begin on the project in the spring of year 2003 and take approximately 18 to 21 months. Commercial operation of RCEC is expected to begin by the summer of year 2005. The construction force necessary for RCEC is expected to peak at 485 workers in month 15. Once the new units are on line, the operational Staff required is expected to be about 25 employees. The capital cost of the RCEC project is expected to be between $300 and $400 million.

FACILITY CLOSURE

The planned life of the RCEC facility is 30 years or longer. Whenever the facility is closed, either temporarily or permanently, the closure procedures will follow the described plan provided in the RCEC AFC, in applicable laws ordinances, regulations and standards, (LORS), and in the FSA discussions on facility closure and Conditions of Certification.

Project Description – Figure 1

[Source Exhibit 8, Fig. 1-2]

Project Description – Figure 2

[Source Exhibit 8, Fig. 2.2-1]

FINDINGS AND CONCLUSIONS

Based upon the evidence of record, the Commission finds as follows:

1. The project involves the construction and operation a 600-megawatt (MW) natural gas-fired combined cycle electrical generating facility in Hayward, California.
2. The project will also include a 0.9-mile natural gas pipeline, a 1.1-mile 230kV double-circuit transmission interconnection, an expansion of PG&E's existing Eastshore substation, and a new Advanced Wastewater Treatment plant.
3. The project is adequately described in Exhibit 8, sections 1-5, 7, and 10 introduced by Applicant and in the Final Staff Assessment (Ex. 1, pp. 3-1 to 3-3.)

We therefore conclude that the RCEC project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist Act and CEQA.

II. PROJECT ALTERNATIVES

SUMMARY OF THE EVIDENCE

The Energy Commission is required to examine the feasibility of available site and facility alternatives to the Applicant's proposal that substantially lessen the significant adverse impacts of the proposal on the environment. The Energy Commission must examine a reasonable range of feasible alternative sites that could substantially reduce or avoid any potentially significant adverse environmental impacts of the proposed project (Cal. Code Regs., tit. 14, §15126.6; Cal. Code Regs., tit. 20, §1765). This section identifies the potential significant impacts of the proposed project and analyzes alternative technologies and alternative sites that may reduce or avoid significant impacts. Alternatives were examined in response to information provided by Applicant (Ex.8, pp. 9-1 to 9-27.), by Staff (Ex. 1, pp. 6-1 to 6-8.), and by the staffs of other agencies.

Based on the Applicant's filings and its AFC, the Committee has determined the objectives of the RCEC to be:

- To generate economic, reliable, and environmentally sound electrical energy and capacity to the San Francisco Bay Area in the newly deregulated power market.
- To locate near centers of demand and key infrastructure, such as transmission line interconnections, supplies of process water (preferably wastewater), and natural gas at competitive prices.
- To serve the electrical power needs of the East Bay, San Francisco Peninsula, and City of San Francisco (Ex. 8, p. 9-1).

TECHNOLOGY ALTERNATIVES

Staff compared various alternative technologies, scaled to meet the project objectives, with the technology of the proposed project. Technologies examined were those principal electricity generation technologies that do not burn natural gas: solar, wind and biomass. Both solar and wind generation result in the absence or reduction in air pollutant emissions, visible plumes, and need for emissions control. Water consumption for both wind and solar generation is substantially less than for a natural gas-fired plant because there is no thermal cooling requirement (Ex. 1, pp. 6-3 to 6-4).

However, solar and wind resources would require large land areas in order to generate 600 megawatts of electricity. Specifically, central receiver solar thermal projects require approximately 5 acres per megawatt; therefore 600 megawatts would require approximately 3,000 acres, or over 200 times the amount of land area taken by the proposed plant site and linear facilities. Parabolic trough solar thermal technology requires similar acreage per megawatt. Wind generation "farms" generally require about 17 acres per megawatt, with 600 megawatts requiring 10,200 acres, approximately 690 times the amount of space taken by the proposed plant site and linear facilities (Ex. 1, p. 6-3). Additionally, solar and wind energy technologies cannot provide full-time availability due to the natural intermittent availability of the source.

Although air emissions are significantly reduced or eliminated for both wind and solar facilities, both can have significant visual effects. Wind facilities can also impact birds depending on the turbine technology (Ex. 1, p. 6-4).

For biomass generation, a fuel source such as wood chips (the preferred source) or agricultural waste is necessary. Neither is available in large quantities in the general area of the RCEC plant. Biomass facilities also generate substantially greater quantities of air pollutant emissions. In addition, biomass plants are

typically sized to generate less than 10 MW, which is substantially less than the capacity of the 600 MW RCEC project (Ex. 1, p. 6-4).

Because of the typically lower efficiencies and intermittent availability of alternative generation technologies, they do not fulfill a basic objective of this plant: to provide power from a baseload facility to meet the growing demands for reliable power in the San Francisco Bay Area. Consequently, the Staff witness testified that she does not believe geothermal, hydroelectric, solar, wind and biomass technologies present feasible alternatives to the proposed project (Ex. 1, p. 6-4; 6/20/02 RT 88.).

SITE ALTERNATIVES

In compliance with CEQA, Staff analyzed a reasonable range of alternatives to the proposed project. Staff examined five siting alternatives proposed by the Applicant: (Ex. 8, Section 9, Figure 9-1). The alternative sites are located in the general area of the proposed RCEC site and share some common attributes. Their locations are as follows:

- Cargill Salt Company, Central Avenue in Newark
- Western end of Stephenson Road in Fremont
- Boyce Road in Fremont
- Depot Road in Hayward
- West end of West Winton Avenue in Hayward

The Staff and Applicant each testified that none of the alternative sites is preferable in its development feasibility or environmental effects than the proposed project site. Project development at several of these sites is likely to cause a significant adverse impact due to the need to construct long linear appurtenances through sensitive wildlife habitat. None of the project impacts

which Staff has identified related to the RCEC would make the proposed site unacceptable. Therefore, no alternative sites could reduce significant impacts.

NO PROJECT ALTERNATIVE

CEQA Guidelines and Energy Commission regulations require consideration of the “no-project” alternative. This alternative assumes that the project is not constructed, and the impacts of that scenario are compared to those of the proposed project. A determination is made whether the “no project” alternative is superior, equivalent, or inferior to the proposed project from an environmental impact perspective.

The no-project alternative would forego all the benefits associated with the RCEC project. In addition, 600 megawatts of base load electrical capacity would not be added to the area's generation capacity, and regional electrical grid reliability would be lower. Furthermore, the no-project alternative would result in increased energy production from existing power plants that would most likely consume more fuel and emit more air pollutants per kilowatt-hour generated, according to the Applicant's analysis. (Ex. 1, p. 6-7; Ex. 8, Section 9.)

The Energy Commission has not identified any significant adverse impacts resulting from the proposed RCEC. However, the project does offer economic and electric benefits. If the project is not built, the region will not benefit from the relatively clean and efficient source of 600 MW of new generation that this facility would provide. The no-project alternative would eliminate the expected economic benefits that the proposed project would bring to Alameda County, including increased property taxes, employment, sales taxes, and sales of services, manufactured goods, and equipment (Ex. 1, p. 6-8). Therefore, the Energy Commission has determined that the proposed project is superior to the no-project alternative.

FINDINGS AND CONCLUSIONS

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

1. The project is proposed for location within the existing Industrial Corridor area of Hayward, a part of the community already dedicated to heavy industry.
2. The evidentiary record contains an adequate review of alternative technologies, fuels, and the no-project alternative.
3. No feasible technology alternatives such as geothermal, solar, or wind resources are located near the project or are capable of meeting project objectives.
4. The use of alternative generating technologies would not prove efficient, cost-effective or mitigate any significant environmental impacts to levels of insignificance.
5. No significant environmental impacts would be avoided under the no-project alternative.
6. The evidentiary record contains an adequate analysis of onsite equipment configurations and offsite alternative locations.

If all Conditions of Certification contained in this Decision are implemented, construction and operation of the RCEC, will not create any significant direct, indirect, or cumulative significant adverse environmental impacts.

Additionally, we conclude the potential adverse environmental impacts and potential cumulative impacts related to the project will be mitigated to levels of insignificance in conformance with all applicable laws, ordinances, regulations, and standards. We therefore conclude that the evidence of record contains sufficient analyses of alternatives to comply with the requirements of the Warren-Alquist Act and with CEQA.

III. COMPLIANCE AND CLOSURE

GENERAL CONDITIONS INCLUDING COMPLIANCE MONITORING AND CLOSURE PLAN

The project General Conditions Including Compliance Monitoring and Closure Plan (Compliance Plan) have been established as required by Public Resources Code section 25532. The plan provides a means for assuring that the facility is constructed, operated and closed in conjunction with air and water quality, public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the Energy Commission and specified in the written decision on the Application for Certification or otherwise required by law.

The Compliance Plan is composed of the following elements:

1. General conditions that:

    - set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
    - set forth the requirements for handling confidential records and maintaining the compliance record;
    - state procedures for settling disputes and making post-certification changes;
    - state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all Energy Commission approved conditions; and
    - establish requirements for facility closure plans.

2. Specific Conditions of Certification:

    - Specific Conditions of Certification that follow each technical area contain the measures required to mitigate any and all potential adverse project impacts associated with construction, operation and closure to an insignificant level. Each specific Condition of Certification also includes a verification provision that describes the method of verifying that the condition has been satisfied.

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

Post-certification moving of trailers and related equipment onto the site, usually accompanied by minor ground disturbance, grading for the trailers and limited vehicle parking, trenching for utilities, installing utilities, grading for an access corridor, and other related activities. Post-certification 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, following certification, 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, following certification, 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 of soil from one area to another.

CONSTRUCTION

[From section 25105 of the Warren-Alquist Act.] On-site 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.
e. Any work to provide access to the site for any of the purposes specified in a., b., c., or d.

START OF COMMERCIAL OPERATION

a. The project startup team has completed work.
b. The plant manager accepts control from the construction manager.
c. Expenses for the project are switched from construction to operation.
d. The facility has reached steady state with reliability at the rated capacity.
e. Financing accounting switches from construction (capital costs) to operations (income-producing expenses) financing.

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

A CPM will oversee the compliance monitoring and shall be responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities is in compliance with the terms and conditions of the 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, it should be understood that the approval would 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 or inadvertence 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 taken.

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.

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 records maintained on site, for the purpose of conducting audits, surveys, inspections, or general site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time.

COMPLIANCE RECORD

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

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

COMPLIANCE VERIFICATIONS

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

unlike the conditions, may be modified, as necessary by the CPM, and in most cases without full Energy Commission approval.

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. appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of mitigation and/or other evidence of mitigation.

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.

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
Russell City Energy Center Project (01-AFC-7)
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.

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.

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 <u>all</u> compliance conditions in a spreadsheet format. The compliance matrix must identify the technical area,

1. the condition number,
2. a brief description of the verification action or submittal required by the condition,
3. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.),
4. the expected or actual submittal date,
5. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable, and

6. the compliance status for each condition (e.g., “not started”, “in progress” or “completed date”).

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

PRE-CONSTRUCTION MATRIX

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. It will be in the same format as the compliance matrix referenced above.

TASKS PRIOR TO START OF CONSTRUCTION

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. Project owners frequently anticipate starting project construction as soon as the project is certified. In some cases it may be necessary for the project owner to file submittals prior to certification if the required lead-time for a required compliance event extends beyond the date anticipated for start of construction. It is also important that the project owner understand that pre-construction activities that are initiated prior to certification are performed at the owner’s own risk. Failure to allow specified lead-time may cause delays in start of construction.

Various lead times for verification submittals 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.

MONTHLY COMPLIANCE REPORT

The first Monthly Compliance Report is due the 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 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 five copies 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 (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
4. a list of conditions which 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; and

10. any requests to dispose of items that are required to be maintained in the project owner's compliance file.
11. a listing of complaints, notices of violation, official warnings, and citations received during the month; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

ANNUAL COMPLIANCE REPORT

After the air district has issued a Permit to Operate, 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, and
9. an evaluation of the on-site contingency plan for unexpected facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section].
10. a listing of complaints, notices of violation, official warnings, and citations received during the year; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

CONFIDENTIAL INFORMATION

Any information, which 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, which is determined to be confidential, shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq.

DEPARTMENT 0F 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 eight hundred and fifty dollars ($850). The payment instrument shall be provided to the Commission's Project Manager at the time of project certification and shall be made payable to the California Department of Fish and Game. The Commission's Project Manager will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

REPORTING OF COMPLAINTS, NOTICES AND CITATIONS

Prior to the start of construction, the project owner must send a letter to property owners living within 1,000 feet of the project site and 500 feet of the linear facilities notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering, with 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 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 www.energy.ca.gov/sitingcases.

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 on the following page.

COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: AFC Number:
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 a CEC 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:

(Attach additional pages and supporting documentation, as required.

FACILITY CLOSURE

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

PLANNED CLOSURE

Planned closure occurs at the end of a project's life, 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.

UNEXPECTED TEMPORARY CLOSURE

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 other emergency.

UNEXPECTED PERMANENT CLOSURE

Unplanned permanent closure occurs when the project owner closes the facility suddenly and/or unexpectedly on a permanent basis. This includes the scenario in which the owner remains accountable for implementing the on-site contingency plan as well as the scenario in which the project owner is unable to implement the contingency plan and the project is essentially abandoned.

GENERAL CONDITIONS FOR FACILITY CLOSURE
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 laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least twelve 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 all facilities or equipment that will a) be immediately removed from the site after closure (e.g., hazardous materials); b) <u>temporarily</u> remain on the site after closure (e.g., until the item is sold or scrapped): and c) <u>permanently</u> remain on site after closure. The plan must explain both why the item cannot be removed and why it does not present a risk of harm to the environment and the public health and safety to remain *insitus* for an indefinite period; and

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

Also, 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 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 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 Commission approval of the facility closure plan is obtained.

UNEXPECTED TEMPORARY CLOSURE

In order to ensure that public health and safety and the environment are protected in the event of an unexpected temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to mitigate public health and safety, 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, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

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

In addition, consistent with requirements under unexpected 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 unexpected temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., 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 a temporary closure is likely to be permanent, or for a duration of more than twelve months, a closure plan consistent with that 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).

UNEXPECTED PERMANENT CLOSURE

The on-site contingency plan required for unexpected temporary closure shall also cover unexpected permanent facility closure. All of the requirements specified for unexpected temporary closure shall also apply to unexpected 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 unexpected permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., 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 that for a planned closure shall be developed and submitted to the CPM within 90 days of the permanent closure (or other period of time agreed to by the CPM).

DELEGATE AGENCIES

To the extent permitted by law, the Energy Commission may delegate authority for compliance verification and enforcement to various state and local agencies that have expertise in subject areas where specific requirements have been established as a Condition of Certification.

If a delegate agency does not participate in this program, the Energy Commission staff will establish an alternative method of verification and enforcement. Energy Commission staff reserves the right to independently verify compliance.

In performing construction and operation monitoring of the project, the Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). The Commission staff retains this authority when delegating to a local CBO. Delegation of authority for compliance verification includes the authority for enforcing codes, the responsibility for code interpretation where required, and the authority to use discretion, as necessary, in implementing the various codes and standards.

Whenever an agency's responsibility for a particular area is transferred by law to another entity, all references to the original agency shall be interpreted to apply to the successor entity.

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 Commission Decision. The specific action and amount of any fines the Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, inadvertence, unforeseeable events, and other factors the Commission may consider.

Moreover, to ensure compliance with the terms and conditions of certification and applicable laws, ordinances, regulations, and standards, 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 current law or regulations.

INFORMAL DISPUTE RESOLUTION PROCEDURE

The following procedure is designed to informally resolve disputes concerning 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 the Energy Commission to conduct an informal investigation of alleged noncompliance with the Energy

Commission's terms and conditions of certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for 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 seven (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 forty-eight (48) hours, followed by a written report filed within seven (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 fourteen (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 agency 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 General 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 Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Title 20, California Code of Regulations, sections 1232 - 1236).

POST CERTIFICATION CHANGES TO THE 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, to 1) delete or change a Condition of Certification; 2) modify the project design or operational requirements; and 3) transfer ownership or operational control of the facility.

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 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

A proposed change will be processed as an amendment if it involves a change to the requirement or protocol (and in some cases the verification) portion of a Condition of Certification, an ownership or operator change, or a potential significant environmental impact.

INSIGNIFICANT PROJECT CHANGE

The proposed change will be processed as an insignificant project change if it does not require changing the language in a Condition of Certification, have a potential for significant environmental impact, or cause the project to violate laws, ordinances, regulations or standards.

VERIFICATION CHANGE

Pursuant to Title 20, California Code of Regulations, section 1770 (d), the staff may modify the verification provisions as necessary to enforce the conditions of certification without requesting an amendment to the decision.

This procedure can only be used to change verification requirements that are of an administrative nature, usually the timing of a required action. In the unlikely event that verification language contains technical requirements, the proposed change must be processed as an amendment.

KEY EVENT LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Rough Grading	
Start Construction	
First Combustion of Gas Turbine	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
SYNCHRONIZATION WITH GRID	
COMPLETE T/L CONSTRUCTION	
FUEL SUPPLY LINE ACTIVITIES	
Start Fuel Supply Line Construction	
COMPLETE FUEL SUPPLY LINE CONSTRUCTION	
WATER SUPPLY LINE ACTIVITIES	
START WATER SUPPLY LINE CONSTRUCTION	
COMPLETE WATER SUPPLY LINE CONSTRUCTION	

IV. ENGINEERING ASSESSMENT

A. FACILITY DESIGN

Facility Design encompasses the civil, structural, mechanical, and electrical engineering design of the project. The purpose of the Facility Design analysis is to verify that the LORS applicable to the design and construction of the project have been identified; verify that the project and ancillary facilities have been described in sufficient detail; determine whether special design features should be considered during final design to deal with conditions unique to the site; describe the design review and construction inspection process; and establish Conditions of Certification that will be used to monitor and ensure compliance with the intent of the LORS and any special design requirements.

SUMMARY OF THE EVIDENCE

Applicant's witness James Dunstan sponsored testimony that consisted of Exhibit 2—Facility Design, Power Plant Reliability, and Power Plant Efficiency. The witness reviewed the FSA (Ex. 1) and agreed with Staff's proposed Conditions of Certification. (6/20/02 RT 81; Ex. 2, p. 78.)

Staff testimony was sponsored by witnesses Shahab Khoshmashrab, Al McCuen, and Steve Baker. (6/20/02 RT 82; Ex. 1, pp. 5.1-1 to 5.1-21.) After reviewing Applicant's design proposals for the project's structural features, site preparation, major structures and equipment, mechanical systems, electrical designs and ancillary facilities, the Staff witnesses concluded that, with the Conditions of Certification, the project design will meet all LORS and will impose no significant impacts on the environment. (Ex. 1, pp. 5.1-5 to 5.1-6.)

FINDINGS AND CONCLUSIONS

Based upon the uncontroverted evidence of record, we find as follows (based on Conditions of Certification contained in Ex. 1, p. 5.1-5 to 5.1-6):

1. The LORS identified in the AFC and supporting documents are those applicable to the project.
2. The Energy Commission has evaluated the AFC, and the project engineering LORS and design criteria in the record, and concludes that the design, construction, and eventual closure of the project is likely to comply with applicable engineering LORS.
3. The Conditions of Certification proposed will ensure that the proposed facilities are designed, constructed, operated, and eventually closed in accordance with applicable LORS. This will occur through the use of design review, plan checking and field inspections, which are to be performed by the local Chief Building Official (CBO) or other Energy Commission delegate agent. Energy Commission Staff will audit the CBO to ensure satisfactory performance.
4. The Energy Commission design review and construction inspection process will be in place for the project and will allow construction to start as scheduled if the project is certified. The process will provide the necessary reviews to ensure compliance with applicable facility design LORS and Conditions of Certification.
5. If the project owner submits a decommissioning plan required in the **GENERAL CONDITIONS** portion of this document prior to the commencement of decommissioning, the decommissioning procedure is likely to result in satisfactory decommissioning performance.
6. 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 set forth in the appropriate portion of Appendix A of this Decision.
6. The Conditions of Certification set forth herein will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable engineering LORS.
7. The Facility Design aspects of the proposed project do not create significant potential cumulative impacts.
8. 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, or the unexpected temporary, or the unexpected permanent closure of the facility.

We therefore conclude that with the implementation of the Conditions of Certification listed below, the RCEC project is likely to be designed and constructed in conformity with applicable laws pertinent to its geologic, and 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 1998 California Building Code (CBC) and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval. (The CBC 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 design, construct and inspect the Advanced Water Treatment Unit in accordance with the 1998 CBC and the Dames & Moore (1995) report as a minimum standard for seismic design of City owned utility structures. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

> Protocol: In the event that the initial engineering designs are submitted to the CBO when a successor to the 1998 CBC is in effect, the 1998 CBC 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.

Verification: Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the California Energy Commission 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 engineering 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 [1998 CBC, Section 109 – Certificate of Occupancy].

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 a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO 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 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
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
HRSG Stack Foundation and Connections	2
HRSG Stack	2
CT Main Transformer Foundation and Connections	2
ST Main Transformer Foundation and Connections	1
Ammonia Storage Tank Foundation and Connections	1
Switchgear Building Structure, Foundation and Connections	1
Air Compressor Skid Foundation and Connections	1
Cooling Tower Foundation and Connections	1
CT Air Inlet Filter Foundation and Connections	2
Circulating Water Pumps Foundation and Connections	2
Demineralized Water Storage Tank Foundation and Connections	2
Surface Condenser Structure, Foundation and Connections	1
Warehouse/Maintenance Shop Structure, Foundation and Connections	1

Equipment/System	Quantity (Plant)
Administration Building W/Control Room Structure, Foundation and Connections	1
Water Treatment Building/Laboratory Structure, Foundation and Connections	1
Gas Metering Area Structure, Foundation and Connections	1
Pumphouse Building Structure, Foundation and Connections	1
Boiler Feedwater Pump/Chemical Feed Building Structure, Foundation and Connections	1
Boiler Feedwater Pump Building Structure, Foundation and Connections	1
Emergency Generator Foundation and Connections	1
Fire Water Pump Building Structure, Foundation and Connections	1
Rotor Air Cooler Foundation and Connections	2
Switchyard Control Room Structure, Foundation and Connections	1
Unit Auxiliary Transformer Foundation and Connections	2
Gas Scrubber/Heater Station Structure, Foundation and Connections	1
Closed Cycle Cooling Water Heat Exchanger Foundation and Connections	2
Closed Cycle Cooling Water Pump Foundation and Connections	2
Chlorination Skid Foundation and Connections	1
Advanced Wastewater Treatment Plant Structure, Foundation and Connections	1
Final Product Storage Tank Foundation and Connections	2
Condensate Pumps Foundation and Connections	3
Demineralized – RO Systems Foundation and Connections	3
Natural Gas Compressors Foundation and Connections	2
Switchyard, Buses, and Towers	1 Lot
Potable Water Systems	1 Lot
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure Piping	1 Lot
HVAC and Refrigeration Systems	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 1998 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.

Protocol: 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 a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the name, qualifications 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 name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

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; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 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.

Protocol: 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 [1998 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.

Protocol: (A) The civil engineer shall:

1. 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
2. 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.

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

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

2. Prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, section 3317, Grading Inspections;
4. Recommend field changes to the civil engineer and RE;
5. Review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load; and
6. Prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18 section 1804, Foundation Investigations.

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 [1998 CBC, section 104.2.4, Stop orders].

Protocol: (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.

Protocol: (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.

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

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

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 1998 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.

Protocol: 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; 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.
5. 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 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 The project owner shall keep the CBO informed regarding the status of engineering and construction. If any discrepancy in design and/or construction is discovered in any work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required. 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. When the work and the "as-built" and "as graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings [1998 CBC, Section 108, Inspections]. The project owner shall retain one set of approved engineering plans, specifications and calculations at the project site or at another accessible location during the operating life of the project [1998 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 Prior to the start of site grading, 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 as required by the 1998 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report and Section 3309.6, Engineering Geology Report].

Verification: At least 15 days prior to the start of site grading (or a lesser number of days mutually agreed to by the project owner and the CBO), 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 earthworks and construction in the affected areas when the responsible geotechnical engineer or 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 [1998 CBC, Section 104.2.4, Stop orders].

Verification: The project owner shall notify the CPM, within five days, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within five days 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 1998 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.

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

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. 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 facilities, the project owner shall obtain the CBO's approval of the final "as-graded" grading plans, and final "as-built" plans for the erosion and sedimentation control facilities [1998 CBC, Section 109, Certificate of Occupancy].

Verification: Within 30 days of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO 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. The project owner shall submit a copy of this report 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 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
5. Switchyard structures.

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.

Protocol: 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 [1998 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 at least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2, Retention of plans and Section 106.3.2, Submittal documents]; and

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 [1998 CBC, Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of construction of any structure or component listed in Table 1 of Condition of Certification GEN-2, above the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission's Decision.

If the CBO discovers non-conformance with the stated requirements, the project owner shall resubmit the corrected plans to the CBO within 20 days of

receipt of the nonconforming submittal with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and are in conformance 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. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 1998 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 to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, 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 1998 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 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 1998 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of 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 Prior to the start of any increment of major piping or plumbing construction, 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 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 [1998 CBC, Section 106.3.2, Submittal Documents, Section 108.3, Inspection Requests, Section 108.4, Approval Required; 1998 California Plumbing Code, Section 103.5.4, Inspection Request, Section 301.1.1, Approval].

Protocol: 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 (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);
- Specific City/County code.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [1998 CBC, Section 104.2.2, Deputies].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of major piping or plumbing construction listed in 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 [1998 CBC, Section 108.3 – Inspection Requests].

Protocol: 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 a lesser number of days mutually agreed to by the project owner and the CBO) 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 Prior to the start of construction of any heating, ventilating, air conditioning (HVAC) or refrigeration system, the project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations and quality control procedures for that system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

Protocol: 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 [1998 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of 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 1998, 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 [1998 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.

Protocol: (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.

Protocol: (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.

Protocol: (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 a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

B. POWER PLANT EFFICIENCY

The Energy Commission makes findings as to whether energy use by the RCEC will result in significant adverse impacts on the environment, as defined in CEQA. If the Commission finds that the RCEC consumption of energy creates a significant adverse impact, it must determine whether there are any feasible mitigation measures that could eliminate or minimize the impacts. In this analysis, we address the issue of inefficient and unnecessary consumption of energy.

SUMMARY OF EVIDENCE

Applicant's witness James Dunstan sponsored testimony that consisted of Exhibit 2—Facility Design, Power Plant Reliability, and Power Plant Efficiency and Chapters 2 and 10 of the AFC (6/20/02 RT 84; Ex. 8).

Staff witness Shahab Khoshmashrab, sponsoring Section 5.3 of the FSA (Ex. 1, pp. 5.3-1 to 5.3-7.), testified that under expected project conditions, electricity will be generated at a full-load efficiency of approximately 55.3 percent lower heating value (LHV), compared to the average fuel efficiency of a typical utility company baseload power plant at approximately 35 percent LHV. (Ex. 1, p. 5.3-2.)

Applicant addressed the efficiency of alternative generating technologies in the AFC (Ex. 8, Section 3.11.3.2). Conventional boiler and steam turbine, simple-cycle combustion turbine, conventional combined-cycle, Kalina combined-cycle, advanced combustion turbines, natural gas, coal, oil, solar, wind, hydroelectric, biomass, and geothermal technologies are all considered. One of the project's stated objectives is to generate efficient energy near the center of demand (Ex. 8, Section 9.1). Given the project objectives, location, and air pollution control requirements, Staff agrees with the Applicant that only natural gas-burning technologies are feasible. (Ex. 1, p. 5.3-5.)

Staff further testified that no cumulative impacts on energy resources are likely. Closure of the facility will not present significant impacts on electric system efficiency. (Ex. 1, p. 5.3-6.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Energy Commission makes the following findings (Based on conclusions noted on p. 5.3-7 of Ex. 1):

1. The RCEC project will not create significant adverse effects on energy supplies or resources in California.
2. The project will not require additional sources of energy supply.
3. The project will not consume energy in a wasteful or inefficient manner.
4. The project will have no significant adverse impacts on energy resources.
5. Given the project objectives, location and air pollution control requirements, the evidence is undisputed that only natural gas-burning technologies are feasible.
6. The RCEC project will consist of two Siemens Westinghouse 501FD Phase 2 combustion turbine generators with inlet air fogging systems and steam injection producing approximately 200 MW each, two multi-pressure heat recovery steam generators (HRSGs) with duct burners, and one single 3-pressure, reheat, condensing steam turbine generator producing a maximum of 235 MW, arranged in a two-on-one combined cycle train, totaling approximately 600 MW. The gas turbines and HRSGs will be equipped with dry low-NOx combustors and SCR to control air emissions.

We therefore conclude that the Russell City Energy Center project will not cause any significant adverse impacts to energy supplies or energy resources. The project will conform with all applicable laws, ordinances, regulations, and standards (LORS) related to power plant efficiency. (Ex. 1, p. 5.3-7.)

No Conditions of Certification are proposed concerning the topic of Power Plant Efficiency. (Ex. 1, p. 5.3-7.)

C. POWER PLANT RELIABILITY

This analysis, addresses the reliability issues of the project to determine if the power plant is likely to be built in accordance with typical industry norms for reliability of power generation. This level of reliability is useful as a benchmark because the resulting project would likely not degrade the overall reliability of the electric system it serves.

SUMMARY OF EVIDENCE

Applicant's witness James Dunstan sponsored testimony, which consisted of Exhibit 2, Facility Design, Power Plant Reliability, and Power Plant Efficiency and Section 10 of the AFC (6/20/02 RT 85; Ex. 8).

Staff witness Shahab Khoshmashrab, sponsoring Section 5.4 of the FSA (Ex. 1), testified the RCEC project will be built and operated in a manner consistent with industry norms for reliable operation, and that Applicant's predicted equivalent availability factor in the 92 to 98 percent range is achievable in light of the industry norm of 91.5 percent for this type of plant. (6/20/02 RT 85; Ex. 1, p. 5.4-6.)

FINDINGS AND CONCLUSIONS

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

1. The RCEC project will ensure equipment availability by implementing quality assurance/quality control programs during design, procurement, construction, and operation of the plant and by providing for adequate maintenance and repair of the equipment and systems. (Ex. 1, p. 5.4-3.)
2. There is adequate fuel and water availability and capacity for project operations. (Ex. 1, p. 5.4-4.)

3. In light of the historical performance of California power plants and the electrical system in seismic events, there is no special concern with power plant functional reliability affecting the electric system's reliability due to seismic events. (Ex. 1, p. 5.4-5.)
4. The project's estimated 92-98 percent availability factor is consistent with, or exceeds industry norms for power plant reliability. (Ex. 1, p. 5.4-5.)

The Energy Commission, therefore, concludes that the project will not have an adverse effect on system reliability. No Conditions of Certification are required for this topic. (Ex. 1, p. 5.4-6.)

D. TRANSMISSION SYSTEM ENGINEERING

The Warren-Alquist Act requires the Energy Commission to "prepare a written decision that includes:

> (a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety, [and]
>
> (d)(1) Findings regarding the conformity of the proposed site and related facilities…with public safety standards…and with other relevant local, regional, state and federal standards, ordinances, or laws…"(Pub. Resources Code, § 25523).

Under California's 1996 electricity industry deregulation legislation, Southern California Edison, Pacific Gas and Electric Company (PG&E), and San Diego Gas and Electric Company divested most of their power plants, but retained ownership their electric transmission system, under the operating control of the Cal-ISO. Cal-ISO is responsible for ensuring electric system reliability for all participating transmission owning utilities and determines both the standards necessary to achieve reliability and whether a proposed project conforms to those standards. The Energy Commission will rely heavily on the Cal-ISO's determinations to make its finding related to applicable reliability standards, the need for additional transmission facilities, and environmental review of the whole of the project.

SUMMARY OF THE EVIDENCE

Applicant's witnesses Daniel H. Wood and Amanali Amirali testified that with the implementation of the proposed Conditions of Certification in the FSA, potential impacts on the transmission system and the environment, if any, will be mitigated to a level of insignificance. (Ex. 2, Section III, Transmission System Engineering;

RT 293-298.) The Applicant's witnesses, furthermore, described local system benefits that would result from the RCEC. These benefits include providing voltage support and a reduction in power losses to the San Francisco Bay area transmission system. (RT 296-300). They supported this testimony by sponsoring Section 6 and Appendix 6 of the AFC (Ex. 8). Staff Witness Jack Caswell sponsored Section 5.5 and TSE Appendix A of the FSA (Ex. 1; RT 300.).

The RCEC will consist of two combustion turbine generators (CTG), each with an output of approximately 190 megavolt-ampere (MVA) and one steam turbine generators (STG), with a maximum nominal output of 255 MVA, for a total maximum plant net output of 620 MW. Each of the generating units will be connected to a dedicated 15/18/230 kV step-up transformer and the high-voltage terminals of each transformer will be connected to the new RCEC 230-kV switchyard by overhead conductors. (Ex. 1, pp. 5.5-3 to 5.5-4.)

The new RCEC 230-kV switchyard is proposed for a configuration of five-breaker 3000-ampere ring bus arrangement with five switch bays. Each breaker will have a 63-kiloampere (kA) interrupting capacity. High voltage terminals of each generating unit transformer will be connected by overhead conductors to a switch bay. The remaining two switch bays will used for the new double circuit 230-kV overhead interconnection lines to the East Shore 230 kV Substation. The Applicant will build, own and operate the switchyard. (Ex. 1, p. 5.5-4.)

The new RCEC 230-kV switchyard is proposed to be interconnected to the East Shore Substation by building a new about 5480 feet long double circuit 230-kV transmission line, each line or circuit with 2x1113 KCM AAC (All Aluminum Conductor). The line is proposed to be built by the Applicant on tubular steel poles in the available right of way running adjacent and parallel to the East Shore-Grant 115-kV line. To accommodate terminations of the two interconnecting lines at the East Shore 230 kV Substation and insure reliability of the network, the existing three-breaker single bus will be converted to a two-bus (main and transfer buses) arrangement. The proposed modifications to be done

by PG&E in the East Shore Substation will consist of four switch bays, each bay with breaker and a half arrangement and with two outlets, for a total of twelve breakers. The existing Pittsburg-San Mateo 230-kV line #2 that now passes by the Substation will also be looped in and out the Substation. As a result, there would be two East Shore-RCEC 230-kV lines, two East Shore-San Mateo 230-kV lines and two East Shore-Pittsburg 230-kV lines terminating at the East Shore Substation. Two 230/115-kV transformers for 115-kV circuit lines will also remain connected to the Substation. (Ex. 1, p. 5.5-4.)

A System Impact Study (SIS) was performed by PG&E, the transmission owner, for the proposed project. Based on the SIS results, the Cal-ISO has provided preliminary interconnection approval to the RCEC project. (Ex. 1, p. 5.5-5; RT 305.) The Cal-ISO has also provided written testimony to the Energy Commission as required on the SIS. Upon satisfactory completion of the Facilities Study, the Cal-ISO is prepared to grant final approval for interconnection of the project to the Cal-ISO grid. However, Mr. Johan Galleberg of the Cal-ISO testified that the ISO has not yet determined whether or not the Eastshore to San Mateo 230-kV transmission line will need reconductoring. The Cal-ISO will make its final determination on this matter after reviewing facility studies to be carried out by PG&E. (*Id.*) The Cal-ISO final Interconnection approval will assure conformance with the National Electric Reliability Council (NERC), Western System Coordinating Council (WSCC), and Cal-ISO reliability criteria. (Ex. 1, 5.5-5.)

In addition, the Staff has testified that the proposed RCEC switchyard and interconnection facilities will be connected to the electric grid by building a new double circuit 230-kV line to the East Shore Substation, which Staff has determined will be adequate and reliable. The Applicant will design and build these facilities. The required modifications at the East Shore Substation for terminations of the interconnecting facilities and other work will be designed, built, owned and operated by PG&E. Staff considers these facilities acceptable.

With implementation of the Conditions of Certifications recommended by Staff, these facilities will comply with LORS. (Ex. 1, p. 5.5-11.)

Finally, we note that Staff has prepared an appendix to the Transmission System Engineering section of the FSA for the RCEC project in order to examine the potential indirect impacts of the project associated with possible future reconductoring of transmission lines, (Ex. 1, Appendix A). The Applicant and Staff disagree concerning whether reconductoring will be necessary or whether it is reasonably foreseeable. Because of this difference of opinion, and recognizing the requirement under CEQA to examine foreseeable subsequent projects that result from the project, Staff has analyzed the potential impacts of reconductoring as it may pertain to the RCEC.

As Staff correctly observes, reconductoring, if required, will be a separate project before a different agency. The actual need for reconductoring will be finally determined by the Cal-ISO after PG&E has completed the Final Design Study or Cost Study for the Generator Facility Interconnection Agreement for the RCEC Center project. (RT 305.) The purpose of the Staff's reconductoring analysis is to inform the Energy Commission, interested parties and the general public of the potential indirect environmental and public health effects caused by the approval of the RCEC project. (Ex. 1, Appendix A, p. 8-1.)

The transmission line reconductoring analysis examined the nature and scope of the probable environmental impacts of reconductoring, should it occur, and measures for mitigating these impacts to a less-than-significant level. The analysis is based upon information supplied by the Applicant, as well as on information gathered from PG&E and other sources. This analysis describes the process of reconductoring and the types of environmental impacts that might occur as a result of reconductoring. It also discusses specific aspects of the reconductoring project that Staff has determined would likely occur as a result of approval of the project, such as its location and some likely places for pull and tensioning sites, and staging yards. The analysis concludes that if

reconductoring complies with all applicable LORS and applies appropriate mitigation, the potential impacts are likely to be insignificant. (Ex. 1, Appendix A, pp. 8-25 to 8-27.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find and conclude as follows:

1. PG&E has performed a Simplified System Impact/ Facilities Study to analyze any potential reliability and congestion impacts that could occur when RCEC interconnects to the grid.
2. The Cal-ISO has provided preliminary interconnection approval to the RCEC project.
3. Staff has prepared an analysis, which determined that any potential indirect environmental impacts of the project associated with possible future reconductoring of 230-kV transmission lines between the East Shore and San Mateo Substations would not be significant. (Ex. 1, Appendix A)
3. The final determinations of the Cal-ISO regarding the interconnection of the project to the transmission system, will be based on its review of the Preliminary Facilities Study, the Simplified System Impact/Facilities Study and other referenced analysis performed by the Cal-ISO and by PG&E.
4. The analysis contained in Cal-ISO and the Staff testimony of record establishes that the proposed RCEC switchyard and related facilities for interconnection to the PG&E electric grid by building a new double circuit 230-kV line to the East Shore Substation will be adequate and reliable.

We therefore conclude that with the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnect for the project will not contribute to significant direct, indirect, or cumulative environmental impacts. The Conditions of Certification below ensure that the transmission related aspects of the RCEC will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portions of **Appendix A** of this Decision.

We further conclude that interconnection of the project at PG&E's East Shore Substation is acceptable, and that it will not result in the violation of any criteria pertinent to transmission engineering.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall furnish to the CPM and to the CBO a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission Staff, the project owner shall provide designated packages to the CPM when requested.

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

Table 1: Major Equipment List
Breakers
Step-up transformer
Switchyard
Busses
Surge Arrestors
Disconnects
Take off facilities
Electrical Control Building
Switchyard control building
Transmission Pole/Tower

.

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient

in the design of power plant structures and equipment supports; or D) a mechanical engineer (Business and Professions Code Sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California).

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

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

The electrical engineer shall:

1. Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

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

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

TSE-3 The project owner shall keep the CBO informed regarding the status of engineering design and construction. If any discrepancy in design and/or

construction is discovered, the project owner shall document the discrepancy and recommend the corrective action required. The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification.

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM to be included in response to **TSE-3**. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy 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.

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

a) Receipt or delay of major electrical equipment;

b) Testing or energizing major electrical equipment; and

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

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

TSE-5 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The substitution of Compliance project Manager (CPM) and CBO approved "equivalent" equipment and equivalent Substation configurations is acceptable. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 and 128 (GO 128) 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 Safety Code (NEC) and related industry standards.

b) Breakers and busses in the power plan switchyard and other switchyards, where applicable, shall be sized to comply with a short circuit analysis.

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

d) Termination facilities shall comply with applicable PG&E interconnection standards.

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

f) The project owner shall provide:

1. The final Detailed Facility Study (DFS) or Facility Cost Report including a description of facility upgrades, operational mitigation measures, and/or Remedial Action Scheme (RAS) and/or Special Protection System (SPS) sequencing and timing if applicable,
2. Executed Facility Interconnection Agreement,
3. Verification of Cal-ISO Notice of Synchronization,
4. A letter stating that the mitigation measures or projects selected by PG&E for each criteria violation are acceptable.

Verification: At least 60 days prior to the start of construction of transmission facilities, the project owner shall submit to the CBO for approval:

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

b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[6] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative

[6] Worst case conditions for the foundations would include for instance, a dead-end or angle pole.

verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards.

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

d) The Facilities Study and signed letter from the Applicant stating that mitigation is acceptable shall be provided concurrently to the CPM and CBO. Substitution of equipment and Substation configurations shall be identified and justified by the project owner for CBO approval.

TSE-6 The project owner shall inform the CPM and CBO of any impending changes, which may not conform to the requirements **TSE-5** a) through f), and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or Substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

Verification: At least 60 days prior to the construction of transmission facilities, the project owner shall inform the CBO and the CPM of any impending changes that may not conform to requirements of **TSE-5,** and request approval to implement such changes.

TSE-7 The Applicant 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 (1) 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 (1) business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 to 1530 at (916)-351-2300.

Verification: The Applicant shall provide copies of the Cal-ISO letter to the CPM when it is sent to the Cal-ISO one (1) week prior to initial synchronization with the grid. A report of conversation with the Cal-ISO shall be provided electronically to the CPM one (1) day before synchronizing the facility with the California transmission system for the first time.

TSE-8 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders" and applicable interconnection standards, NEC, and related industry standards, and these conditions shall be provided concurrently.

b) An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan".

A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.

E. TRANSMISSION LINE SAFETY AND NUISANCE

The project transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This analysis reviews the potential impacts of the project transmission line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electric and magnetic field exposure.

SUMMARY OF THE EVIDENCE

The electricity from the RCEC will be delivered to the PG&E power grid through a new 1.1-mile, overhead 230-KV transmission line extending from the project's on-site switchyard to PG&E's East Shore Substation to the southeast. This connecting line will be a double-circuit 230-kV transmission line to be designed and built according to PG&E practices reflecting compliance with applicable LORS. (Ex. 8, pages 6-24 and 6-47 through 6-50.)

As discussed by the Applicant (Ex. 8, pages 2-1, 6-1, 6-2, 8.6-7, 8.6-13 and 8.9-1), the site and the route of the project's transmission line are within the city's Industrial Corridor with relatively few residences within one-mile radius of the project's property lines. The nearest residences are approximately 0.82 miles away on Industrial Boulevard, meaning that the residential power line field exposure at the root of the present health concern would be relatively insignificant for this project. The only exposure of potential significance would be to workers in facilities and businesses in the project area.

The AFC concluded that there would be no significant impacts to public safety due to the project transmission line (Ex. 8, Section 6.4). Staff's witness Obed Odoemelam has agreed with this determination (Ex. 1, Section 4.10; RT 66.). According to information from the Applicant (Ex. 8, pages 6-1, 6-2, and 6.5), the

proposed site was chosen in part for its proximity to existing area 115-kV and 230-kV line corridors, which the project's line will share on its way for connection to the Eastshore Substation. Such corridor sharing is in keeping with present state policy of on transmission line routing. In the proposed routing scheme, the line will exit from the project's switchyard and extend northeast for the relatively short (600-foot) distance (within its own 100-foot right of way) until it intersects with the right-of-way of the existing 115-kV Eastshore-Grant line, which it will then share for a distance of 4500 feet. At the end of this shared corridor, the line would exit and travel 500 feet to the northeast for connection to the East Shore Substation, which will be modified to accommodate its entry. This last (500-foot) segment will utilize the existing corridor for two 230-kV San Mateo-Contra Costa (East Shore) lines.

Aviation Hazard

The nearest airport to the project site is the Hayward Executive Airport approximately 0.69 miles to the northeast. Despite this relative closeness, the north-to-northeast orientation of the airport's runway would place the project and its transmission line (with a maximum height of 115 feet) away from the area of potential collision hazard to utilizing aircraft. Furthermore, most of the line will be located within the rights-of-way of existing PG&E lines that do not pose such a hazard. At approximately 2.76 miles to the southeast, the St. Rose Hospital Heliport is located too far away from the project and its transmission line for them to pose an aviation hazard to the utilized helicopters (Ex. 1, p. 4.10-4 and 4.10-5).

Audible Noise and Radio Frequency Interference

The proposed transmission line will be designed built, and maintained to minimize the features responsible for line-related audible noise and interference with radio or television reception electric around the right-of-way it will occupy alone and the ones it will share with existing PG&E lines. The potential for such

electric field-related impacts (and related complaints) is further minimized by the general lack of residences in the line's field impact area. FCC regulations require the Applicant to mitigate all interference-related complaints for which Staff recommends a specific condition of certification (TLSN-2) in the unlikely event of occurrence (Ex. 1, p. 4.10-5).

Fire Hazard

The Applicant intends to comply with the GO-95 requirements (Ex. 8, page 6-47), which will ensure that the proposed line is adequately located away from trees and other combustible objets to prevent contact-related fires or minimize such fires when they occur. The potential for such fires is further minimized by the general absence of trees, brush or other large combustible objects within the line's route of mostly industrial uses. Staff recommends two conditions of certification (TLSN-1 and TLSN-4) to ensure implementation of the necessary preventive measures (Ex. 2, p. 4.10-5).

Shock Hazards

The Applicant intends to comply with the requirements of applicable regulations and standards intended to prevent hazardous or nuisance shocks to workers or the general public (Ex. 8, pp. 6-45 and 6-46). Staff's recommended conditions of certification, TLSN-1 and TLSN-2 address such compliance (Ex. 2, p. 4.10-5).

Electric and Magnetic Exposure

The Applicant has presented the details of their field reducing design and operational plan for staff-required compliance with CPUC requirements (Ex. 8, pages 6-32 through 6-45). This plan includes specific measures to (a) decrease the spacing between conductors thereby ensuring maximum field cancellation, (b) measures to minimize line current thereby reducing field strength and (c)

measure to utilize current flow patterns for maximum field cancellation. Staff finds this plan to be acceptable (Ex. 2, p 4.10-5).

To verify the effectiveness of these field-reducing measures, the Applicant (Ex. 8, pages 6-32 through 6-44, and Appendix 6-M) presented exposure estimates that reflect the contribution of the project's line to the area's operational phase field exposures. These estimates were provided for the line's magnetic fields since magnetic fields are at the root of the present health concern over electric and magnetic field (EMF) exposure. Staff established from such estimates that the additional power from the proposed project would increase magnetic field levels (in the middle of the right-of-way) from a maximum of 55.54 milli gauss (mG) to a maximum of 83.8 mG. The increase at the edge of the right-of-way would be from a maximum of 32 mG to a maximum of 7.36 mG. These field strengths reflect the interactive effects of fields from the proposed line and the lines in its proposed rights-of-way. In the locations of maximum field cancellations, the project-related power addition would decrease the magnetic fields levels from 13.82 mG to 10.28 mG at the edge of the right-of-way. These field strength estimates are much lower than established by the few states with specific regulatory limits and reflect the effectiveness of the Applicant's intended measures. Staff's recommended Condition of Certification (TLSN-3) is intended to verify achievement of the field strength reduction assumed by the applicant (Ex. 8, p. 4.10-6).

FINDINGS AND CONCLUSIONS

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

1. The project transmission line, which will connect to PG&E's transmission system, is an overhead 230-kV line that traverses industrial areas.
2. RCEC's transmission line will be designed in accordance with the electric and magnetic field reducing guidelines applicable to PG&E's transmission service area.

3. The site and the route of the project's transmission line are within the city's Industrial Corridor with relatively few residences within one-mile radius of the project's property lines.
4. The estimated EMF exposures from the transmission line are significantly below field levels established by states with regulatory limits for such fields.
5. The Conditions of Certification reasonably ensure that the transmission line will not have significant adverse environmental impacts on public health and safety nor cause impacts in the areas of aviation safety, radio/tv communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

The Energy Commission, therefore, concludes 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 portions of APPENDIX A of this Decision.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of CPUC's GO-95, GO-52, applicable sections of Title 8, Section 2700 et seq. of the California Code of Regulations and PG&E's EMF-reduction guidelines arising from CPUC Decision 93-11-013.

Verification: Thirty days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the CPM a letter signed by a California registered electrical engineer affirming compliance with this requirement.

TLSN-2 The project owner shall ensure that every reasonable effort will be made during project operations to identify and correct, on a case-specific basis, any complaints of interference with radio or television reception or the functioning of any electrical devices or equipment.

Verification: The project owner shall maintain written records for a period of five years, of all complaints of all such complaints together with the corrective action taken in response to each complaint. Complaints not leading to a specific action, or for which there was no resolution, should be noted and explained. The project owner and also the complainant if possible shall sign the record, to indicate concurrence with the corrective action or agreement, with the justification for a lack of action.

All reports of line-related complaints shall be summarized for the project-related lines and included during the first five years of plant operation in the Annual Compliance Report.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields from the line before and after they are energized. Measurements should be made at representative points along the edge of the right-of-way for which field strength estimates were provided.

Verification: The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements.

TLSN-4 The project owner shall ensure that the right-of-way of the project-related lines are kept free of combustible material, as required under the provisions of Section 4292 of the Public Resources Code and Section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards.

Verification: At least 30 days before the line is energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

V. PUBLIC HEALTH AND SAFETY ASSESSMENT

A. AIR QUALITY

In this section we evaluate the expected air quality impacts from the emissions of criteria air pollutants due to construction and operation of the RCEC. Criteria air pollutants are those for which a federal or state ambient air quality standard has been established to protect public health. They include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), precursor organic compounds (POC), and particulate matter less than 10 microns in diameter (PM_{10}).

SUMMARY OF THE EVIDENCE

Applicant's witness Gregory S. Darvin sponsored his testimony (Ex. 2, pp. 4-10), section 8.1 of the AFC (Ex. 8) and the PM_{10} Mitigation Program Supplement. (Ex. 13; RT 151-162.). Mr. Darvin's testimony demonstrated that potential air quality impacts are expected to be well below all applicable state and federal standards for all pollutants except PM_{10}. (Ex. 2, p. 6.)

Mr. Darvin testified that the operational air quality impacts would be mitigated by using the most effective emission control technologies available and by purchasing Emission Reduction Credits (ERC) that will offset or compensate for the projects emissions. The RCEC was designed with the following emission control technologies:

- Dry Low NO_X combustors and a selective catalytic reduction (SCR) system to control the NO_X emissions to 2.5 parts per million dry volume corrected to 15 percent oxygen parts per million volume, dry, corrected (ppmvdc) averaged over one hour.
- The use of clean burning natural gas and good combustion design to control CO and volatile organic compounds (VOC) emissions to 4.0 and 1.0 ppmvdc.

- The use of low sulfur, clean burning natural gas to control SO_2 emissions to 1.0 ppmvdc.
- The use of clean burning natural gas and inlet air filtration to control PM_{10} emissions to 9.0 pounds per hour when there is no duct burning, and 12.0 pounds per hour during hours of duct burning. (Ex. 2, p. 9.)

Mr. Darvin further testified that the Applicant would mitigate the air quality impacts by purchasing ERCs. The RCEC will also provide emission reductions sufficient to mitigate the project PM_{10} emissions of 172,600 pounds per year from October to March. Applicant is working with the Staff of the Bay Area Air Quality Management District to fund the District's new wood stove and fireplace retrofit/replacement program. Under the proposed retrofit/replacement program, financial incentives will be provided to encourage residents of the City of Hayward, and surrounding areas, to replace existing wood stoves with gas stoves or to retrofit existing wood-burning fireplaces to gas fireplaces. The Applicant will provide the BAAQMD with a grant on the order of $949,000 in order to fund this program. This plan is similar to the one proposed for Applicant's Los Esteros Critical Energy Facility. The proposed mitigation package will provide reductions in emissions of directly emitted PM_{10}, PM_{10} precursors, and other pollutants that will mitigate both the ambient air quality and the public health impacts of the PM_{10} emissions from the RCEC project. (Ex. 2, p. 10)

As a result of this review, Mr. Darvin believes that with the Conditions of Certification recommended by the BAAQMD and the Staff, the project construction and operation will not result in any significant adverse air quality impacts.

The District completed a Final Determination of Compliance (FDOC) on March 11, 2002 and found the project to be in compliance with all District rules and regulations. (Ex. 6; RT 179-180.) The District-recommended Conditions are presented here as Conditions AQ-1 through AQ-56.

The Staff also conducted an independent analysis of the project's potential air quality impacts. This analysis is set forth in Exhibit 1, Section 4.1. (RT 163-179.) Staff evaluated the following major points:

- Whether the project complies with applicable Federal, State and Bay Area Air Quality Management District air quality laws, ordinances, regulations and standards, as required by Title 20, California Code of Regulations, section 1742.5 (b);
- Whether the project is likely to cause significant air quality impacts, including new violations of ambient air quality standards or contributions to existing violations of those standards, as required by Title 20, California Code of Regulations, section 1742 (b); and
- Whether the mitigation proposed for the project is adequate to lessen the potential impacts to a level of insignificance, as required by Title 20, California Code of Regulations, section 1744 (b).

Staff analysis included modeling for direct and indirect impacts during construction and during project operation. Staff also modeled for fumigation impacts (the mixing of various emissions under specific adverse meteorological Conditions), visibility impacts, and cumulative impacts of the project.

As a result of its independent analysis, Staff concluded that the RCEC, with the implementation of the measures contained in the Conditions of Certification set forth in the Final Staff Assessment, will not, either alone or in combination with other identified projects in the area, cause or contribute to any new or existing violations of applicable ambient air quality standards. (Ex. 1, p. 4.1-32; RT 165.)

Staff further testified that, with the implementation of the Staff's proposed Conditions of Certification, the RCEC will be constructed and operated in compliance with all applicable laws, ordinances, regulations, and standards identified in Appendix A of this Decision. (Id.)

Fugitive Dust Mitigation and Monitoring

The Staff and Applicant agree on all of the Staff's proposed Conditions of Certification, except for Staff's newly proposed Conditions relating to the monitoring of PM_{10} emissions during excavation, earthmoving, and grading activities.

Both the Applicant and Staff agree that a comprehensive program of mitigation measures will be employed to control fugitive dust from construction activities, as set forth in AQ-C3. (Ex. 1, p. 4.1-30; Ex. 3, p. 3.) Both parties further agree that "particularly with respect to dust control of earth moving activities and unpaved roads, if the mitigation measures are applied correctly and with sufficient frequency the control efficiency can approach 100%." (Ex. 1, p. 4.1-30; Ex. 3, p. 3.) Both parties further agree that "given a high degree of day to day vigilance on the part of construction personnel, the construction emissions from the project site will be minimized or eliminated and will not cause a new violation or significantly contribute to existing violations of the State PM_{10}" ambient air quality standards. (Ex. 1, p. 4.1-30; Ex. 3, p. 3.) Finally, a Construction Mitigation Manager will be administering and enforcing the Fugitive Dust Mitigation Plan on-site during construction.

However, despite these areas of agreement, the Staff testifies that "the only way to guarantee a higher then average day to day mitigation effort is to set up real time up wind and down wind PM_{10} monitors around the site throughout construction." (Ex. 1, p. 4.1-30.) Staff witness Behymer argued that additional monitoring is necessary since modeling indicates that the RCEC construction site will create a 90 micrograms (10^{-6}) per cubic meter ($\mu g/m^3$) impact with a normal 8 to 12 hours-a-day construction schedule. By comparison, modeling for the LECEF project shows that the LECEF is likely to impose approximately a 37 mcg impact with a 24-hours-a-day construction schedule. (RT 168.)

In contrast, while Applicant agrees with the proposed dust control mitigation measures, Applicant disagrees with portions of Conditions **AQ-C1** through **AQ-C5** as proposed by Staff in the FSA. Specifically, the Applicant disagrees with the imposed monitoring requirements of proposed Conditions **AQ-C1** and **AQ-C3** and also recommends revisions to **AQ-C2** and **AQ-C4** and the deletion of **AQ-C5.** (Ex. 3, p. 3.)

The Applicant argues that the proposed Conditions are directly derived from a "demonstration project" included in the Energy Commission's recent Presiding Member's Proposed Decision in the LECEF: the Los Esteros Construction Monitoring Demonstration Program (CMDP) (the "LECEF Demonstration project").

The Applicant further testifies that it is unnecessary and inappropriate to attempt to impose the LECEF Demonstration project requirements on the RCEC project. Because the Staff and the Applicant are in agreement that with the implementation of the proposed fugitive dust mitigation measures, there will be no significant fugitive dust impacts associated with the RCEC project, the Applicant contended that to impose additional mitigation and monitoring requirements without a finding of a significant impact is both inappropriate and inconsistent with CEQA. (Ex. 3, pp. 3-4.)

According to the Mr. Darvin's testimony, the Staff in the LECEF case stated that the LECEF CMDP was recommended by Staff because of that project's expedited, 24-hour-a-day construction schedule. (Ex. 3, pp. 4-5; RT 155-156.) In contrast to the LECEF, the RCEC project is not proposing to use such an expedited construction schedule. Thus, the Applicant contends that the Energy Commission should not impose a Condition for "expedited" construction schedule impacts on projects such as RCEC that do not feature an expedited construction schedule. (Ex. 3, pp. 3-5.)

The Applicant proposes that the results of the Los Esteros CMDP be reviewed at the completion of the construction phase of that project, to determine if the

LECEF CMDP provides any experiences that are applicable to a project without an expedited schedule. (Ex. 3, pp. 4-5; 6/20 RT 159-160.) If such a demonstration shows that the demonstration project proves effective in any way that is meaningful to a project not proceeding on an expedited construction schedule, then the Applicant agrees to meet and confer with the Staff to determine what value, if any, such program might have for the RCEC project.

Public Comment

Frank DelFino expressed anxiety regarding effluent from the project's cooling towers. (RT 181.) Howard Beckman voiced concern that no statistical tests were done for the predictive reliability of the air quality model used by Staff in its analysis. Staff witness Gabriel Behmer acknowledged that Staff carried out no such tests. However, Staff Counsel Dick Ratliff pointed out that the Staff uses EPA-approved models in conducting its air quality analysis. (RT 182.) Barbara George of Women's Energy Matters stated her worries about cumulative impacts of local emissions from highways combining with those of the project as well as the risk of the project emitting pollutants in the plume from the cooling towers. Staff witness Behmer explained that the Staff analysis includes existing emissions, including those from local highways, as part of the baseline or background environmental Conditions. Staff then adds project-related emissions to that amount to determine total impacts. He also included vapor-born particulates from cooling towers in his analysis. (RT 183-189.)

Commission Discussion

The Commission is concerned that PM_{10} emissions generated by the project during excavation, earthmoving, and grading activities may contribute to existing local PM_{10} violations. Staff acknowledges that if the Conditions of Certification are vigorously followed, significant impacts can be avoided. Because the advanced monitoring required for particulate emissions at the Los Esteros project is a demonstration, the Commission will not impose that level of monitoring at the RCEC site at this time. However, it is our intention that the Commission's

Compliance Unit will closely examine the effectiveness of the demonstration at Los Esteros. If it proves effective, Compliance staff is directed to consider requiring similar steps at the RCEC to reduce construction-related fugitive dust, where appropriate. In determining whether to seek such an additional monitoring requirement, the Compliance Unit shall take into account the effectiveness of the existing Conditions of Certification at the RCEC site and the extent to which the additional monitoring would likely reduce PM_{10} emissions at the RCEC site.

On the basis of the foregoing evidence, we conclude that the RCEC will not create any significant direct or indirect adverse air quality impacts.

FINDINGS AND CONCLUSIONS

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

1. The proposed Russell City Energy Center is located in the San Francisco Bay Air Basin within the jurisdiction of the Bay Area Air Quality Management District.
2. The area is classified non-attainment for the state ozone and PM_{10} and also non-attainment for the federal ozone standard. For all other criteria pollutants, it is designated attainment, unclassified or attainment/unclassified.
3. Construction and operation of the RCEC 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. The Air Pollution Control Officer for the Bay Area Air Quality Management District has issued a Final Determination of Compliance (FDOC) for the project.
6. Implementation of the Conditions of Certification will ensure that the Russell City Energy Center will not result in any significant adverse impacts to air quality.
7. With the Conditions of Certification, the project will be constructed and operated in Compliance with all applicable federal, state, and local laws, ordinances, regulations, and standards governing air quality and set forth in the pertinent portion of Appendix A of this Decision.

We therefore conclude that with the implementation of the Conditions of Certification below, the Russell City Energy Center will not create any significant direct, indirect, or cumulative adverse air quality impacts and will conform with all applicable laws, ordinance, regulations and standards relating to air quality as set forth in the pertinent portions of **Appendix A** of this Decision.

CONSTRUCTION CONDITIONS OF CERTIFICATION

AQ-C1 The project owner/operator shall submit the resume(s) of their selected Construction Mitigation Manager(s) (CMM) to the Energy Commission Compliance project Manager (CPM) for approval. The owner/operator shall be responsible for funding the costs of the CMM however the CMM shall report to the CPM. The CMM shall preferably have a minimum of 8 years experience as follows, however the CPM shall consider all resumes submitted regardless of experience:

- 5 years construction experience as a subcontractor or general contractor.
- An engineering degree or an additional 5 years construction experience.
- 1 year construction project management experience.
- 2 years air quality assessment experience.

The project owner/operator shall make available a dedicated office for the CMM. The CMM shall be responsible for implementing all mitigation measures related to construction equipment combustion emissions, as outlined in Conditions of Certification AQ-C4. A CMM shall be on-site or available to be on-site at any time, until deemed no longer necessary by the CPM. The CMM shall be granted access to all areas of the main and related linear facility construction sites. The CMM shall have the authority to appeal to the CPM to have the CPM stop construction on either the main or the related linear facility construction sites as warranted by specific mitigation measures. The CMM may not be terminated prior to the cessation of all construction activities unless approval is granted by the CPM.

Verification: The project owner/operator shall submit the CMM resume(s) to the CPM for approval at least sixty (60) days prior to site mobilization.

AQ-C2 The CMM shall submit to the CPM for approval, a Monthly Construction Compliance Report (MCCR). The MCCR will, at a minimum, summarize all compliance actions taken germane to Conditions of Certification AQ-C3 and AQ-C4. The MCCR shall include, at a minimum, the following elements:

Fugitive Dust Mitigation Monthly Report
(see Condition of Certification AQ-C3)

- Identification of specific mitigation measure performed, the location performed, date performed and date enforced or verified as remaining effective.
- Identification of any transgressions or circumventions of mitigation measure and the actions taken to correct the situation.
- Identification of any observation by the CMM of dust plumes beyond the property boundary of the main construction site or beyond an acceptable distance from the linear construction site and what actions (if any) where taken to abate the plume.
- A summary report of all ambient air monitoring data.

Diesel Construction Equipment Mitigation Monthly Report
(see Condition of Certification AQ-C4)

- Identification of any changes, as approved by the CPM, to the Diesel Construction Equipment Mitigation Plan from the initial report or the last monthly report including any new contractors and their diesel construction equipment.
- A Copy of all receipt or other documentation indicating type and amount of fuel purchased, from whom, where delivered and on what date for the main and related linear construction sites.
- Identification and verification of all diesel engines required to meet EPA or CARB 1996 off-road diesel equipment emission standards.
- The suitability of the use of a catalyzed diesel particulate filter for a specific piece of construction equipment is to be determined by a qualified mechanic or engineer who must submit a report through the CMM to the CPM for approval. The identification of any suitability report being initiated, pursued or the completed report should be included the monthly report (in the month that it was completed) as should the verification of any subsequent installation of a catalyzed diesel particulate filter.
- Identification of any observation by the CMM of dark plumes emanating from diesel-fire construction equipment beyond the property boundary of the main construction site or beyond an acceptable distance from the linear construction site and what actions (if any) where taken to abate the plume or future expected plumes.

Verification: The CMM shall submit to the CPM for approval, the Monthly Construction Compliance Report (MCCR) for each month by the 15th (or the

following Monday if the 15th is a Saturday or Sunday) of the following month while construction is occurring at the main or related linear construction sites.

AQ-C3 The project owner/operator shall prepare and submit to the CPM for approval a Fugitive Dust Mitigation Plan (FDMP) that specifically identifies all fugitive dust mitigation measures that will be employed for the construction of the facility and administered on site. The construction mitigation measures that shall be addressed in the FDMP include, but are not limited to, the following:

- Identification of the employee parking area(s) and surface composition of those parking area(s)
- The frequency of watering of unpaved roads and all disturbed areas
- Application of chemical dust suppressants
- Gravel in high traffic areas
- Paved access aprons
- Sandbags to prevent run off
- Posted speed limit signs
- Wheel washing areas prior to large trucks leaving the project site
- Methods that will be used to clean tracked-out mud and dirt from the project site onto public roads
- For any transportation of borrowed fill material
    1. Vehicle covers
    2. Wetting of the transported material
    3. Appropriate freeboard
- Methods for the stabilization of storage piles and disturbed areas
- Windbreaks at appropriate locations
- Additional mitigation measures to be implemented at the direction of the CMM in the event that the standard measures fail to completely control dust from any activity and/or source
- The suspension of all earth moving activities under windy Conditions
- On-site monitoring devices

In monitoring the effectiveness of all mitigation measures included in the FDMP, the CMM shall take into account the following, at a minimum:

a) On-site spot checks of soil moisture content at locations where soil disturbance, movement, and/or storage is occurring;

b) Visual observations of all construction activities; and

c)

c) Review the results of Los Esteros Critical Energy Facility Air Monitoring Demonstration project, (LECEF)

d) At least 45 days prior to site mobilization, the applicant shall meet with staff, CMM and CPM for LECEF, and the CPM for RCEC to determine the effectiveness of the PM10 site monitoring for LECEF, and whether a similar Construction Monitoring Demonstration Program should be required during construction of the RCEC. The results of this meeting will be reported in the Fugitive Dust Mitigation Plan.

The CMM shall implement the following procedures for additional mitigation measures if the CMM determines that the existing mitigation measures are not resulting in adequate mitigation:

1. The CMM shall direct more aggressive application of the existing mitigation methods within fifteen (15) minutes of making such a determination.
2. The CMM shall direct implementation of additional methods of dust suppression if step #1 specified above fails to result in adequate mitigation within thirty (30) minutes of the original determination.
3. The CMM shall have the authority to appeal to the CPM to have the CPM direct a temporary shutdown of the source of the emissions if step #2 specified above fails to result in adequate mitigation within one (1) hour of the original determination. If the CPM grants the request for shutdown, the activity shall not restart until the CPM authorizes restarting of the activity.

Verification: At least thirty (30) days prior to site mobilization, the project owner/operator shall provide the CPM with a copy of the Fugitive Dust Mitigation Plan (FDMP) for approval. Site mobilization shall not commence until the project owner/operator receives approval of the FDMP from the CPM. If the results of the LECEF Demonstration project are not available in time for their consideration in the initial FDMP, Staff and the project owner/operator will meet and confer regarding the applicability of the LECEF Demonstration project to the RCEC project after such results are made available to Staff and the project owner/operator. If Staff and project owner/operator are in agreement, the FDMP may be amended to reflect such agreement. If the Staff and Applicant are not in agreement after informal dispute resolution process are exhausted, then the Staff and the project owner shall each file a petition with the Energy Commission to resolve any differences between the parties regarding the applicability of the LECEF Demonstration project to the RCEC project.

AQ-C4 The project owner/operator shall prepare and submit to the CPM for approval a Diesel Construction Equipment Mitigation Plan (DCEMP) that will

specifically identify diesel engine mitigation measures that will be employed during the construction phase of the main and related linear construction sites. The project owner/operator will be responsible for implementing and maintaining all measure identified in the DCEMP. The DECEMP shall include the following:

1. A list of all diesel-fueled, off-road, stationary or portable construction-related equipment to be used either on the main or the related linear construction sites. This list will initially be estimated and then subsequently be updated as specific contractors become identified. Prior to a contractor gaining access to the main or related linear construction sites, the project owner/operator will submit to the CPM for approval, an update of this list including all of the new contractor's diesel construction equipment.
2. Each piece of construction equipment listed under item #1 of this Condition must demonstrate compliance according to the following mitigation requirements, except as noted in items #3, #4 and #5 of this Condition:

Engine Size (BHP)	**1996 CARB or EPA Certified Engine**	**Required Mitigation**
< 100	NA	ULSD
> or = 100	Yes	ULSD
> or = 100	No	ULSD and CDPF, if suitable as determined by the CPM

3. If the construction equipment is intended to be on-site for ten (10) days or less, then none of the mitigation measures identified in item #2 of this Condition are required.
4. The CPM may grant relief from the mitigation measures listed in item #2 of this Condition for a specific piece of equipment if the project owner/operator can demonstrate that they have made a good faith effort to comply with the mitigation measures and that compliance is not possible.
5. Any implemented mitigation measure in item #2 of this Condition may be terminated immediately if one of the following Conditions exists, however the CPM must be informed within ten (10) working days of the termination:

    5.1 The measure 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 back pressure.

5.2 The measure is causing or is reasonably expected to cause significant engine damage.

5.3 The measure is causing or is reasonably expected to cause a significant risk to workers or the public.

5.4 Any other seriously detrimental cause that has approval by the CPM prior to the termination being implemented.

6. All contractors must agree to limit diesel engine idle time on all diesel-powered equipment to no more than ten (10) minutes, to the extent practical.

Verification: The project owner/operator shall submit the initial Diesel Construction Equipment Mitigation Plan (DCEMP) to the CPM for approval at least thirty (30) days prior to site mobilization. The project owner/operator will update the initial DCEMP as necessary, no less than ten (10) days prior to a specific contractor gaining access to either the main or related linear construction sites. The project owner/operator will notify the CPM of any emergency termination within ten (10) working days of the termination.

OPERATIONS CONDITIONS OF CERTIFICATION

All definitions presented in the Bay Area Air Quality Management District's Final Determination of Compliance for the Russell City Energy Center apply to the following Conditions of Certification.

Process Equipment

S-1 Combustion Turbine Generator (CTG) #1, Westinghouse 501F, 1979.4 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-1 Selective Catalytic Reduction (SCR) System.

S-2 Heat Recovery Steam Generator (HRSG) #1, with Duct Burner Supplemental Firing System, 200 MMBtu/hr maximum rated capacity; Abated by A-1 Selective Catalytic Reduction (SCR) System.

S-3 Combustion Turbine Generator (CTG) #2, Westinghouse 501F, 1979.4 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-2 Selective Catalytic Reduction (SCR) System.

S-4 Heat Recovery Steam Generator (HRSG) #2, with Duct Burner Supplemental Firing System, 200 MMBtu/hr maximum rated capacity; Abated by A-2 Selective Catalytic Reduction (SCR) System.

S-5 Cooling Tower, Ten Cells, 135,000 gallons per minute

S-6 Emergency Generator, with Caterpillar G3512-90-LE natural gas-fired engine, 660 kW, 6.44 MMBtu/hr input

S-7 Diesel Engine, Cummins 6CTA8.3-F3, 400 hp, 2.11 MMBtu/hr input

AQ-1 The owner/operator of the RCEC shall minimize emissions of carbon monoxide and nitrogen oxides from S-1 and S-3 Gas Turbines and S-2 and S-4 Heat Recovery Steam Generators (HRSGs) to the maximum extent possible during the commissioning period. Conditions **AQ-1** through **AQ-12** shall only apply during the commissioning period as defined in the District FDOC. Unless otherwise indicated, Conditions **AQ-13** through **AQ-56** shall apply after the commissioning period has ended.

Verification: The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-2 At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall tune the S-1 & S-3 Gas Turbine combustors and S-2 & S-4 Heat Recovery Steam Generator duct burners to minimize the emissions of carbon monoxide and nitrogen oxides.

Verification: The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-3 At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall install, adjust, and operate the SCR systems to minimize the emissions of carbon monoxide and nitrogen oxides from S-1 & S-3 Gas Turbines and S-2 & S-4 Heat Recovery Steam Generators.

Verification: The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-4 Coincident with the as-designed operation of A-1 & A-2 SCR Systems, pursuant to Conditions **AQ-3**, **AQ-10**, **AQ-11**, and **AQ-12**, the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) the owner/operator shall operate the facility in a manner such that comply with the NOx and CO emission limitations specified in Conditions **AQ-20(a)** through **AQ-20(d)**.

Verification: The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-5 The owner/operator of the RCEC shall submit a plan to the District Permit Services Division and the CPM describing the procedures to be followed during the commissioning of the gas turbines and HRSGs. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the Dry-Low-NOx combustors, the installation and operation of the SCR systems and oxidation catalysts, the installation, calibration, and testing of the CO and NOx continuous emission monitors, and any activities requiring the firing of the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) without abatement by their respective SCR System. Neither Gas Turbine (S-1 or S-3) shall be fired sooner than 28 days after the District receives the commissioning plan.

Verification: The project owner/operator shall submit a Commissioning Plan to the District Permit Services Division and the CPM for approval at least four (4) weeks prior to first fire of S-1, S-2, S-3 and S-4.

AQ-6 During the commissioning period, the owner/operator of the RCEC shall demonstrate compliance with Conditions **AQ-8** through **AQ-11** through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

a. Firing hours for each gas turbine (S-1 and S-3) and each HRSG (S-2 and S-4)
b. Fuel flow rates to each train
c. Stack gas nitrogen oxide emission concentrations at P-1 and P-2

d. Stack gas carbon monoxide emission concentrations P-1 and P-2
e. Stack gas carbon dioxide concentrations P-1 and P-2

The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4). The owner/operator shall use District-approved methods to calculate heat input rates, NOx mass emission rates, carbon monoxide mass emission rates, and NOx and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

Verification: The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-7 The owner/operator shall install, calibrate, and make operational District-approved continuous emission monitors specified in Condition 6 prior to first firing of the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4). After first firing of the turbines and auxiliary boilers, the detection range of these continuous emission monitors as necessary to accurately measure the resulting range of CO and NOx emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

Verification: The project owner/operator shall notify the District and CPM of the date of expected first fire at least thirty (30) days prior to first fire and shall make the project site available for inspection if desired by either the District or CPM. The project owner/operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

AQ-8 The owner/operator shall not operate the facility such that the total number of firing hours of S-1 Gas Turbine and S-2 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-1 SCR System shall not exceed 300

hours during the commissioning period. Such operation of S-1 Gas Turbine and S-2 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and

Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

AQ-9 The total number of firing hours of S-3 Gas Turbine and S-4 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-2 SCR System shall not exceed 300 hours during the commissioning period. Such operation of S-3 Gas Turbine and S-4 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

AQ-10 The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM_{10}, and sulfur dioxide that are emitted by the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in Condition **AQ-25**.

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

AQ-11 Combined pollutant mass emissions from the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) shall not exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the start-up and shutdown of the Gas Turbines (S-1 & S-3).

NOx (as NO_2)	7,880 pounds per calendar day	400 pounds per hour
CO	17,716 pounds per calendar day	584 pounds per hour
POC (as CH_4)	230 pounds per calendar day	
PM_{10}	456 pounds per calendar day	
SO_2	77 pounds per calendar day	

Verification: During the Commissioning Period, as defined in the district FDOC, the project owner/operator shall submit to the CPM for approval, a Monthly Emissions Report that includes, but is not limited to, fuel use, turbine operation, post combustion control operation, ammonia use and CEM readings on an hourly and daily basis. The Monthly Emissions Report for each month must be submitted by the 15th (or the following Monday if the 15th is a Saturday or Sunday) of the following month.

AQ-12 Prior to the end of the Commissioning Period, the Owner/Operator shall conduct a District and Energy Commission approved source test using external continuous emission monitors to determine compliance with Condition **AQ-20**. The source test shall determine NOx, CO, and POC emissions during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three start-up and three shutdown periods.

Verification: No later than twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within thirty (30) days of the source testing date.

Conditions for the Gas Turbines (S-1 & S-3) and the Heat Recovery Steam Generators (HRSGs; S-2 & S-4)

AQ-13 The owner/operator shall fire the Gas Turbines (S-1 and S-3) and HRSG Duct Burners (S-2 and S-4) exclusively on natural gas. (BACT for SO_2 and PM_{10})

Verification: The project owner/operator shall make the project site available for inspection at any time by representatives of the District, ARB, USEPA and Energy Commission.

AQ-14 The owner/operator shall not exceed 2,179.4 MM Btu per hour, averaged over any rolling 3-hour period from the combined heat input rate to

each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4). (PSD[7] for NOx)

Verification: A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-15 The owner/operator shall not exceed 52,306 MM Btu per calendar day from the combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4). (PSD for PM_{10})

Verification: A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-16 The owner/operator shall not exceed 34,679,108 MM Btu per year from the combined cumulative heat input rate for the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4). (Offsets)

Verification: A detailed report of fuel use and equipment operation shall be included in each January 30 Quarterly Air Quality Report as required by the verification of Condition **AQ-36**.

AQ-17 The owner/operator shall not fire HRSG duct burners (S-2 and S-4) unless its associated Gas Turbine (S-1 and S-3, respectively) is in operation. (BACT for NOx)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-18 The owner/operator shall properly operate and properly maintain A-1 Selective Catalytic Reduction (SCR) System except as provided in Condition **AQ-8**, whenever fuel is combusted at S-1 Gas Turbine and/or S-2 HRSG and A-1 catalyst bed has reached minimum operating temperature. (BACT for NOx)

Verification: The project owner/operator shall make the project site available for inspection at any time by representatives of the District, ARB, USEPA and Energy Commission.

[7] PSD is the prevention of significant deterioration.

AQ-19 The owner/operator shall properly operate and properly maintain A-2 Selective Catalytic Reduction (SCR) System except as provided in Condition **AQ-9**, whenever fuel is combusted at S-2 Gas Turbine and/or S-4 HRSG and A-2 catalyst bed has reached minimum operating temperature. (BACT for NOx)

Verification: The project owner/operator shall make the project site available for inspection at any time by representatives of the District, ARB, USEPA and Energy Commission.

AQ-20 The owner/operator of Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) shall comply with requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown. (BACT, PSD, and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated in accordance with District approved methods as NO_2) at P-1 (the combined exhaust point for the S-1 Gas Turbine and the S-2 HRSG after abatement by A-1 SCR System) shall not exceed 19.5 pounds per hour or 0.0090 lb/MM Btu (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated in accordance with District approved methods as NO_2) at P-2 (the combined exhaust point for the S-2 Gas Turbine and the S-4 HRSG after abatement by A-2 SCR System) shall not exceed 19.5 pounds per hour or 0.0090 lb./MM Btu (HHV) of natural gas fired. (PSD for NOx)

(b) The nitrogen oxide emission concentration at emission points P-1 and P-2 each shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any 1-hour period. (BACT for NOx)

(c) Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 0.0087 lb./MM Btu (HHV) of natural gas fired or 28.3 pounds per hour, averaged over any rolling 3-hour period. (PSD for CO)

(d) The carbon monoxide emission concentration at P-1 and P-2 each shall not exceed 4 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. (BACT for CO)

(e) Ammonia (NH_3) emission concentrations at P-1 and P-2 each shall not exceed 5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. The continuous recording of the ammonia injection rate to A-1 and A-2 SCR Systems shall verify this ammonia emission concentration. The correlation between the gas turbine and HRSG heat input rates, A-1 and A-2 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1 and P-2 shall be determined in accordance with permit Condition **AQ-31**. (TRMP for NH3)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at P-1 and P-2 each shall not exceed 2.72 pounds per hour or 0.00125 lb/MM Btu of natural gas fired. (BACT)

(g) Sulfur dioxide (SO_2) mass emissions at P-1 and P-2 each shall not exceed 1.51 pounds per hour or 0.0007 lb/MM Btu of natural gas fired. **Sulfur content of the natural gas shall not exceed 0.25 grains/100 scf.** (BACT)

(h) Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 9 pounds per hour or 0.00455 lb/MM Btu of natural gas fired when the HRSG duct burners are not in operation. Particulate matter (PM_{10}) mass emissions at P-1 and P-2 each shall not exceed 12 pounds per hour or 0.00551 lb./MM Btu of natural gas fired when the HRSG duct burners are in operation. (BACT)

Verification: The project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-21 The owner/operator shall operate the facility such that the regulated air pollutant mass emission rates from each of the Gas Turbines (S-1 and S-3) during a start-up or a shutdown **does not** exceed the following limits: (PSD)

	Cold Start-Up (lb/start-up)	**Hot Start-Up (lb/start-up)**	**Shutdown (lb/shutdown)**
Oxides of Nitrogen (as NO_2)	240	80	18
Carbon Monoxide (CO)	2,514	902	43.8
Precursor Organic Compounds (as CH_4)	48	16	5

Verification: The project owner/operator shall submit documentation of compliance with the emission limits in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-22 The owner/operator shall not operate in start-up mode for both Gas Turbines (S-1 and S-3) simultaneously. (PSD)

Verification: The project owner/operator shall submit documentation of all start-up events as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-23 The owner/operator shall design and construct the heat recovery steam generators (S-2 & S-4) and associated ducting such that an oxidation catalyst can be readily installed and properly operated if deemed necessary by the APCO **or CPM** to insure compliance with the CO **and/or POC** emission rate limitations of Conditions **AQ-20(c), AQ-20(d)** and **AQ-20(f)**. (BACT)

Verification: Prior to the first firing of natural gas in either turbine the owner/operator shall provide as built drawings or other suitable proof of compliance with this Condition of Certification to the District and the CPM.

AQ-24 The owner/operator shall not exceed the total combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), including emissions generated during Gas Turbine start-ups and shutdowns for the following limits during any calendar day:

(a)	1,364 pounds of NOx (as NO_2) per day	(CEQA)
(b)	7,882 pounds of CO per day	(PSD)
(c)	230 pounds of POC (as CH_4) per day	(CEQA)
(d)	456 pounds of PM_{10} per day	(PSD)
(e)	78 pounds of SO_2 per day	(BACT)

Verification: The project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-25 The owner/operator shall not exceed the cumulative combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3, and S-4), Cooling Tower (S-5), Emergency Generator (S-6) and Fire Pump Engine (S-7), including emissions generated during gas turbine start-ups and shutdowns for the following limits during any consecutive twelve-month period:

(a)	134.6 tons of NOx (as NO_2) per year	(Offsets, PSD)
(b)	584.2 tons of CO per year	(Cumulative Increase, PSD)
(c)	27.8 tons of POC (as CH_4) per year	(Offsets)
(d)	86.4 tons of PM_{10} per year	(Cumulative Increase, PSD)
(e)	12.2 tons of SO_2 per year	(Cumulative Increase)

Verification: The project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-26 The owner/operator shall not exceed 7 tons in any consecutive four quarters of sulfuric acid emissions (SAM) from P-1 and P-2. (Basis: PSD)

Verification: The project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as

part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-27 The owner/operator shall not exceed the maximum projected annual toxic air contaminant emissions (per Condition **AQ-29**) from the Gas Turbines and HRSGs combined (S-1, S-2, S-3, and S-4) for the following limits:

3,726	Pounds of formaldehyde per year
2,324	Pounds of acetaldehyde per year
218	Pounds of acrolein per year
461	Pounds of benzene per year
22.4	Pounds of specified polycyclic aromatic hydrocarbons (PAHs) per year unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment using the emission rates determined by source test and the most current Bay Area Air Quality Management District approved procedures and unit risk factors in effect at the time of the analysis. The owner/operator may request that the District and the CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and the CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. [Toxic Risk Management Policy (TRMP).]

Verification: If prepared, the health risk analysis shall be submitted to the District and the CPM within sixty (60) days of the source test date. Otherwise, the project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the January 30 Quarterly Air Quality Report each year required by the verification of Condition **AQ-36**.

AQ-28 The owner/operator shall demonstrate compliance with Conditions **AQ-14** through **AQ-17**, **AQ-20(a)** through **AQ-20(d)**, **AQ-21**, **AQ-24(a)**, **AQ-24(b)**, **AQ-25(a)**, and **AQ-25(b)** by using properly operated and maintained continuous monitors (during all hours of operation including equipment Start-up and Shutdown periods) for all of the following parameters:

(a) Firing Hours and Fuel Flow Rates for each of the following sources: S-1 & S-3 combined and S-2 & S-4 combined.

(b) Carbon Dioxide (CO_2) or Oxygen (O_2) concentrations, Nitrogen Oxides (NOx) concentrations, and Carbon Monoxide (CO) concentrations at each of the following exhaust points: P-1 and P-2.

(c) Ammonia injection rate at A-1 and A-2 SCR Systems

(d) Steam injection rate at S-1 & S-3 Gas Turbine Combustors

The owner/operator shall record all of the above parameters every fifteen (15) minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the owner/operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and average hourly pollutant emission concentrations.

The owner/operator shall use the parameters measured above and District-approved calculation methods to calculate the following parameters:

(e) Heat Input Rate for each of the following sources: S-1 & S-3 combined and S-2 & S-4 combined.

(f) Corrected NOx concentrations, NOx mass emissions (as NO_2), corrected CO concentrations, and CO mass emissions at each of the following exhaust points: P-1 and P-2. Applicable to emission points P-1 and P-2, the owner/operator shall record the parameters specified in Conditions **AQ-28(e)** and **AQ-28(f)** at least once every fifteen (15) minutes (excluding normal calibration periods). As specified below, the owner/operator shall calculate and record the following data:

g) Total Heat Input Rate for every clock hour and the average hourly Heat Input Rate for every rolling 3-hour period.

(h) On an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and associated HRSG combined and all four sources (S-1, S-2, S-3, and S-4) combined.

(i) The average NOx mass emissions (as NO_2), CO mass emissions, and corrected NOx and CO emission concentrations for every clock hour and for every rolling 3-hour period.

(j) On an hourly basis, the cumulative total NOx mass emissions (as NO_2) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine and associated HRSG combined, and all four sources (S-1, S-2, S-3, and S-4) combined.

(k) For each calendar day, the average hourly Heat Input Rates, Corrected NOx emission concentrations, NOx mass emissions (as NO_2), corrected CO emission concentrations, and CO mass emissions for each Gas Turbine and associated HRSG combined.

(l) On a daily basis, the cumulative total Nox mass emissions (as NO2) and cumulative total CO mass emissions, for the previous consecutive twelve-month period for all four sources (S-1, S-2, S-3, and S-4) combined.

(1-520.1, 9-9-501, BACT, Offsets, NSPS, PSD, Cumulative Increase)

Verification: The project owner/operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-29 To demonstrate compliance with Conditions **AQ-20(f)**, **AQ-20(g)**, **AQ-20(h)**, **AQ-24(c)** through **AQ-24(e)**, **AQ-25(c)** through **AQ-25(e)**, and **AQ-26**, the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM_{10}) mass emissions (including condensable particulate matter), Sulfur Dioxide (SO_2) mass emissions, and sulfuric acid mist (SAM) mass emissions from each power train. The owner/operator shall use the actual Heat Input Rates calculated pursuant to Condition **AQ-28**, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, and Energy Commission and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:

(a) For each calendar day, POC, PM_{10}, SO_2, and SAM emissions shall be summarized for: each power train (Gas Turbine and its respective HRSG combined) and all four sources (S-1, S-2, S-3, and S-4) combined and

(b) On a daily basis, the 365-day rolling average cumulative total POC, PM_{10}, SO_2, and SAM mass emissions, for all four sources (S-1, S-2, S-3, and S-4) combined.

(Offsets, PSD, Cumulative Increase)

Verification: The project owner/operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-30 To demonstrate compliance with Condition **AQ-27**, the owner/operator shall calculate and maintain records on an annual basis of the maximum projected annual emissions of: Acetaldehyde, Acrolein, Formaldehyde, Benzene, and Specified PAHs. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 34,679,088 MM Btu/year and the highest emission factor (pounds of pollutant per MM Btu of Heat Input) determined by any source test of the S-1 & S-3 Gas Turbines and/or S-2 & S-4 Heat Recovery Steam Generators. (TRMP)

Verification: The project owner/operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-31 After start-up of the RCEC, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 to determine the corrected ammonia (NH_3) emission concentration to determine compliance with Condition **AQ-20(e)**. The source test shall determine the correlation between the heat input rates of the gas turbine and associated HRSG, A-1 or A-2 SCR System ammonia injection rate, and the corresponding NH_3 emission concentration at emission point P-1 or P-2. The source test shall be conducted over the expected

operating range of the turbine and HRSG (including, but not limited to minimum, 70%, 85%, and 100% load) to establish the range of ammonia injection rates necessary to achieve NOx emission reductions while maintaining ammonia slip levels. Continuing compliance with Condition **AQ-20(e)** shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. (TRMP)

Verification: Initial source testing shall be completed within sixty (60) days of start-up. No later than twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within sixty (60) days of the source testing date.

AQ-32 After start-up of the RCEC and on an annual basis thereafter the owner/operator shall conduct a District-approved source test on exhaust points P-1 and P-2 while each Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum load (including steam injection power augmentation mode) to determine compliance with Conditions **AQ-20(a)**, **(b)**, **(c)**, **(d)**, **(f)**, **(g)**, and **(h)**, while each Gas Turbine and associated Heat Recovery Steam Generator are operating at minimum load to determine compliance with Conditions **AQ-20(c)** and **(d)**, and to verify the accuracy of the continuous emission monitors required in Condition **AQ-27**. The owner/operator shall test for (as a minimum): water content, stack gas flow rate, oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as NO2), carbon monoxide concentration and mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter (PM_{10}) emissions including condensable particulate matter. (BACT, offsets)

Verification: Initial source testing shall be completed within sixty (60) days of start-up. No later than twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within seven (7) working

days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within sixty (60) days of the source testing date.

AQ-33 After start-up of the RCEC and on a quarterly basis thereafter, the owner/operator shall conduct a District approved source test on exhaust points P-1 and P-2 while each Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum load (including steam injection power augmentation mode) to demonstrate compliance with the SAM levels in Condition **AQ-26**. The owner/operator shall test for (as a minimum) SO_2, SO_3, SAM and ammonium sulfates. After acquiring one year of source test data on these units, the owner/operator may petition the District to switch to annual source testing if test variability is low. (Basis: PSD Avoidance, SAM Periodic Monitoring)

Verification: Initial source testing shall be completed within sixty (60) days of start-up. No later than twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within sixty (60) days of the source testing date.

AQ-34 After start-up of the RCEC and on an biennial basis (once every two years) thereafter, the owner/operator shall conduct a District-approved source test on exhaust point P-1 or P-2 while the Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum allowable operating rates to demonstrate compliance with Condition **AQ-27**. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to Condition **AQ-30** for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy (TRMP) trigger levels shown, then the owner/operator may discontinue future testing for that pollutant:

Acetaldehyde	$\leq$	72 pounds/year
Acrolein	$\leq$	3.9 pounds/year
Benzene	$\leq$	26.8 pounds/year
Formaldehyde	$<$	132 pounds/year
Specified PAHs	$\leq$	0.18 pounds/year

Verification: Initial source testing shall be completed within sixty (60) days of start-up. No later than twenty (20) working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within twenty (20) working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within sixty (60) days of the source testing date.

AQ-35 The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section and the CPM prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section and the CPM in writing of the source test protocols and projected test dates at least seven (7) days prior to the testing date(s). As indicated above, the Owner/Operator shall measure the contribution of condensable PM (back half) to the total PM_{10} emissions. However, the Owner/Operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District and the CPM within sixty (60) days of conducting the tests. (BACT)

Verification: The project owner/operator shall submit documentation of the procedures and results of each source test conducted as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-36 The owner/operator of the RCEC shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Regulation 2-6-502)

Verification: The project owner/operator shall submit a Quarterly Air Quality Report (QAQR) for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each year. Each QAQR shall include, but not be limited to, a compliance matrix, a summary of operations activities, and a summary of all reports covered by this Condition. The January 30 report for each year shall

include an annual summary of the four Quarterly Air Quality Reports covering the preceding calendar year. The reports shall be submitted to the California Energy Commission Compliance project Manager (CPM).

AQ-37 The owner/operator of the RCEC shall maintain all records and reports on site for a minimum of five (5) years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The owner/operator shall make all records and reports available to District and the CPM Staff upon request. (Regulation 2-6-501)

Verification: The project owner/operator shall maintain a copy of each Quarterly Air Quality Report on site for a minimum of five (5) years.

AQ-38 The owner/operator of the RCEC shall notify the District and the CPM of any violations of these permit Conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules, Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the owner/operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit Condition. (Regulation 2-1-403)

Verification: The owner/operator shall include a compliance matrix in the Quarterly Air Quality Report required by the verification of Condition **AQ-36**. The Compliance Matrix shall summarizing the project's compliance status for each Condition during the reporting period.

AQ-39 The owner/operator shall install the exhaust stacks (P-1 and P-2) that are at least 145 feet above grade level from the stack base. (PSD, TRMP)

Verification: Prior to the first firing of natural gas in either turbine the owner/operator shall provide as built drawings of the stack or other suitable proof of the minimum stack height to the District and the CPM.

AQ-40 The owner/operator of the RCEC shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval. (Regulation 1-501)

Verification: Prior to the first firing of natural gas in either turbine the owner/operator shall provide as built drawings or other suitable proof of compliance with this Condition of Certification to the District and the CPM.

AQ-41 Within 180 days of the issuance of the Authority to Construct for the RCEC, the owner/operator shall contact the BAAQMD Technical Services Division regarding requirements for the continuous monitors, sampling ports, platforms, and source tests required by Conditions **AQ-28**, **AQ-31**, **AQ-32**, **AQ-33**, **AQ-34** and **AQ-48**. All source testing and monitoring shall be conducted in accordance with the BAAQMD Manual of Procedures. (Regulation 1-501)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-42 Prior to the issuance of the BAAQMD Authority to Construct for the RCEC, the owner/operator shall provide to the District valid emission reduction credit banking certificates in the amount of 154.8 tons/year of Nitrogen Oxides and 27.8 tons/year of Precursor Organic Compounds or equivalent as defined by District Regulations 2-2-302.1 and 2-2-302.2. (Offsets)

Verification: The project owner/operator must submit all ERC documentation to the District and the CPM prior to the issuance of the BAAQMD Authority to Construct.

AQ-43 Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the owner/operator of the RCEC shall submit an application to the BAAQMD for a major facility review permit within 12 months of the issuance of the PSD Permit. (Regulation 2-6-404.1)

Verification: The owner/operator shall notify the CPM within ten (10) working days of any application for, issuance of, and/or modification to any permit pertaining to air quality.

AQ-44 Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the owner/operator of the RCEC shall not operate either of the gas turbines until either: 1) a Title IV Operating Permit has been issued; 2) 24 months after a Title IV Operating Permit Application has been submitted, whichever is earlier. (Regulation 2, Rule 7)

Verification: The owner/operator shall notify the CPM within ten (10) working days of any application for, issuance of, and/or modification to any permit pertaining to air quality.

AQ-45 The owner/operate of the RCEC shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-46 The owner/operator shall take monthly samples of the natural gas at the RCEC facility. The samples shall be analyzed for sulfur content using District-approved laboratory methods or the owner/operator shall obtain certified analytical results from the gas supplier. The sulfur content test results shall retain records on site for a minimum of five years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (cumulative increase)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-47 The owner/operator shall install and maintain the high-efficiency mist eliminators with a maximum guaranteed drift rate of at least 0.0005 percent such that S-5 Cooling Tower minimizes the drift losses. The maximum total dissolved solids (TDS) measured at the base of the cooling towers or at the point of return to the wastewater facility shall not be higher than 2,000 ppmw (mg/l). The owner/operator shall sample the water at least once per day. (PSD)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification, including a summary of all data collected in relation to this Condition, as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-48 The owner/operator shall perform a visual inspection of the cooling tower drift eliminators at least once per calendar year, and repair or replace any drift eliminator components that are broken or missing. Prior to the initial operation of the Russell City Energy Center, the owner/operator shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminators and certify that the installation was performed in a satisfactory manner. Within sixty (60) days of the initial operation of the cooling tower, the owner/operator shall perform an initial performance source test to determine the PM_{10} emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in Condition **AQ-47**. The CPM may, in years five (5) and fifteen (15) of cooling tower operation, require the owner/operator to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in Condition **AQ-47**. (PSD)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification, including color photographs, as

part of the January Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-49 The owner/operator shall fire the S-6 Emergency Generator exclusively on natural gas. (Toxics, Cumulative Increase).

Verification: The project owner/operator shall include documentation of natural gas fuel use of the S-6 Emergency Generator as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-50 The owner/operator shall operate the S-6 Emergency Generator for no more than 100 hours per year for the purpose of reliability testing or in anticipation of imminent emergency Conditions. Emergency Conditions are: (1) Failure of a regular power supply, or (2) involuntary curtailment of a power supply (where the utility that provides regular power has been instructed by the ISO to shed firm load, or where the utility has actually shed firm load). (Cumulative Increase)

Verification: The project owner/operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-51 The owner/operator equip the S-6 Emergency Generator with a non-resettable totalizing counter that records hours of operation. (BACT)

Verification: The project owner/operator shall make the project site available for inspection at any time by representatives of the District, ARB, USEPA and Energy Commission.

AQ-52 The owner/operator shall maintain the following monthly records in a District-approved log for at least 5 years and shall be made available to the District upon request: (BACT)

a. Total number of hours of operation for S-6 Emergency Generator
b. Fuel usage at S-6 Emergency Generator

Verification: The project owner/operator shall submit documentation of S-6 Emergency Generator hours of operation and fuel use as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-53 The owner/operator shall fire the S-7 Fire Pump Engine exclusively on diesel fuel having a sulfur content no greater than 0.05 percent by weight. (Toxics, Cumulative Increase)

Verification: The project owner/operator shall submit documentation S-7 Fire Pump Engine diesel fuel use and sulfur content certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-54 The owner/operator shall operate the S-7 Fire Pump Engine for no more than 30 hours per year for the purpose of reliability testing and non-emergency operation. (Toxics)

Verification: The project owner/operator shall submit documentation S-7 Fire Pump Engine hours of operation as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-55 The owner/operator shall equip the S-7 Fire Pump Engine with a non-resettable totalizing counter that records hours of operation. (BACT)

Verification: The project owner/operator shall make the project site available for inspection at any time by representatives of the District, ARB, USEPA and Energy Commission.

AQ-56 The owner/operator shall maintain the following monthly records in a District-approved log for at least five (5) years and shall make such records readily available for District inspection upon request: (BACT)

a. Total number of hours of operation for S-7 Fire Pump Engine
b. Fuel usage at S-7 Fire Pump Engine

Verification: The project owner/operator shall submit documentation of S-7 Fire Pump Engine hours of operation and fuel use as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-36**.

AQ-57 The project owner/operator shall submit a copy of any proposed modifications to the Authority to Construct and/or Permit to Operate issued by the district, and shall provide a written description of any other air quality related permit modification to the CPM for review and approval.

If the CPM concurs with the process undertaken by, and the decision of, the local air district or other agency concerning any permit modifications, no Energy Commission action (amendment) will be required.

Verification: The project owner/operator shall submit a copy of any request to modify the local air district permits within five (5) days of filing the requested modification to the CPM. The project owner/operator shall provide a written description of any other proposed modification within ten (10) days to the CPM.

AQ-58 The project owner/operator shall fully implement the PM_{10} Mitigation Plan in cooperation with the Bay Area Air Quality Management District as outlined in the Amended PM_{10} Mitigation Plan prepared by the Applicant and docketed on April 5th, 2001. All retrofits and replacements shall be completed within twenty-four (24) months of commencement of first turbine roll.

Verification: The project owner/operator shall submit a PM_{10} Mitigation Progress Report as a part of each Quarterly Air Quality Report required by the verification of Condition **AQ-36**. Once all required emissions efforts have been completed, the Applicant shall submit a Final PM_{10} Mitigation Report within sixty (60) days. The report shall provide detailed documentation of the entire mitigation effort including, but not limited to, funds spent and the exact number of fireplaces and wood stoves retrofit/replaced.

B. PUBLIC HEALTH

This analysis is to determine whether a significant health risk would result from public exposure to the chemicals and combustion by-products that are routinely emitted from the project during operations. The issue of possible worker exposure is addressed in the **Worker Safety and Fire Protection** section of the Decision. The health significance of exposure to EMF, is addressed in the **Transmission Line Safety and Nuisance (TLSN)** section.

SUMMARY OF THE EVIDENCE

Applicant's witness Monica Caravati offered testimony stating that the project will comply with all applicable LORS. (RT 56-57.) Furthermore, she noted that the project would have no significant adverse impacts upon public health in the area. She supported these conclusions with the analyses contained in the AFC (Ex. 8, Section 8.9), written testimony (Ex. 2, pp. 41-44) and data responses (Ex. 12 p. 27).

Staff testimony sponsored by Obed Odoemelam, agreed with Applicant's conclusion as a result of the separate Staff analysis of the project. (Ex. 1, Section 4.7; RT 57.) The Staff witness evaluated a number of noncriteria pollutants with respect to noncancer effects as well as several with regard to a possible cancer risk. The discussion of criteria pollutants, or those pollutants for which ambient air quality standards have been established, is contained in the **Air Quality** section.

The accepted method used by state regulatory agencies in accessing the significance for both acute and chronic noncarcinogenic public health effects is known as the hazard index method. A maximum chronic hazard index of 0.0216 was calculated for the maximally exposed individual while an acute hazard index of 0.246 was calculated for the same individual (Ex. 1, p. 4.7-6). These indices are significantly below the levels of potential health significance, indicating that

no significant health impacts would be associated with the project's noncriteria pollutants. (Id.) The highest combined cancer risk was estimated to be 0.174 in a million for an individual at the point of maximum impact.

This risk was calculated using existing procedures, in which it is assumed that the individual would be exposed at the highest possible levels to all the carcinogenic pollutants from the project for 70 years. This risk value is significantly below Staff's *de minimis* level, meaning that the project's carcinogenic emissions would not pose a significant cancer risk anywhere in the project area. In other words, the maximum cancer risk associated with the project is less than one-fifth of the one-in-one million significance threshold commonly accepted for risk analysis purposes (Id.). The Staff witness concluded that the construction and operation of the proposed natural gas-burning project will not pose a significant public health risk to the surrounding population with respect to the toxic pollutants considered.

PUBLIC COMMENT

Barbara George of Women's Energy Matters (WEM) voiced the concern that a certain number of people would die because of the pollution that the power plant would produce. (RT 57.) In response, Staff witness Mike Ringer explained the type of health risk assessment conducted by Staff in analyzing the RCEC proposal. He noted that Staff analysis revealed the increased lifetime cancer risk of operating the plant is conservatively modeled at .174 chances in a million. By comparison, he stated that the average person's lifetime risk of getting cancer is approximately 250,000 in a million. Mr. Ringer stated that there is no realistic chance of getting cancer from the project's operation (RT 60-61.)

FINDINGS AND CONCLUSIONS

Based on the evidence of record and assuming the implementation of the Conditions of Certification contained in this Decision, we find as follows:

1. The primary potential adverse public health impact associated with the RCEC is due to combustion products from burning natural gas.
2. Combustion of natural gas results in the emission of criteria and noncriteria pollutants.
3. As discussed in the **Air Quality** portion of this Decision, emissions of criteria pollutants will be at levels consistent with those established to protect public health.
4. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic noncarcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic public health effects.
5. Application of the hazard index method reveals that emission of non-criteria pollutants from the RCEC will not cause acute or chronic adverse public effects.
6. Cumulative impacts from noncriteria pollutants are not expected to be significant.
7. The maximum cancer risk associated with the project is less than one-fifth of the one-in-one million significance threshold commonly accepted for risk analysis purposes.
8. Emissions from the construction, operation and closure of the proposed natural gas-burning RCEC will not have a significant negative impact on the public health of the surrounding population or make any significant contribution to any local exposure of a cumulative nature.

We therefore conclude that project emissions of noncriteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk.

CONDITIONS OF CERTIFICATION

All Conditions of Certification that control project emissions are specified in the **Air Quality** section of this Decision.

C. HAZARDOUS MATERIALS MANAGEMENT

The purpose of the analysis in this area is to determine if the RCEC will result in the potential for a significant impact on the public resulting from the use, handling or storage of hazardous materials at the proposed facility. If significant adverse impacts on the public are identified, the Energy Commission must also evaluate design alternatives and additional mitigation measures to reduce any impacts to the extent feasible.

SUMMARY OF THE EVIDENCE

W. Douglas Urry served as Applicant's witness in this area. His testimony established that project construction and operation waste streams were evaluated as well as plans for the collection, disposal, and recycling of these wastes. Details of the analysis are found in the AFC (Ex. 8, Section 8.5) and written testimony. (Ex. 2, pp. 26-30; RT 41-42.) Mr. Urry concluded that the project will comply with all applicable LORS concerning the handling of hazardous materials. Furthermore, Mr. Urry stated that, with the Conditions of Certification proposed by Staff, the project will not have any significant adverse impacts on the environment due to the use and handling of hazardous materials (Id.).

The analysis of the Staff was conducted by Staff witness Dr. Alvin Greenberg, who presented this analysis in his testimony. (Ex. 1, Section 4.4; RT 43-45.) Dr. Greenberg noted that a variety of hazardous materials are proposed for storage and use during the construction of the project and for routine plant operation and maintenance, as described in the AFC in Tables 8.5-3 and 8.5-6. Most of these hazardous materials are stored in smaller quantities, such as mineral and lubricating oils, corrosion inhibitors and water conditioners. These materials pose no significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, and/or their environmental mobility. Large quantities of

aqueous ammonia (28% solution), sulfuric acid, sodium hypochlorite, and sodium hydroxide will be stored on-site. Of these, only aqueous ammonia has sufficient vapor pressure to potentially cause off-site impacts. Although no natural gas is stored at the site, the project will involve the construction and operation of a natural gas pipeline and handling of large amounts of natural gas (Ex. 2, p. 4.4-4).

SCR is proposed to reduce NOx emissions to meet the BAAQMD's air quality permit requirements. The project's use of aqueous ammonia, rather than the more hazardous anhydrous form, eliminates the high internal energy associated with the more lethal anhydrous ammonia, which is stored as a liquefied gas at elevated pressure (Ex. 2, p. 4.4-4).

Additionally, the accidental mixing of sodium hypochlorite with acids or aqueous ammonia could result in toxic gases. Given the volumes of both aqueous ammonia (12,000 gallons) and sodium hypochlorite (5,000 gallons) proposed for storage at this facility, the chances for accidental mixing of the two—particularly during transfer from delivery vehicles to storage tanks—should be reduced as much as possible. Thus, measures to prevent such mixing are extremely important and will be required as an additional section within a Safety Management Plan for delivery of aqueous ammonia (see Condition of Certification HAZ-3) (Ex. 2, p. 4.4-4).

Approximately 5,000 pounds of 93 percent sulfuric acid will be used and stored on-site. This material does not pose a risk of off-site impacts, because it has relatively low vapor pressures and thus spills would be confined to the site. However, in order to protect against risk of fire, an additional Condition of Certification (see HAZ-5) will require the project owner to ensure that no combustible or flammable material is stored, used, or transported within 100 feet of the sulfuric acid tank (Ex. 2, p. 4.4-4).

Dr. Greenberg found that, in response to Health and Safety Code, section 25531 et seq., the Applicant may be required to develop a Risk Management Plan (RMP). If an RMP is required it will be submitted to the Environmental Protection Agency (EPA), the City of Hayward Fire Department, and Staff for evaluation prior to ammonia delivery to the RCEC. There is also a Condition of Certification that requires the City of Hayward Fire Department's acceptance of the RMP and Staff's approval of the RMP prior to delivery of aqueous ammonia to the facility. With adoption of the Conditions of Certification, the project will also comply with Health and Safety Code, section 41700, and it will not pose any potential for significant impacts to the public from hazardous materials releases (Ex. 1, p. 4.4-9).

Staff's evaluation of the proposed project (with Staff's proposed mitigation measures) indicates that with the proposed Conditions of Certification, hazardous materials use at the project will pose no potential for significant impacts on the public. With adoption of the proposed Conditions of Certification, the proposed project will comply with all applicable LORS.

Public Comment

Ms. Barbara George, representing WEM, stated that she did not believe Staff had analyzed the hazards of using natural gas at the project. She acknowledged, however, that she had not read the FSA. (RT 47.) In response, Staff Project Manager Jack Caswell reviewed the discussion contained in the FSA of the risks and hazards posed by the use of natural gas, including catastrophic releases. In response to Ms. George's question about liquified natural gas (LNG), Mr. Caswell noted that the project was proposed to use only natural gas as a fuel and if granted a permit, would be limited to natural gas.

FINDINGS AND CONCLUSIONS

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

1. The RCEC will use hazardous materials at the facility.
2. Aqueous ammonia, natural gas, and small amounts of solvents and paint are hazardous materials that will be used by the project and have the potential to create public health and safety hazards.
3. The principal types of potential public health and safety hazards associated with the hazardous materials noted in Finding 2 above are the accidental release of ammonia gas and fire and explosion from natural gas.
4. The Conditions of Certification set forth below require safety and mitigation measures, which will reduce project-related risks to acceptable levels both on and off the project site.
5. The project owner's design and mitigation measures will reduce to acceptable levels the possibility of dangerous events associated with the hazardous materials proposed for use at the project.
6. The RCEC will not create a risk, nor contribute to a cumulative risk, to public health and safety.
7. With the implementation of the Conditions of Certification, the project will conform with applicable laws, ordinances, regulations, and standards relating to hazardous materials management that are specified in Appendix A of this Decision.

We therefore conclude that the hazardous materials used at the RCEC will not create or contribute to any significant adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material in any quantity or strength not listed in AFC Tables 8.5-3 and 8.5-6 unless approved in advance by the CPM.

Verification: The project owner shall provide to the (CPM), in the Annual Compliance Report, a list of all hazardous materials contained at the facility.

HAZ-2[8] The project owner shall provide a Risk Management Plan RMP and a Hazardous Materials Business Plan HMBP (that shall include the proposed

[8] RT 41-45 document the Staff's discussion with the Applicant on this matter.

building chemical inventory as per the UFC) to the City of Hayward Fire Department and the CPM for review at the time the RMP plan is first submitted to the U.S. Environmental Protection Agency (EPA). The project owner shall include all recommendations of the City of Hayward Fire Department and the CPM in the final documents. A copy of the final plans, including all comments, shall be provided to the City of Hayward and the CPM once EPA approves the RMP.

Verification: At least 60 days prior to construction of hazardous materials storage facilities and control systems, the project owner shall provide the final plans (RMP and HMBP) listed above and accepted by the City of Hayward to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan (SMP) for delivery of ammonia. 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 sixty days prior to the delivery of aqueous ammonia to the ammonia storage tanks, the project owner shall provide a safety management plan as described above 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 the storage volume.

Verification: At least sixty days prior to delivery of aqueous ammonia to the storage tanks, the project owner shall submit final design drawings and specifications for the ammonia storage tank, the secondary containment basin, and the secondary containment building to the CPM for review and approval.

HAZ-5 The project owner shall ensure that no combustible or flammable material is stored, used, or transported within 100 feet of the sulfuric acid tank.

Verification: At least sixty (60) days prior to receipt of sulfuric acid on-site, the project owner shall provide to the CPM for review and approval copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any combustible or flammable material and the route by which such materials will be transported through the facility.

HAZ-6 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles, which meet or exceed the specifications of DOT Code MC-307.

Verification: At least sixty (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-7 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (SR92 to Clawiter to Enterprise to the facility).

Verification: At least 60 days prior to receipt 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.

HAZ-8 The project owner shall require that the gas pipeline undergo a complete design review and detailed inspection every 30 years and each 5 years thereafter.

Verification: At least thirty days prior to the initial flow of gas in the pipeline, the project owner shall provide a detailed plan to accomplish a full and comprehensive pipeline design review to the CPM for review and approval. This plan shall be amended, as appropriate, and submitted to the CPM for review and approval, not later than one year before the plan is implemented.

HAZ-9 After any significant seismic event in the area where surface rupture occurs within one mile of the pipeline, the gas pipeline shall be inspected by the project owner.

Verification: At least thirty days prior to the initial flow of gas in the pipeline, the project owner shall provide to the CPM a detailed plan to accomplish a full and comprehensive pipeline inspection in the event of an earthquake for review and approval. This plan shall be amended, as appropriate, and submitted to the CPM for review and approval, at least every five years.

HAZ-10 The natural gas pipeline shall be designed to meet CPUC General Order 112-D&E and 58 A standards, or any successor standards, and will be designed to meet Class III service. The pipeline will be designed to withstand seismic stresses and will be leak surveyed annually for leakage. The project owner shall incorporate the following safety features into the design and operation of the natural gas pipeline: (1) butt welds will be x-rayed and the

pipeline will be pressure tested prior to the introduction of natural gas into the line; (2) the pipeline will be surveyed for leakage annually; (3) the pipeline route will be marked to prevent rupture by heavy equipment excavating in the area; and (4) valves will be installed to isolate the line if a leak occurs.

Verification: Prior to the introduction of natural gas into the pipeline, the project owner shall submit design and operation specifications of the pipelines to the CPM for review and approval.

D. WORKER SAFETY/FIRE PROTECTION

The purpose of this analysis is to assess the adequacy of worker safety and fire protection measures proposed by the Applicant for the RCEC. Specifically, we must assess whether the Applicant has proposed adequate measures to:

- comply with applicable safety laws, ordinances, regulations, and standards;
- protect the workers during construction and operation of the facility;
- protect against fire; and
- provide adequate emergency response procedures.

SUMMARY OF THE EVIDENCE

Applicant's testimony on worker safety and fire protection was prepared by W. Douglas Urry. (Ex. 2, p. 74 to 77; RT74-75.) Mr. Urry's testimony incorporated the AFC's detailed analysis of worker safety and fire protection aspects of the proposed project (Ex. 8, Section 8.16). He concluded that the project will comply with all LORS applicable in this area and that with the Conditions of Certification proposed by Staff, the project will not have any significant adverse impacts upon the environment, on project workers, or on local fire protection services (Ex. 2, pp. 74-75).

The Applicant's testimony also included refined air dispersion modeling and health risk assessment of construction worker exposure to PM_{10} from diesel engine exhaust sources. This analysis indicated that a construction worker's worst-case annual average diesel PM_{10} exposure level would be 2.73 micrograms per cubic meter. The associated cancer risk for the construction worker diesel exposure scenario is 5.55×10^6, which is below the significance level for on-site cancer risk exposure of 10.0×10^6 (Ex. 3, pp. 18-19).

The analysis of the Staff was conducted by Alvin Greenberg, who presented the analysis in his testimony. (Ex. 1, pp. 4.14-1 to 4.14-13; RT 76-80.) Staff has determined that the features of the proposed project, in association with the proposed worker safety plans and procedures, will comply with applicable LORS and minimize the exposure of workers to industrial accidents or hazards.

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 would have to be provided by the City Of Hayward Fire Department.

The information in the AFC indicates that the project intends to meet the minimum fire protection and suppression requirements. Elements include both fixed and portable fire extinguishing systems. A carbon dioxide fire protection system (FM200) will be provided for the combustion turbine and accessory equipment. Fire detection sensors will also be installed. The on-site fire suppression system is designed and operated in accordance with National Fire Protection Association standards and guidelines. Fire hydrants and hose stations will be connected to the existing City of Hayward system already in operation. A back-up diesel fuel-powered water pump will be used in the event the main fire water pump loses power. The plant fire mains will also provide water for the aqueous ammonia storage area vapor suppression system. In addition to the fixed fire protection system, smoke detectors, combustible gas detectors, and portable extinguishers will be located throughout the plant with size, rating, and spacing in accordance with the Uniform Fire Code (Ex. 1, p. 4.14-11).

The Applicant will be required to provide a final Fire Protection and Prevention Program to Staff and to the City of Hayward Fire Department, prior to construction and operation of the project, to confirm the adequacy of the proposed fire protection measures (Ex. 1, p. 4.14-11).

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record and with implementation of the Conditions of Certification that follow, we find as follows:

1. The RCEC will be designed, constructed, and operated in a manner sufficient to reasonably protect workers and the public from fire dangers.
2. The existing health and safety policies in effect at the project include provisions for ongoing operation, including incidental construction.
3. Local fire and emergency service resources will be adequate to meet the needs of the project.
4. The project will not cause adverse impacts to existing fire and emergency service resources.
5. Assuming compliance with the Conditions of Certification contained in this Decision, the project will comply with the laws, ordinances, regulation and standards intended to protect worker health and safety and identified in **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance project Manager (CPM) a copy of the project Construction Safety and Health Program containing the following:

- A Construction Safety Program;
- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Emergency Action Plan; and
- A 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 Hayward 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 Injury and Illness Prevention Program. The project owner shall provide a letter from the City of Hayward Fire Department stating that they have reviewed and commented on the Construction the Construction Fire Protection and Prevention Plan and the 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:

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- Hazardous Materials Management Program;
- Operations and Maintenance Safety Program;
- Fire Protection and Prevention Program (8 CCR § 3221); and;
- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the Cal/OSHA Consultation Service, 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 Hayward Fire Department for review and comment.

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM a copy of the project Operations and Maintenance Safety & Health Program.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

In this section, we address analyses of potential impacts to biological resources from the RCEC. The analysis is primarily directed toward impacts to state and federally listed species, species of special concern, wetlands, and other areas of critical biological concern. The Commission reviews information regarding the affected biotic community, the potential environmental impacts associated with the construction and operation of the proposed project, and where necessary, specifies mitigation planning and compensation measures to reduce potential impacts to non-significant levels. We also determine compliance with applicable laws, ordinances, regulations and standards, and specify Conditions of Certification.

SUMMARY OF THE EVIDENCE

To support Applicant's position, biologist Brett Hartman testified regarding the impacts the project could have upon biological resources. (Ex. 2, pp. 22-25; RT 196-202.) He directed the reconnaissance-level field inspections and the technical research for the biological studies associated with the project (Ex. 8, Section 8.2 of the AFC, Ex. 2, pp. 12-21), and prepared a Biological Assessment (Ex. 16) and mitigation plans and proposals (Exhibits 17, 18, 20, 23, and 24).

The analysis carried out by Staff experts is based, in part, on information provided from Applicant's AFC and also on workshops, responses to Staff data requests and Applicant's responses, site visits, project description clarifications and discussions with various state and federal agency representatives. The Staff witnesses, Mr. Stuart Itoga and Mr. Richard York, noted in their testimony (Ex. 1, Section 4.2; RT 212-215.) that the proposed project will be built on two lots, one recently used for painting and sand blasting, and the other an open field in which

radio broadcast towers are located. Topography on the site is flat with elevations ranging between 5 and 10 feet above sea level. The proposed project site is bordered by industrial land uses to the immediate west, east, and north. To the south is an open space area occupied by diked seasonal wetlands and former salt marshes, known as the Hayward Shoreline area. Habitat types within a one-mile radius around the proposed project site include: ruderal (weedy), horticultural, coastal salt marsh, brackish sloughs, emergent and brackish/freshwater marshes, annual grasslands and mud flats.

Primary concerns associated with construction and operation of the proposed RCEC are the project's potential impacts to habitat and the following sensitive species:

- Salt marsh harvest mouse, federally and state listed endangered.
- California clapper rail, federally and state listed endangered.
- California least tern, federally and state listed endangered.
- Western snowy plover, federally listed threatened and state Species of Special Concern.

The Staff's witnesses state that the Applicant has proposed measures to mitigate potentially significant impacts to listed species and wildlife habitat. Staff agrees with regulatory agencies including the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), U.S. Army Corp of Engineers (USACE), U.S. Environmental Protection Agency (EPA) and the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) that measures proposed by Applicant would mitigate potentially adverse impacts to levels less than significant (Ex. 1, p. 4.2-7).

Wetlands

The proposed project would fill approximately 1.7 acres of jurisdictional wetlands. To mitigate the fill of 1.7 acres of seasonal freshwater wetlands, Applicant has proposed a Wetland Mitigation Plan (Ex. 18). This plan includes creation,

preservation, and enhancement components. A key aspect of the plan is the purchase of an adjacent parcel for mitigation. The Applicant would donate this property to a responsible habitat management agency, the East Bay Regional Park District (EBRPD), and would create an endowment fund for the EBRPD to manage the mitigation property in perpetuity as a wetland and wildlife habitat preserve. Exhibit 7 describes the terms of Applicant's agreement with the EBRPD in detail. (Ex. 1, pp. 4.2-10 to –12; RT 195-196.)

The no-net-loss of wetlands policy, enforced by the SFRWQCB and USACE, required that Applicant create replacement wetlands to mitigate wetland fill associated with the proposed project. To comply with the no-net-loss policy, Applicant proposed creation of approximately 1.05 acres of freshwater wetlands and approximately 0.72 acres of salt-water wetlands. Applicant's proposal to create approximately 1.8 acres of wetlands was considered adequate mitigation by the Staff and key regulatory agencies for fill of freshwater wetlands on the proposed project site. The basic components of the plan are:

- Enhance tidal action;
- Create fresh and salt water wetlands;
- Enhance upland habitats; and
- Preserve wetland and upland habitats.

The parcel, which is immediately adjacent to the southwest border of the proposed project, is an important part of the local wetland ecosystem and is directly and indirectly connected to a variety of former salt ponds and wetlands along the Hayward Shoreline. The local wetland ecosystem is intensely managed for sensitive species (Ex. 1, pp. 4.2-10 to -12).

Staff, USACE, CDFG, USFWS, SFRWQCB and USEPA have reviewed the plan and agree with its overall concept. While overall strategy is generally supported by results of Applicant's modeling analysis, actual modeling analysis and specific construction details have not yet been submitted. Staff's approval of the final

plan will be in the form of a letter to Applicant. Federal agency approval of the final plan will be in the form of a Biological Opinion from USFWS and 401 and 404 permits from the SFRWQCB and USACE respectively (Ex. 1, p. 4.2-7).

Permanent and Temporary Habitat Loss

Applicant conducted sensitive species surveys for the proposed project site and for a one-mile radius around it. The Staff has testified that the proposed power plant site is utilized by a variety of wildlife, and nearby open-space areas are used by a variety of sensitive nesting species. Construction of the proposed RCEC will displace wildlife species from the wetland and grassland habitats on the project site. Staff also indicated that construction of the proposed project will eliminate habitat available to species in nearby wetland areas. Construction of the proposed RCEC will result in the permanent loss of approximately 9.4 acres of annual grassland and approximately 1.7 acres of jurisdictional wetlands (Ex. 1, p. 4.2-15).

Applicant will expand PG&E's East Shore Substation by approximately two acres to accommodate the electrical input from the RCEC. The land proposed for substation expansion supports ruderal vegetation and is currently undeveloped, but is capable of supporting burrowing owls (Ex. 1, p. 4.2-15).

In addition to permanent habitat loss, Applicant proposes a 10-acre construction laydown/worker parking area to be located on open land south of PG&E's East Shore Substation. Use of this area for worker parking and construction laydown will cause a temporary disturbance to the proposed area. As with the substation expansion, Staff considers the open land around the substation as burrowing owl habitat (Ex. 1, p. 4.2-16).

To compensate for the permanent loss of 9.4 acres of annual grassland, 1.7 acres of seasonal freshwater wetlands, 2 acres of ruderal vegetation, and the temporary loss of 10 acres of ruderal habitat, Applicant has proposed:

- The purchase of 26.19 acres of upland, seasonal freshwater wetland, and salt marsh habitat adjacent to the proposed RCEC site;
- Donation of the 26.19 acres of habitat to EBRPD;
- Assistance in negotiating a minimal cost, long-term lease with the City of Hayward for 30 acres of wetlands located between the parcel and the Salt Marsh Harvest Mouse Preserve;
- An endowment to be provided to EBRPD for managing the compensation parcel in perpetuity (Ex. 1, p. 4.2-16).

It is Staff's opinion that the proposed parcel will contribute to preserving and enhancing the coastal salt-marsh ecosystem in the proposed project area. In addition, Applicant's proposals for creation and enhancement on the parcel would benefit the long-term management goals of the Hayward Area Recreation and Park District (HARD) and EBRPD. Staff concludes that Applicant's proposed habitat compensation would reduce adverse temporary and permanent habitat losses associated with construction and operation of the proposed RCEC to levels less than significant. Applicant will need to obtain a Biological Opinion from the USFWS regarding this issue (Ex. 1, p. 4.2-16).

Predator Perching

The Staff witness indicated a concern that the proposed architectural screening treatment and changes to the existing landscape could provide additional nest, perch and roost sites for avian predators (e.g. red-tail hawk, crows, ravens) of sensitive species currently found in the proposed project area. To address these concerns Applicant has proposed the following mitigation measures (Ex. 17, 24):

- All potential raptor perches on project infrastructure will be fitted with NIXALITE® or similar perch deterrent device, a perch deterrent monitoring program will be implemented and an adaptive management plan will be developed concurrent with perch deterrent monitoring.
- Landscaping at the project site will be limited to trees that discourage raptor perching. Tree species will be selected from a list provided by the USFWS.

- All new towers associated with the transmission line will be of non-lattice, single-pole construction.

It is Staff's opinion that installation of perch deterrent devices on project infrastructure, and planting trees that are not capable of supporting perching raptors/corvids, should help reduce the number of potentially available perch sites provided by the proposed project. Staff concludes that deterrent devices, use of tree species recommended by the USFWS, perch deterrent monitoring and an adaptive management plan should reduce potential predation of sensitive species by raptors/corvids to levels less than significant. However, to complete formal consultation between the USEPA and the USFWS, and obtain a Biological Opinion from USFWS, Applicant will need to submit to USFWS, a complete project description, including the final predator perch deterrent and monitoring plan. After the document is reviewed and approved, formal consultation can be completed and a Biological Opinion can be issued by the USFWS (Conditions of Certification BIO- 6 and BIO- 14) (Ex. 1, p. 4.2-9).

Construction Noise

Staff testimony indicates a concern that construction impacts, particularly noise, could directly impact sensitive species breeding areas and wildlife using the surrounding areas. The USFWS has also raised this concern. Applicant estimates noise levels from pile driving and steam blow activities will range from 106 decibels (dBA) @ 50 feet to 65 dBA @ 1.02 miles (Ex. 24). Sensitive nesting species within a one-mile radius of the proposed project site could be exposed to noise levels above 60 dBA. A general rule for estimating noise levels at increasing distances is to decrease the noise level by 6 dBA as the distance is doubled, according to Staff testimony (Ex. 1, p. 4.2-11). Applying this to the pile driving and steam blow activities provides estimated noise levels of 100 dBA @ 100 feet, 76 dBA @ 1,600 feet (> ¼ mile) and 70 dBA @ 3,200 feet (> ½ mile) respectively. Noise disturbances from construction activities during the mating and nesting season may have an adverse effect on formation of pair bonds

and/or reproductive success of sensitive species in the project area; furthermore, construction-related disturbances could discourage habitat use by wildlife (Ex. 1, p. 4.2-13).

The Applicant proposes to use an enclosure dampening method to reduce pile-driving noise to 70 dBA or less at a distance of approximately 262 feet (80 meters) (Ex. 24.) Pile-driving noise levels of 70 dBA at 262 feet (80 meters) or 73 dBA at 262 feet (80 meters) would result in noise levels of 58 dBA and 61 dBA at 1,048 feet respectively. Staff agrees that this method would reduce pile driving noise impacts on wildlife below the significance level (Ex. 1, p. 4.2-14).

To mitigate steam blow noise, Applicant has proposed use of low-pressure steam blow. Staff has proposed a Condition of Certification (NOISE-4) allowing a high-pressure steam blow only if high-pressure steam blow noise does not exceed 86 dBA at a distance of 50 feet. Steam blow noise levels of 86 dBA at 50 feet would result in steam blow noise levels of approximately 62 dBA at 800 feet. The proposed mitigation measures would result in pile driving and steam blow noise levels below 60 dBA at the closest breeding habitat for sensitive species (approximately one-quarter mile from the proposed project footprint). Staff agrees that this would reduce adverse effects on wildlife from steam blow noise to a level below the level of significance (Ex. 1, p. 4.2-13).

Operational Noise

Operational noise was projected as 69 dBA at the perimeters of the proposed project. Staff's witness indicated concern regarding the potentially adverse operational noise impacts to the upland area adjacent to the southwest border of the proposed project site. Because this upland area is considered a salt-marsh harvest mouse refugium, Staff was concerned that noise from proposed project operation would increase background noise levels, making it more difficult for the salt-marsh harvest mouse, and other wildlife, to detect predators (Ex. 1, p. 4.2-13).

Applicant monitored noise levels near this location over a 25-hour period from January 28 to January 29, 2002 (Ex. 21). Based on this information, Applicant projected operational noise at the southwest boundary of the proposed site as 60.5 dBA. Staff agrees with the Applicant that there would be no adverse operational noise impacts to wildlife at the projected level (Ex. 1, p. 4.2-14 and -15).

Bird Electrocution or Collisions with Transmission Lines

Staff has testified that the close proximity of the proposed project to sensitive biological resource/open-space areas combined with diverse communities of avian species create the potential for direct impacts to birds through electrocution or collisions with transmission lines/towers, architectural screening, cooling towers and boiler and exhaust stacks. During storms, birds may be attracted to the power plant by artificial night lighting thereby increasing the risk of collisions with various power plant facilities (Ex. 1, p. 4.2-16).

Birds can be electrocuted when they simultaneously contact two conductors of different phases or contact a conductor and a ground. State standards require minimum distances between conductors, and therefore make it highly unlikely that even very large birds (hawks, eagles, etc.) would contact different phases or contact a conductor and a ground. Staff concludes that the proposed RCEC transmission lines will not pose a significant electrocution hazard to birds in the project area (Ex. 1, p. 4.2-116 and -17).

Collisions with transmission lines have also been documented as a source of bird mortality. Commonly associated with migratory birds, collisions are likely to occur during periods of darkness or inclement weather, and usually occur when birds impact overhead ground wires. Staff has testified that because of the large numbers of migratory birds in the proposed project area, the overhead ground wire(s) associated with the project could pose a significant collision hazard (Ex. 1, p. 4.2-17).

To minimize the potential for bird collisions with ground wires, Applicant has proposed the use of bird flight deterrents, such as streamers (Ex. 8, Section 8.2). Staff agrees with Applicant that installation of bird flight diverters on transmission line overhead ground wires would reduce the risk of collision to levels less than significant (Condition BIO-13) (Ex. 1, p. 4.2-17).

Stormwater Runoff

The Staff witnesses and some regulatory agencies have expressed concerns about the project's potential impacts to adjacent sensitive areas due to its stormwater runoff. The EBRPD's freshwater marsh and the adjacent Salt Marsh Harvest Mouse Preserve, which are hydrologically connected to the Alameda County Flood Control Channel, are of particular concern (Ex. 1, p. 4.2-9).

Applicant is currently preparing a Storm Water Management Plan. As part of the proposed plan, water discharge following storm events will be coordinated with the management of the HARD Marsh and the Salt Marsh Harvest Mouse Preserve to ensure discharge does not occur when salt water is being introduced into the marshes. Staff concludes that implementation of the Stormwater Management Plan as approved by all concerned agencies, and Conditions of Certification BIO-9 and SOIL AND WATER-3, will reduce potential wetland impacts to levels less than significant (Ex. 1, p. 4.2-9).

San Francisco Bay Water Quality

Staff's witnesses indicated a concern that the proposed project could affect shallow water habitat in San Francisco Bay. The project will share an existing effluent discharge pipe with the City of Hayward Water Pollution Control Facility (WPCF). The effluent from this pipe is discharged through the East Bay Dischargers Authority (EBDA) pipeline to the EBDA outfall in San Francisco Bay. The EBDA pipeline is shared by a number of users including the cities of

Hayward, Fremont, Union City, Newark, San Leandro and Livermore (Ex. 1, p. 4.2-10).

The temperature of the cooling tower wastewater when it leaves the RCEC is projected to be between 85 and 100 degrees Fahrenheit (Ex. 16, p. 19). The cooling tower wastewater from the RCEC will combine with large volumes of existing effluent from the WPCF and EBDA pipeline before discharge at the EBDA outfall approximately 12 miles from the RCEC. The dilution of RCEC wastewater with existing effluent and the distance traversed before discharge will provide sufficient cooling before discharge to the bay. Staff agrees with the Applicant that wastewater from the proposed RCEC will not have significant impact on the water quality of shallow water habitats in the vicinity of the effluent outfall (Ex. 1, p. 4.2-10).

Public Comment

Janice DelFino offered comments as the Co-chair of the Citizens Advisory Committee to the Hayward Area Shoreline Planning Agency (HASPA). (RT 218.) She wanted to be sure that biological mitigation efforts of the RCEC would be coordinated with similar shoreline marsh restoration and enhancement projects being carried out by HARD. Larry Tong of the EBRPD assured her that the EBRPD operations staff is coordinating with the HARD staff on the restoration project. (RT 225.) Howard Beckman expressed concern about project-related operational noise impacts to wildlife. In his opinion the Staff determination of no significant impacts regarding this matter is without support. (RT 227 - 229.) In addition, Mr. Beckman comments that Condition of Certification BIO-12 should contain a clear mandate to mitigate for effects of operational plant noise on wildlife, such as requiring long-term field studies of the effects. However, the Commission does not believe such studies are justified based on the project's compliance with applicable LORS and the lack of substantial evidence that project operational noise levels, estimated to be no greater than 60.5dBA, will harm wildlife. The Staff's impact analysis, set forth on pages 4.2-13 through 4.2-

15 of the FSA, reviews the available evidence. Staff biologists concluded that the project will have no significant environmental impact to wildlife from operational noise. No substantial evidence of such an impact was offered by any other party. Therefore, the Commission will not modify the language of Condition of Certification BIO-12.

Viola Saima-Barklow expressed the gratitude of the HASPA Citizens Advisory Committee to the staff of the EBRPD for their major contributions to this siting process. She noted that project-related mitigation will help preserve local wetland habitat and be a major step toward accomplishing HASPA goals along the Bay shoreline. (RT 230.) Sheila Junge stated her concern that all required biological mitigation be completed prior to the beginning of project construction. (RT 232.) Barbara George of WEM also expressed concerns that mitigation be carried out accurately and completely. She believes Applicant should have provided more money and marshland as mitigation for the project. (RT 237.)

Conclusions

Applicant has proposed measures to mitigate impacts identified as potentially significant. It is Staff's opinion that implementation of the proposed mitigation measures would reduce potential impacts associated with the proposed project to levels less than significant. Staff indicates that, although a wetlands mitigation plan proposed by Applicant appears sound, specific details concerning actions necessary to achieve desired objectives still need to be finalized. This information must be received and reviewed by the USFWS, USACE and SFRWQCB before these agencies can issue a Biological Opinion, a 404 permit and a 401 permit respectively. The Commission has imposed Conditions of Certification that would insure the project owner demonstrate compliance with all applicable LORS prior to any site mobilization activities. We conclude that if the project is constructed and operated in compliance with all applicable LORS and Energy Commission Biological Resources Conditions of

Certification, the proposed RCEC would not adversely impact biological resources in the proposed project area (Ex. 2, p. 4.2-23 and -24).

FINDINGS AND CONCLUSIONS

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

1. The project will not impose significant adverse effects on any protected species.
2. The measures specified in the Conditions of Certification will adequately mitigate the potential direct, indirect, and cumulative adverse effects of the Russell City Energy Center upon biological resources to below a level of significance.
3. The Applicant's wetland mitigation plan would be adequate to mitigate the fill of 1.68 acres of jurisdictional wetlands. The Applicant, however, must obtain permits relating to wetland fill from the U.S. Army Corps of Engineers and the San Francisco Bay Regional Water Quality Control Board. Furthermore, because construction related activities associated with mitigating wetland fill would occur in sensitive species habitat, Applicant must also obtain a Biological Opinion from the U.S. Fish and Wildlife Service.
4. The Applicant's habitat mitigation plan is adequate to compensate for the permanent loss of 9.4 acres of annual grassland, 1.7 acres of seasonal freshwater wetlands, 2 acres of ruderal vegetation, and the temporary loss of 10 acres of ruderal habitat.
5. The Applicant proposes to install bird perch deterrent devices on project surfaces to deter avian predator perching. Applicant will also limit landscaping trees to species that discourage avian predator perching. The Adaptive Management Plan will outline contingent measures to be implemented should the proposed perch deterent devices and landscaping prove ineffective. These measures will be sufficient to protect sensitive species in habitat near the project site.
6. The Applicant will use an enclosure dampening method to reduce pile-driving noises to below the level that would cause significant impacts to wildlife.
7. To mitigate the noise from pipe steam blows, the Applicant will use a low-pressure steam blow or other method that will reduce steam blowing noises to below the level that would cause significant impacts to wildlife.

8. With noise abatement measures proposed, the project's operational noise levels would not cause a significant adverse effect to wildlife.
9. The Applicant will install bird flight diverting equipment on the ground wire of the project's new transmission line. This will reduce the potential for bird collisions to a level below significance.
10. The Applicant's stormwater management plans will establish coordinated stormwater discharge with the HARD Marsh and Salt Marsh Harvest Mouse Preserve. This will reduce the potential for impacts to these wetlands from stormwater runoff to less than significant.
11. Cooling tower wastewater will combine with effluent from the City of Hayward Water Pollution Control Facility and will be discharged through the East Bay Dischargers Authority outfall, several miles from the project site. This wastewater will not have a significant adverse effect on the water quality or temperature of San Francisco Bay.
12. With the implementation of the mitigation measures, the project will conform with all applicable laws, ordinances, regulations, and standards governing biological resources.

The Energy Commission therefore concludes that implementation of the Conditions of Certification below will ensure that construction and operation of the RCEC Power 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 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 is 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; and
3. At least one year of field experience with biological resources found in or the project area.

If a Designated Biologist needs to be replaced, then 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 Designated Biologist 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/Operation Manager, supervising construction and operations engineer 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.

Verification: The Designated Biologist shall maintain 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.

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 Designated Biologist must notify 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.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN

BIO-4 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and, once approved, shall implement the measures identified in the plan.

The BRMIMP shall identify:

1. All Biological Resource Conditions included in the Energy Commission's Final Decision;
2. A copy of the final, approved Perch Deterrent and Monitoring Plan. The final, approved plan will include detailed information regarding how nesting, perching/roosting of raptors and corvids (crows and ravens) will be discouraged. Also to be included are the final plans for monitoring the success of perch deterrents and the final adaptive management plan;
3. A copy of the final approved Storm Water Management Plan to be implemented so sensitive wetland habitats in the project area will not be impacted by the RCEC;
4. A list of all measures that will be implemented to mitigate the construction and operational noise impacts caused by the proposed RCEC;
5. A list and a map of locations of all sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;
6. A list of all terms and conditions set forth by the USACE Section 404 permit and state SFRWQCB 401 certification;
7. Detailed descriptions of all measures that will be implemented to avoid and/or minimize impacts to sensitive species and reduce habitat disturbance;
8. All locations, on a map of suitable scale, of areas requiring temporary protection and avoidance during construction;
9. Aerial photographs (scale 1:200) of all areas to be disturbed during construction activities-one set prior to site disturbance and one set after project construction. Include planned timing of aerial photography and a description of why times were chosen;
10. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
11. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

12. All performance standards and remedial measures to be implemented if performance standards are not met;
13. A discussion of biological resource-related facility closure measures;
14. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval;
15. A copy of the USFWS Biological Opinion, and incorporation of all terms and conditions into the final BRMIMP;
16. A discussion of bird flight diverters and how they will be installed, replaced and maintained during the life of the project;
17. Written verification that the required habitat compensation has been purchased and a suitable endowment has been provided to manage the habitat compensation acreage in perpetuity;
18. A copy of the final construction noise mitigation plan;
19. A copy of the final Wetland Mitigation Plan including results of the hydrological modeling analysis and final plans for dredging and levee removal and reduction; and
20. A letter from EBRPD verifying that the endowment provided by the project owner is sufficiently large to fund, for the life of the project, a predator management program.

Verification: At least 30 days prior to start of any site mobilization activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plan's acceptability. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which mitigation and monitoring plan items are still outstanding.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.

The Worker Environmental Awareness Program must:

1. Be developed by 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; and
5. Identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and keep record of all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM 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 the duration of their employment and for six months after their termination.

USFWS BIOLOGICAL OPINION

BIO-6 Formal consultation between the USFWS and USEPA shall be completed, and the project owner shall implement all terms and conditions of the resulting Biological Opinion.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner must provide the Energy Commission CPM with a copy of the USFWS Biological Opinion. All terms and conditions of the Biological

Opinion will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

U. S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT

BIO-7 The project owner shall acquire and implement the terms and conditions of the USACE Section 404 permit.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner shall submit to the CPM a copy of the permit required to fill on-site wetlands. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD CERTIFICATION

BIO-8 The project owner will acquire and implement the terms and conditions of a San Francisco Bay Regional Water Quality Control Board Section 401 State Clean Water Act certification.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner will provide the CPM with a copy of the final Regional Water Quality Control Board certification. The terms and conditions of the certification will be incorporated into the project's Biological Resources Mitigation Implementation and Monitoring Plan.

STORM WATER MANAGEMENT PLAN

BIO-9 The project owner shall develop a RCEC Storm Water Management Plan in consultation with the U.S. Fish and Wildlife Service, East Bay Regional Parks District, Hayward Area Parks and Recreation District, San Francisco Bay Regional Water Quality Control Board, City of Hayward Public Works Department, Alameda County Flood Control District and Staff.

Verification: The project owner will submit to the CPM a Storm Water Management Plan at least 60 (sixty) days prior to the start of any site mobilization activities (See Soil and Water Resources, Condition of Certification **Soil & Water-3**). The final approved plan will also be contained in the RCEC Biological Resources Mitigation Implementation and Monitoring Plan.

HABITAT COMPENSATION

BIO-10 The project owner shall provide 26.19 acres of habitat to compensate for the loss of upland, freshwater seasonal wetlands. To mitigate the permanent and temporary loss of habitat, the project owner shall:

1. Purchase 26.19 acres of habitat adjacent to the proposed RCEC site;
2. Donate the 26.19 acres of habitat to the East Bay Regional Park District ("EBRPD");
3. Assist in arranging a long-term lease to the EBRPD for 30 acres of salt marsh habitat owned by the City of Hayward;
4. Provide a suitable endowment fund to the EBRPD to manage the proposed habitat compensation and the City of Hayward property in perpetuity;
5. Implement the terms of the Agreement between EBRPD and the Russell City Energy Center LLC, to the extent such terms are consistent with the terms and conditions of this decision; and
6. Record, with the deed to the 26.19 acres of habitat compensation, an appropriate instrument containing such covenants as will benefit EBRPD and restrict use of the land as an enhanced wetland consistent with the terms and conditions of this decision. Such restriction shall be for the duration of the enhancement and monitoring activities specified in Section 1.2 of the Agreement between EBRPD and the Russell City Energy Center LLC.

Verification:

1. No less than 30 days prior to any site mobilization activities, the project owner shall provide written verification to the CPM that the required habitat compensation has been purchased and the restricting covenants recorded.

2. No more than 90 days after completion of the enhancement actions specified in Section 1.2 of the Agreement between the Russell City Energy Center LLC and the EBRPD, and their approval by the regulatory agencies, the project owner must provide written verification to the CPM that the Applicant has provided to the EBRPD a fee simple deed to the 26.19 acre parcel.

3. No less than 30 days prior to the start of construction of permanent structures, the project owner shall provide written verification to the CPM that the Applicant has paid to the EBRPD the first payment of $300,000. Thereafter, as each subsequent payment is made to the

EBRPD in accordance with the terms of the Agreement between RCEC and EBRPD, the project owner shall provide written verification to the CPM within 30 days after each payment is made.

4. BIO-10 is independent of, and is not intended to change, the contractual rights and obligations of the Agreement between RCEC and EBRPD.

FACILITY CLOSURE

BIO-11 The project owner will incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resource facility closure measures will also be incorporated into the project Biological Resources Mitigation Implementation and Monitoring Plan.

Verification: At least 12 months (or a mutually agreed upon time) prior to the commencement of closure activities, the project owner shall address all biological resource-related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan, and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

CONSTRUCTION AND OPERATIONAL NOISE LEVELS

BIO-12 The project owner will develop an approved construction noise mitigation plan that addresses how noise impacts to state and federally listed nesting and breeding sensitive vertebrate species will be minimized during construction.

The noise mitigation plan will discuss how pile-driving and HRSG steam blow noise will be mitigated. Regarding operational noise, the project owner shall provide written confirmation from EBRPD indicating that the habitat compensation endowment is sufficient to fund a predator management program for the life of the project. The final plan must be approved by the USFWS, CDFG, EBRPD, and Staff.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner will provide to the Energy Commission CPM with a copy of the final, agency approved construction and operational noise mitigation plan and a signed letter from EBRPD indicating that the endowment agreement is sufficiently large to fund a predator management program.

BIRD FLIGHT DIVERTERS

BIO-13 Bird flight diverters will be placed on all overhead ground wires associated with the RCEC power plant.

During construction of the RCEC transmission line, bird flight diverters will be installed to manufacturer's specification. The USFWS, CDFG, and Staff will provide final approval of the bird flight diverter to be installed. Staff recommends that the Swan Flight Diverter be given careful consideration when making a decision about which diverter is to be installed.

Verification: No less than 7 days prior to energizing the new RCEC transmission line, the project owner will provide photographic verification to the Energy Commission CPM that bird flight diverters have been installed to manufacturer's specifications. A discussion of how the bird flight diverters will be maintained during the life of the project will be included in the project's BRMIMP.

PERCH DETERRENT MANAGEMENT PLAN

BIO-14 The project owner shall provide a final, approved Perch Deterrent Management Plan.

The Perch Deterrent Management Plan shall:

1. Be approved by the USFWS, CDFG, EBRPD and Staff;
2. Identify how landscaping will deter perching, nesting/roosting of raptors and corvids;
3. Identify how the effectiveness of perch deterrents will be monitored and evaluated ; and
4. If needed, identify all measures to be implemented in the adaptive management plan, should monitoring indicate that perch deterrents are ineffective.

Verification: No less than 30 days prior to the start of any site mobilization activities, the project owner will provide to the Energy Commission CPM a final approved version of the Perch Deterrent Management Plan. The final Perch Deterrent Management Plan shall be included in the RCEC Biological Resources Mitigation Implementation and Monitoring Plan.

WETLAND MITIGATION PLAN

BIO-15 The project owner shall provide a final, approved Wetland Mitigation Plan.

The Wetland Mitigation Plan shall:

1. Be approved by USFWS, USACE, RWQCB, EPA, CDFG, EBRPD and Staff;
2. Identify the timing, locations and all measures to be implemented for creation, preservation and enhancement activities;
3. Include the hydrological modeling analysis and all construction drawings to be used in support of dredging and levee removal and reduction activities; and
4. Identify performance criteria to be used in evaluating effectiveness of wetland mitigation measures.

Verification: No less than 60 days prior to any ground disturbance activities, the project owner shall provide to the Energy Commission CPM a final, approved copy of the Wetland Mitigation Plan. The final Wetland Mitigation Plan shall be included in the RCEC Biological Resources Mitigation Implementation and Monitoring Plan.

B. 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 LORS.

SUMMARY OF THE EVIDENCE

Craig W. Rice testified on behalf of the Applicant, sponsoring section II—Soil and Water Resources of Exhibit 2 into evidence to support his conclusion that the project, with implementation of the Conditions of Certification included below, will comply with relevant LORS and will have no adverse impact on soil or water resources. (Ex. 2, pp. 52-53; RT 283-284.)

Staff witnesses Joe Crea, John Scroggs, Jim Henneforth, and John Kessler conducted the analysis for the Staff. (Ex. 1, pp. 4.13-1 through 4.13-24; RT 285-293.) They concluded that the RCEC will not contribute to any significant project-related impacts to soils resources. The primary water supply to the RCEC will be secondary effluent from the City of Hayward's WPCF located directly across the street from the proposed RCEC site. Use of recycled water is considered a beneficial use of this water source and will result in a net decrease in the quantity of wastewater discharged into San Francisco Bay. (Ex. 1, p. 4.13-13.) The City of Hayward's secondary effluent will be treated by the Applicant to qualify as tertiary effluent at the proposed AWT Plant under Title 22 standards. The AWT Plant facilities will primarily be located on about 2.5 acres of the RCEC site, except for the solids handling facilities, which will be located at the existing WPCF. Upon completion of construction of the AWT Plant, the City of Hayward

will own and operate the AWT Plant, which is being designed to be expandable in the future. The AWT Plant will be capable of supplying two grades of tertiary-effluent to future customers, one which has been disinfected and micro-filtered, and a finer grade that has been further purified by reverse osmosis as required for the RCEC operations. Potable water for domestic, firewater, and as a secondary backup for process and cooling supply to the project will be provided by the City of Hayward's domestic water supply. Use of potable quality water from the City of Hayward's domestic water supply will not adversely affect potable water supplies. (Ex. 1, p. 4-13-13.) The RCEC does not propose to use groundwater as a source of water supply. The use of recycled water will have no effect on groundwater supply, nor will its use cause any substantial depletion or degradation of local or regional surface water supplies, particularly fresh water. (Ex. 1, p. 4.13-12.)

PUBLIC COMMENT

Barbara George suggested that the water proposed for cooling use at the power plant could be used in ways other than power plant cooling and recommended that the project use dry cooling technology instead. (RT 293.)

FINDINGS AND CONCLUSIONS

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

1. The RCEC will cause a net decrease in the quantity of wastewater discharged into San Francisco Bay from about 13.3 to 9.5 mgd. (Ex. 1, p. 4.13-12.)
2. The combined wastewater discharge from the Advanced Water Treatment Plant and the Water Pollution Control Facility will be permitted under the existing NPDES Permit. (Ex. 1, p. 4.13-12.)
3. Soils in the project area are subject to wind and water erosion. (Ex. 1, p. 4.13-13.)
4. 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 contaminated stormwater offsite. (Ex. 1, p. 4.13-14.)

5. The project's compliance with existing and new permits will result in no significant water quality degradation. (Ex. 1, p. 4.13-16.)
6. Construction and operation of the project will not cause any significant or cumulative adverse impacts to soil and water resources. (Ex. 1, p. 4.13-18.)
7. Implementation of the Conditions of Certification will ensure that the project will conform to all applicable laws, ordinances, regulations, and standards related to soil and water resources. (Ex. 1, p. 4.13-21.)

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to soil or water resources, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

SOIL & WATER 1 Prior to beginning any site mobilization activities, the project owner shall obtain CPM approval for a Grading and Erosion Control Plan that addresses all project elements. The Grading and Erosion Plan shall include and be consistent with the standards normally required under the City of Hayward's Grading Permit. The plan shall be submitted to the CPM for approval and to the City of Hayward and County of Alameda for review and comment.

Verification: The Grading and Erosion Control Plan shall be submitted to the CPM for review and approval, and to the City of Hayward (Public Works Department) and Alameda County (Public Works Agency) for review and comment at least sixty days prior to start of any site mobilization activities. The CPM, via concurrence from local agencies, must approve the final Erosion Control Plan prior to the initiation of any site mobilization activities.

SOIL & WATER 2 The project owner shall submit a Notice of Intent for construction under the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity to the State Water Resources Control Board (SWRCB) and obtain CPM approval of the related Storm Water Pollution Prevention Plan (SWPPP) for Construction Activity prior to beginning site mobilization activities. The SWPPP will include final construction drainage design and specify BMP's for all on- and off-site RCEC project facilities.

Verification: At least 60 days prior to the start of any site mobilization, the SWPPP for Construction Activity and a copy of the Notice of Intent for construction under the General NPDES Permit for Discharges of Storm Water

Associated with Construction Activity filed with the RWQCB, shall be submitted to the CPM. Approval of the final plan by the CPM must be received prior to initiation of any site mobilization activities.

SOIL & WATER 3 The project owner shall submit a Notice of Intent for operating under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity to the State Water Resources Control Board (SWRCB), and obtain Energy Commission Staff approval prior to initiating project operation with review and comments from the San Francisco Regional Water Quality Control Board (SFBRWQCB) of the related Storm Water Pollution Prevention Plan (SWPPP) for Industrial Activity. The SWPPP will include final operating drainage design and specify BMP's and monitoring requirements for the RCEC project facilities. This includes final site drainage plans and locations of BMP's.

Verification: At least 60 days prior to the start of project construction, the SWPPP for Industrial Activity and a copy of the Notice of Intent for operating under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity filed with the RWQCB, shall be submitted to the CPM. Approval of the SWPPP plan by the CPM, with review and comment by the SFBRWQCB, must be received prior to initiation of project operation.

SOIL & WATER 4 The project owner shall use tertiary-treated water supplied from the City of Hayward's Advanced Water Treatment (AWT) Plant as its primary source for cooling and process water supply. Potable water may be used for cooling and process purposes only in the event of an unavoidable interruption of the AWT Plant supply, but not to exceed 45 days (1080 hours) in any one calendar year. However, potable water may be used for cooling and process purposes in excess of 45 days per calendar year if an unavoidable interruption of the AWT supply is due to an Act of God, a natural disaster, an unforeseen emergency or other unforeseen circumstances outside the control of the project owner. If one of the aforementioned unavoidable interruptions should occur, the CPM, project Owner, and City of Hayward shall confer and determine how to restore the AWT supply as soon as practicable. Fresh water used for domestic purposes shall be metered separately from fresh water used for cooling and process water supply. The project owner will notify the CPM in writing if potable water is used for cooling or process purposes and provide an explanation of why the back-up supplies are being used.

The project owner shall prepare and submit to the CPM an annual summary, which will include the monthly range and monthly average of daily water usage in gallons per day, and total water (range and average) used by the project on a monthly and annual basis in acre-feet. The annual summary shall distinguish sources (recycled or potable) and the uses (cooling, process, domestic, etc…) of the specified source. The project owner will obtain copies of project water use records derived from the City of Hayward's recycled and potable water revenue meters.

Verification: The project owner will submit as part of its annual compliance report a water use summary to the CPM on an annual basis for the life of the project. Any significant changes in the water supply for the project during construction or operation of the plant shall be noticed in writing to the CPM at least 60 days prior to the effective date of the proposed change.

SOIL & WATER 5 Due to the potential for encountering soil contamination during construction at the site of the RCEC, it is necessary to perform additional Phase II investigations prior to any site mobilization activities, and prepare a site assessment map to further delineate contaminated areas. Contaminated areas shall be identified on construction excavation plans, and any soil and/or groundwater encountered in these areas will be segregated and held on-site for sampling and analysis, until proper handling, treatment or disposal can be determined. Stockpiled soil will be covered to prevent run-on or runoff, and groundwater will be stored in appropriate tanks or containers. Soil sampling requirements shall consist of a 4-point composite sample for every 500 to 1,000 cubic yards of soil. Analytes are to be selected based on Phase II Site Assessment results. Details of the Site Assessment and Remediation Program are to be provided to the City of Hayward Fire Department and SFRWQCB for review and comment.

Verification: Sixty days prior to site mobilization, the project owner will provide evidence of compliance with the Site Assessment and Remediation Workplan as approved by the City of Hayward Fire Department and the San Francisco Bay RWQCB, and evidence of site closure. If the agencies direct remediation in conjunction with construction rather than prior to construction, then evidence of site closure must be provided 30 days prior to project operation. A quarterly status report will be provided to the CPM addressing site assessment and remediation activities, with the first status report due in January 2002, or within 30 days of AFC certification, whichever occurs first.

SOIL & WATER 6 Prior to any site mobilization activities, the project owner shall provide the CPM with the executed Service Agreement with the City of Hayward detailing the commercial terms for operation and maintenance of the Advanced Water Treatment (AWT) Plant, supply of recycled and potable water, and permitting under the City of Hayward's pretreatment program for treatment and disposal of process, cooling and stormwater waste streams at the City of Hayward's WPCF.

Verification: At least 60 days prior to beginning any site mobilization activities, the project owner shall submit to the CPM an executed Service Agreement with the City of Hayward detailing the commercial terms for operation and maintenance of the AWT Plant, supply of potable water, and permitting under the

City of Hayward's pretreatment program for treatment and disposal of process, cooling and stormwater waste streams at the City of Hayward's WPCF.

SOIL & WATER 7 Prior to any site mobilization activities, the project owner shall provide the CPM with evidence of its request for a flood zone map revision with the City of Hayward, and FEMA's issuance of a conditional letter of map revision (CLOMR). The project owner shall provide evidence of submittal of as-built plans to City of Hayward in order to obtain a final letter of map revision (LOMR).

Verification: Thirty (30) days prior to site mobilization, the project owner shall submit to the CPM evidence of its request for a flood zone map revision with the City of Hayward, and FEMA's issuance of a conditional letter of map revision (CLOMR). Within sixty (60) days following the RCEC commercial operation date, the project owner shall submit to the CPM evidence of submittal of as-built plans to the City of Hayward in order to obtain a final letter of map revision (LOMR).

SOIL & WATER 8 Prior to the start of construction, the project owner shall provide the CPM with evidence of a Flood Canal Tie-In Permit to the Alameda County Public Works Agency (Flood Control and Water Conservation District).

Verification: At least thirty (30) days prior to construction, the project owner shall submit to the CPM evidence of submitting an Application for a Flood Canal Tie-In Permit to the Alameda County Public Works Agency, Flood Control and Water Conservation District.

C. CULTURAL RESOURCES

The Energy Commission's primary concerns in its cultural resource analysis are to ensure that all potential impacts are identified and that significant adverse impacts are avoided or reduced to a level of insignificance. The determination of potential impacts to cultural resources from the proposed RCEC is required by the Siting Regulations of the Energy Commission and by CEQA. Three aspects of cultural resources were addressed in Applicant's and in Staff's analysis: prehistoric archaeological resources, historic period resources, and ethnographic resources.

SUMMARY OF THE EVIDENCE

Applicant's witness for cultural resources was Andrew Gorman. Mr. Gorman sponsored Section 8.1 of the AFC (Ex. 8); Applicant's Supplement to the AFC (Ex. 20) and other supporting documents. The Applicant carried out a pedestrian survey of the proposed power plant site, laydown and parking sites, linear routes, and the Advanced Wastewater Treatment (AWT) facility. No archaeological resources were identified as a result of the surveys. (Ex. 1, p. 4.3-5.) The only potential property with above-ground resources of historic age is the electrical transmission line and towers that extend from approximately 600 feet of the project site to the existing Eastshore-Grant transmission corridor and then extend to the Eastshore Substation. The age of the existing transmission line and towers is at least 62 years since they appear on a 1939 aerial photograph. The Applicant has evaluated the existing transmission towers as not eligible for the California Register of Historical Resources (CRHR). Subsequent to the Applicant's evaluation, the transmission line was thoroughly evaluated by public historian, Cindy Baker at PAR Environmental Services, consultant to the Energy Commission, and found not to be eligible for listing on CRHR. Since the transmission line does not meet the criteria for listing on the CRHR, no mitigation is necessary. (Ex. 1, p. 4.3-5.)

Applicant's witness Gorman testified that the Staff's proposed conditions of certification would reduce the potential for impacts to a less than significant level and provide direction for mitigation of impacts if previously unknown cultural resources are encountered during project construction. (Ex. 2, p. 24; RT 40-41.)

Staff Witness Roger Mason testified that a cultural resources records search and check of historical maps and aerial photographs indicated that no properties with above-ground resources of historic age have been identified within one-half mile of the power plant site and transmission line. There are no structures listed on the City of Hayward's list of architecturally and historically significant buildings within two miles of the project area. There are no structures on the Alameda County list of potentially significant historic buildings within two miles of the project area. The Hayward Area Historical Society knows of no historical resources within 0.75 mile of the project area. The Shoreline Interpretive Center has not identified any historical resources outside the boundaries of the Shoreline Park. Since there are no historical resources identified, there will be no impacts. (Ex. 1, p. 4.3-4.)

Staff Witness Mason further testified that a cultural resources records search indicated that no below-ground archaeological resources or interred human remains have been identified within one half mile of the power plant site or project linear routes. The one half mile radius includes the laydown and parking sites. Therefore, he concluded that the proposed project would not impact any known archaeological resource. However, buried archaeological resources could be encountered during project construction. The project area has been subject to high rates of deposition that would bury archaeological resources. In addition, the project area's bay shore location has a high level of sensitivity for prehistoric cultural resources. The Applicant recommended worker training to increase the likelihood that workers will recognize buried cultural material during construction, but did not recommend monitoring of subsurface construction activities by an archaeologist. Energy Commission staff recommends monitoring full time by an

archaeologist to ensure that any cultural resources that might be encountered during construction will be identified and evaluated before significant impacts could occur (condition Cul-3(f) and Cul-6). In the event of an unanticipated discovery, the proposed Conditions of Certification CUL-1 through CUL-7 shall apply. Implementation of the proposed Conditions of Certification CUL-1 through CUL-7 will reduce impacts to any archaeological resource identified during construction to a level of insignificance. Development of a research design prior to the start of construction that could be applied to discoveries may reduce construction delays. The mitigation steps contained in the Conditions of Certification will ensure that potential impacts will be rendered less than significant. (Ex. 1, p. 4.3-4 to 4.3-6; RT 41.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record,

1. No cultural resources known to be eligible for the California Register of Historic Resources exist in the project area.
2. Construction activities associated with the Russell City Energy Center project and related facilities present the greatest potential for adverse impacts to cultural resources.
3. The Conditions of Certification that follow contain measures that will assure adequate mitigation of impacts to any cultural resources encountered during construction and modernization of the project site.

We therefore conclude that implementation of the Conditions of Certification will assure that significant adverse impacts do not occur to cultural resources as a result of project construction or operation. Implementation of the Conditions of Certification below will assure that the Russell City Energy Center project will comply with all applicable laws, ordinances, regulations, and standards pertaining to cultural resources set forth in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance, the project owner shall provide the California Energy Commission Compliance Project Manager (CPM) with the name and resume of its Cultural Resources Specialist (CRS), and one alternate CRS, if an alternate is proposed, who will be responsible for implementation of all cultural resources conditions of certification.

Protocol:

a. The resume for the CRS and alternate, if an alternate is proposed, shall include information that demonstrates that the CRS meets the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published in the Code of Federal Regulations, 36 CFR Part 61.

   The technical specialty of the CRS shall be appropriate to the needs of this project and shall include a background in anthropology, archaeology, history, architectural history or a related field. The background of the CRS shall include at least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California;

   The resume shall include the names and phone numbers of contacts familiar with the CRS's work on referenced projects.

b. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during project ground disturbance, construction and operation.

c. The CRS may obtain qualified cultural resource monitors to monitor as necessary on the project. Cultural resource monitors shall meet the following qualifications.

   - A BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or
   - An AS or AA in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or
   - 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.

d. The project owner shall ensure that the CRS completes any monitoring, mitigation and curation activities necessary to this project and fulfills all the requirements of these conditions of certification. The project owner shall also ensure that the CRS obtains additional technical specialists, or

additional monitors, if needed, for this project. The project owner shall also 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).

Verification: At least 45 days prior to the start of ground disturbance, the project owner shall submit the name and statement of qualifications of its CRS and alternate CRS, if an alternate is proposed, to the CPM for review and approval.

(1) If the CPM determines the proposed CRS to be unacceptable, the project owner shall submit another individual's name and resume for consideration. If the CPM determines the proposed alternate to be unacceptable, the project owner may submit another individual's name and resume for consideration.

(2) At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for cultural resource monitoring required by this condition. If additional monitors are obtained during the project, the CRS shall provide additional letters to the CPM, identifying the monitor and attesting to the monitor's qualifications. The letter shall be provided one week prior to the monitor beginning on-site duties.

(3) 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 onsite work and is prepared to implement the cultural resources conditions of certification.

(4) At least 10 days prior to the 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.

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 will 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 them with copies to the CPM. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM. Maps shall identify all areas of the project where ground disturbance is anticipated.

(1) If construction of this project will proceed in phases, maps and drawings may be submitted in phases. A letter identifying the proposed schedule of each project phase shall be provided to the CPM.

(2) Prior to implementation of additional phases of the project, current maps and drawings shall be submitted to the CPM.

(3) At a minimum, the CRS shall consult 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. A current schedule of anticipated project activity shall be provide to the CRS on a weekly basis during ground disturbance and provided to the CPM in each Monthly Compliance Report (MCR).

Verification: At least 40 days prior to the start of ground disturbance, the project owner shall provide the designated cultural resources specialist and the CPM with the maps and drawings.

(1) If this is to be a phased project, a letter identifying the proposed schedule of the ground disturbance or construction phases of the project shall also be submitted.

(2) At least 30 days prior to the start of ground disturbance on each phase of the project, following initial ground disturbance, copies of maps and drawings reflecting additional phases of the project, shall be provided to the CPM for review and approval.

(3) If there are changes to the scheduling of the construction phases of the project, a letter shall be submitted to the CPM within 5 days of identifying the changes. A copy of the current schedule of anticipated project activity shall be submitted in each MCR.

CUL-3 Prior to the start of ground disturbance; the designated cultural resources specialist shall prepare, and the project owner shall submit to the CPM for review and approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to sensitive cultural resources. Approval of the CRMMP, by the CPM, shall occur prior to any ground disturbance.

Protocol: The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures.

a. A proposed general research design that includes a discussion of questions that may be answered by the mapping, data and artifact recovery conducted during monitoring and mitigation activities, and by the post-construction analysis of recovered data and materials.

b. 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.

c. Identification of the person(s) expected to perform each of the tasks; a description of each team member's qualifications and their responsibilities;

and the reporting relationships between project construction management and the mitigation and monitoring team.

d. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.

e. 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 will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

f. A discussion of the location(s) where monitoring of project construction activities is deemed necessary. Monitoring shall be conducted full time, during ground disturbance on the project site, linear alignments, and staging areas.

g. A discussion of the requirement that all cultural resources encountered will 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 shall be curated 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 in Title 36 of the Federal Code of Regulations, Part 79. Discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding will be met. In addition, the name and phone number of the contact person at the institution shall be included. In addition, include information indicating that the project owner will pay all curation fees and that any agreements concerning curation will be retained and available for audit for the life of the project.

h. 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.

i. A discussion of the proposed Cultural Resource Report that shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines. The CRR shall include all cultural resource information (survey, testing, monitoring, data recovery, and analysis) obtained as a result of this project. All survey reports and additional research reports, not previously submitted to the CHRIS, shall be included as an appendix to the CRR. Maps delineating the location of all archaeological work shall be included in the CRR. Tables, charts or

graphs shall be included as necessary. Descriptions of soils shall be included wherever subsurface excavations are undertaken for archaeological testing or data recovery or where monitoring of excavations occurs. This report shall be submitted to the CPM after the conclusion of ground disturbance (including landscaping). This report shall be considered final upon approval by the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the Cultural Resources Monitoring and Mitigation Plan, prepared by the designated cultural resource specialist, to the CPM for review and written approval. At least 30 days prior to ground disturbance the project owner shall submit a letter to the CPM indicating that they will pay any curation fees for curation of any collected archaeological artifacts. The CRR shall be submitted to the CPM within 90 days after completion of ground disturbance (including landscaping) for review and approval. 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 curating institution (if archaeological materials were collected), the SHPO and the CHRIS.

CUL-4 Worker Environmental Awareness Training for all new employees shall be conducted on a weekly basis, prior to beginning and during periods of ground disturbance. The training may be presented in the form of a video. The training shall include a discussion of applicable laws and penalties under the law. Training shall also include samples or visuals of artifacts that might be found in the project vicinity and the information that the CRS, alternate CRS or monitor has the authority to halt construction in the event of a discovery or unanticipated impact to a cultural resource. The training shall also instruct employees to halt or redirect work in the vicinity of a find and to contact their supervisor and the CRS or monitor. An informational brochure shall be provided that identifies reporting procedures in the event of a discovery. Workers shall sign an acknowledgement form that they have received training and a sticker shall be placed on hard hats provided indicating that environmental training has been completed.

Verification: Copies of acknowledgement forms signed by trainees shall be provided in the MCR.

CUL-5 The CRS, alternate CRS and the Cultural Resources Monitor(s) shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered or if known resources may be impacted in a previously unanticipated manner. If such resources are found, the halting or redirection of construction shall remain in effect until all of the following have occurred:

(1) The CRS has notified the CPM and the project owner of the find and the work stoppage;

(2) The CRS, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and

(3) Any necessary data recovery and mitigation has been completed.

If data recovery or other mitigation measures are required, the CRS and/or the alternate CRS and cultural resource monitor(s), including Native American monitor(s), shall monitor these data recovery and mitigation measures, as needed. For any cultural resource encountered, the project owner shall notify the CPM within 24 hours after the find.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate CRS and cultural resources monitor(s) have the authority to halt construction activities in the vicinity of a cultural resource find and stating that the CRS will notify the CPM and project owner within 24 hours after a find.

CUL-6 The CRS, alternate CRS, or monitors shall monitor ground disturbance full time in the vicinity of the project site, linears and ground disturbance at laydown areas to ensure there are no impacts to undiscovered resources. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter providing a detailed justification for that decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

(1) Monitors 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.

(2) The CRS shall notify the project owner and the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources conditions of certification within 24hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

(3) 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.

(4) A Native American monitor shall be obtained, at a minimum on an on call basis, 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 will be monitored.

Verification: During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter 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.

(1) 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 as needed.

(2) Within 24 hours of recognition of a non-compliance issue, the CRS 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 with conditions of certification. In the event of a 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.

(3) 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 at a minimum, an on an on-call basis to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

CUL-7 If the construction and laydown areas are to be located anywhere but in an area defined as 1) a 10-acre parcel at 3548/3600 Depot Road, 2) a 5-acre parcel at 3600 Enterprise Avenue, 3) approximately 10 acres of open and unused land surrounding PG&E's Eastshore Substation, or 4) 3500 Enterprise Avenue, 3458 Enterprise Avenue, 3440 Enterprise Avenue or 3643 and 3639 Depot Road, then a cultural resources assessment shall be conducted. The cultural resource assessment shall consist of a records search and a pedestrian survey that gives equal emphasis to prehistoric and historic resources and an evaluation of significance for any resources that are within or adjacent to the parking area or laydown boundaries. All cultural resources identified within or adjacent to the project shall be recorded on a DPR form 523A. If Native

American artifacts may be encountered, a monitor with historic ties to the affected area shall be retained as part of the cultural resources team during any surveys or subsurface investigation.

Verification: At least 30 days prior to the start of ground disturbance at the newly identified location(s) of the parking or laydown areas, the project owner shall submit the results of the records search and the results of the survey for approval by the CPM. An evaluation, including site records, of all cultural resources within or adjacent to the parking and laydown area boundaries shall also be submitted. The information shall also include the name and tribal affiliation of the Native American monitor, if a Native American monitor has been retained.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The Energy Commission's primary objective in its geological and paleontological resource analyses is to ensure that there will be no significant adverse impacts to significant geologic and paleontological resources during project construction, operation, and closure. Paleontological resources include the fossilized remains or trace evidence of prehistoric plants or animals, which are preserved in soil or rock. These fossils are significant because they help document the evolution of particular groups of organisms and the environment in which they live.

SUMMARY OF THE EVIDENCE

Geology

Applicant sponsored the testimony of Dr. Tom Stewart on the project's potential impacts to geological and paleontological resources. Dr. Stewart testified that although there are no active or potentially active faults in the immediate vicinity of the project, the Hayward and San Andreas faults (5 and 22 kilometers from the site, respectively) have the potential to yield earthquakes that would produce strong ground shaking and potential instability in the sediment underlying the site and its facilities. Construction of the RCEC, the advanced wastewater treatment (AWT) plant and associated linear facilities could disturb the unconsolidated sediments by grading and trenching to shallow depths. The generating facility and all of the associated linear facilities would be designed and constructed in accordance with California Building Code (CBC), Seismic Zone 4 requirements and standards adopted by the City of Hayward Public Works Department to minimize the exposure of people to risks associated with large seismic events. Dr. Stewart supported this analysis by sponsoring Section III-Geology and Paleontology of Exhibit 2 and Sections 8.4 and 8.8 of the AFC. (Ex. 8; RT 8.)

Staff Witness Neal Mace testified that design and construction of the project to conform to the CBC (1998) requirements outlined in **Conditions of Certification**

Geo-1 and Geo-2 and the standards adopted by the City of Hayward Public Works Department will reduce the impact of strong seismic ground shaking or seismic related ground failure, including liquefaction, to less than significant. (Ex. 1, p. 5.2-5; RT 8.)

Mineral Resources

Applicant witness Stewart testified that salt produced by the evaporation of seawater from salt ponds immediately adjacent to the Bay is the only known mineral resource in the vicinity of the RCEC project site. (Ex. 2, p. 83.) Staff Witness Neal Mace testified that construction of the RCEC would not affect "harvesting" of this mineral resource and concluded that no special Conditions of Certification are required for mineral resources. (Ex. 1, p. 5.2-6; RT 8.)

Paleontological Resources

Vertebrate fossils have not been identified in the immediate project area, but vertebrate fossil discoveries have been reported elsewhere on the East Bay plain. Based on this fact, the Applicant has recognized that the project area should be considered as potentially sensitive for paleontological resources and proposed paleontological monitoring and salvaging as mitigation to reduce the potential impacts to paleontological resources, as set forth in **Conditions of Certification (PALEO-1 through PALEO-7)** (Ex. 1, p. 5.2-7.) Should any unique paleontological resources be encountered during construction, implementation of the monitoring and mitigation measures required by the **Conditions of Certification** will reduce the impacts to less than significant.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find:

1. Implementation of the Conditions of Certification will reduce geological and paleontological impacts to less than significant. (Based on Ex. 1, pp. 5.2-5 through 5.2-7.)
2. The RCEC project will have no impact on mineral resources in the project area. (Ex. 1, p. 5.2-6.)
3. The Conditions of Certification will ensure that activities associated with construction and operation of the project will cause no significant cumulative adverse impact to geological or paleontological resources. (Ex. 1, p. 5.2-7.)
4. The RCEC project will comply with all applicable LORs. (Ex. 1, p. 5.2-7.)

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineral, or paleontological resources, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

GEO-1 Prior to the start of construction, the project Owner shall assign to the project an Engineering Geologist(s), certified by the State of California, to carry out the duties required by the 1998 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4. The Certified Engineering Geologist(s) assigned must be approved by the CPM. The functions of the Engineering Geologist can be performed by a responsible Geotechnical Engineer, if that person has the appropriate California license.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project Owner and the CBO) prior to the start of construction, the project Owner shall submit to the CPM for approval the name(s), resume(s), and license number(s) of the Certified Engineering Geologist (s) assigned to the project. The submittal should include a statement that CPM approval is needed. The CPM shall notify the project Owner of its findings within 15 days of receipt of the submittal. If the Engineering Geologist(s) is subsequently replaced, the project Owner shall submit for approval the name(s), resume(s) and license number(s) of the newly assigned Engineering Geologist(s) to the CPM. The CPM will notify the project Owner of its findings within 15 days of receipt of the notice of personnel change.

GEO-2 The assigned Engineering Geologist(s) shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirement, and Section 3318.1 – Final Reports. Those duties are:

1. Prepare the Engineering Geology Report, which shall include a site-specific seismic hazards analysis. This report shall accompany the Plans and Specifications when applying to the CBO for the grading permit.
2. Monitor geologic conditions during construction.
3. Prepare the Final Geologic Report.

Protocol: (I): The Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3309.3 Grading Designation, shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy of the site for the intended use as affected by geologic factors.

The Final Geologic Report to be completed after completion of grading, as required by the 1998 CBC Appendix Chapter 33, Section 3318.1, shall contain the following: A final description of the geology of the site and any new information disclosed during grading; and the effect of same on recommendations incorporated in the approved grading plan. The Engineering Geologist shall submit a statement that, to the best of his or her knowledge, the work within his/her area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of Chapter 33.

Verification: (1) Within 15 days after submittal of the application(s) for grading permit(s) to the CBO or other, the project Owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. (2) Within 90 days following completion of the final grading, the project Owner shall submit copies of the Final Geologic Report required by the 1998 CBC Appendix Chapter 33, Section 3318 Completion of Work, to the CBO, with a copy of the transmittal letter forwarded to the CPM.

PAL-1 Prior to the start of any project-related construction activities (defined as any construction-related vegetation clearance, ground disturbance and preparation, and site excavation activities), the project Owner shall ensure that the designated Paleontologic Resource Specialist approved by the CPM is available for field activities and prepared to implement the Conditions of Certification.

The designated Paleontologic Resource Specialist shall be responsible for implementing all the paleontologic Conditions of Certification and for using qualified personnel to assist in this work.

> Protocol: The project Owner shall provide the CPM with the name and statement of qualifications for the designated Paleontologic Resource Specialist.
>
> The statement of qualifications for the designated Paleontologic Resources Specialist shall demonstrate that the specialist meets the following minimum qualifications: a degree in paleontology or geology or paleontologic resource management; and at least three years of paleontologic resource mitigation and field experience in California, including at least one year's experience leading paleontologic resource mitigation and field activities. The statement of qualifications shall include a list of specific projects the specialist has previously worked on; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.
>
> If the CPM determines that the qualifications of the proposed Paleontologic Resource Specialist do not satisfy the above requirements, the project Owner shall submit another individual's name and qualifications for consideration.

Verification: At least 90 days prior to the start of construction (or a lesser number of days mutually agreed to by the project Owner and the CPM), the project Owner shall submit the name and resume and the availability for its designated Paleontologic Resource Specialist, to the CPM for review and approval. The CPM shall provide written approval or disapproval of the proposed paleontological resource specialist.

At least 10 days prior to the termination or release of a designated Paleontologic Resource Specialist, the project Owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated Paleontologic Resource Specialist. Should emergency replacement of the designated specialist become necessary, the project Owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

PAL-2 Prior to the start of project construction, the designated Paleontologic Resource Specialist shall prepare a Paleontologic Resources Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive paleontologic resources, and submit this plan to the CPM for review and approval. After CPM approval, the project Owner's designated

Paleontologic Resource Specialist shall be available to implement the PRMMP, as needed, throughout project construction.

In addition to the project Owner's adoption of the guidelines of the Society of Vertebrate Paleontologists (SVP 1994) the PRMMP shall include, but not be limited to, the following elements and measures:

- A discussion of the sequence of project-related tasks, such as any pre-construction surveys, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; fossil preparation and recovery; identification and inventory; preparation of final reports; and transmittal of materials for curation.

- Identification of the person(s) expected to assist with each of the tasks identified within this condition for certification, and a discussion of the mitigation team leadership and organizational structure, and the inter-relationship of tasks and responsibilities.

- Where monitoring of project construction activities is deemed necessary, the extent of the areas where monitoring is to occur and a schedule for the monitoring.

- An explanation that the designated Paleontologic Resource Specialist shall have the authority to halt or redirect construction in the immediate vicinity of a vertebrate fossil find until the significance of the find can be determined.

- A discussion of equipment and supplies necessary for recovery of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.

- Inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontologic resources.

Identification of the institution that has agreed to receive any data and fossil materials recovered during project-related monitoring and mitigation work, discussion of any 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.

Verification: At least 60 days prior to the start of construction on the project (or a lesser number of days mutually agreed to by the project Owner and the CPM), the project Owner shall provide the CPM with a copy of the Monitoring and Mitigation plan prepared by the designated Paleontologic Resource Specialist for

review and approval. If the plan is not approved, the project Owner, the designated Paleontologic Resource Specialist, and the CPM shall meet to discuss comments and negotiate necessary changes.

PAL-3 Prior to the start of construction, and throughout the project construction period as needed for all new employees, the project Owner and the designated Paleontologic Resource Specialist shall prepare and conduct CPM-approved training to all project managers, construction supervisors, and workers who operate ground-disturbing equipment. The project Owner and Construction Manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive paleontologic resources or deposits that may be discovered during project-related ground disturbance.

> Protocol: The paleontologic training program shall discuss the potential to encounter paleontologic resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.
>
> The training shall also include the set of reporting procedures that workers are to follow if paleontologic resources are encountered during project activities. The training program shall be presented by the designated Paleontologic Resource Specialist and may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

Verification: At least 30 days prior to the start of project construction, the project Owner shall submit to the CPM for review, comment, and approval, the proposed employee training program and the set of reporting procedures the workers are to follow if paleontologic resources are encountered during project construction.

If the employee training program and set of procedures are not approved, the project Owner, the designated Paleontologic Resource Specialist, and the CPM shall meet to discuss comments and negotiate necessary changes, before the beginning of construction. Documentation for training of additional new employees shall be provided in subsequent Monthly Compliance Reports.

PAL-4 The designated Paleontologic Resource Specialist or designee shall be present at all times he or she deems appropriate to monitor construction-related grading, excavation, trenching, and/or auguring in areas where potentially fossil-bearing sediments have been identified. If the designated Paleontologic Resource Specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project Owner.

Verification: The project Owner shall include in the Monthly Compliance Reports a summary of paleontologic activities conducted by the designated Paleontologic Resource Specialist.

PAL-5 The project Owner, through the designated Paleontologic Resource Specialist, shall ensure recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontologic resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project Owner shall maintain in its compliance files copies of signed contracts or agreements with the designated Paleontologic Resource Specialist and other qualified research specialists who will ensure the necessary data and fossil recovery, mapping, preparation for analysis, analysis, identification and inventory, and preparation for and delivery of all significant paleontologic resource materials collected during data recovery and mitigation for the project. The project Owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontologic Resources Report and shall keep these files available for periodic audit by the CPM.

PAL-6 The project Owner shall ensure preparation of a Paleontologic Resources Report by the designated Paleontologic Resource Specialist. The Paleontologic Resources Report shall be completed following completion of the analysis of the recovered fossil materials and related information. The project Owner shall submit the paleontologic report to the CPM for approval.

> Protocol: The report shall include (but not be limited to) a description and inventory list of recovered fossil materials; a map showing the location of paleontologic resources encountered; determinations of sensitivity and significance; and a statement by the Paleontologic Resource Specialist that project impacts to paleontologic resources have been mitigated.

Verification: The project Owner shall submit a copy of the Paleontologic Resources Report to the CPM for review and approval, under a cover letter stating that it is a confidential document. The report is to be prepared by the designated Paleontologic Resource Specialist within 90 days following completion of the analysis of the recovered fossil materials.

PAL-7 The project Owner shall include in the facility closure plan a description regarding potential impact to paleontologic resources by the closure activities. The conditions for closure will be determined when a facility closure plan is submitted to the CPM, twelve months prior to closure of the facility. If no activities

are proposed that would potentially impact paleontologic resources, then no mitigation measures for paleontologic resource management are required in the facility closure plan.

> Protocol: The closure requirements for paleontologic resources are to be based upon the Paleontologic Resources Report and the proposed grading activities for facility closure.

Verification: The project Owner shall include a description of closure activities described above in the facility closure plan.

E. WASTE MANAGEMENT

In this subject area the Applicant and Staff witnesses presented assessments of issues associated with managing wastes generated from constructing and operating the proposed Russell City Energy Center. These assessments evaluated the proposed waste management plans and mitigation measures designed to reduce the risks and environmental impacts associated with handling, storing, and disposing of project-related hazardous and nonhazardous wastes generated during facility construction and operation.

SUMMARY OF THE EVIDENCE

Applicant's witness, W. Douglas Urry, described the project setting and the types and quantities of wastes that would be generated during the construction and operation of the project. (Ex. 8, Section 8.14, Ex. 2, p. 69-73; RT 69.)

In order to assess the potential for contamination and contaminated wastes to be generated prior to construction at the proposed site, the project owner commissioned a Phase I Environmental Site Assessment (ESA), which was conducted in March of 2001. The Phase I ESA was performed in accordance with American Society for Testing and Materials practice E 1527-97. The purpose of an ESA was to determine the potential for the presence or likely presence of any hazardous substances or petroleum products under conditions that may indicate a release or threat of a release from present or past activities. The ESA concluded that there are contamination concerns on the site (Ex. 2, p. 70).

Staff testimony sponsored by Alvin Greenberg noted that there are three environmental conditions at the Runnels Industries parcel (one of two parcels that make up the RCEC) based on the Phase I ESA and previous investigations (Ex. 1, Section 4.12). These are: 1) Underground storage tanks that were removed in 1993, but were back-filled with used blasting sand. The previous owner requested closure. 2) A small plume of total petroleum hydrocarbons

(TPH) is located near the boundary of the Runnels and KFAX parcels. This plume is the result of metal washing. The plume's source has been corrected by installation of an oil-water separator. Investigations show that the plume is stable and self-remediating. 3) There are VOC contaminants in the groundwater at the Runnels Industries parcel at low levels. These may be from an off-site source, according to previous investigations. Runnels Industries has sought to close all three issues with the Alameda County Health Care Services Agency, Environmental Protection Division. The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) is now the lead agency directing site remediation and the City of Hayward Fire Department Hazardous Materials Office is participating in over-sight. Applicant will be required to prepare a closure plan for all three conditions and a schedule for implementation. Conditions of Certification WASTE-5 and -6 require RCEC to prepare a Remedial Action Plan (RAP) and associated soil management workplan for contamination at the Runnels parcel (Ex. 1, p 4.12-6).

Soil sampling does not guarantee that all contamination will necessarily be detected. Thus, proposed Conditions of Certification WASTE-3 and –4 would require that a Professional Engineer or Geologist be given oversight authority if unforeseen contamination is encountered (Ex. 1, p. 4.12-6).

Construction Wastes

The types of hazardous wastes normally generated during construction include waste lubricating oil, cleaning solvents, paints, batteries, oily rags and absorbent, and welding materials. Additional wastes such as concrete and contaminated soil will be generated during demolition and removal of existing foundations. Section 8.14.2.1 of the Application lists the types and quantities of wastes that may be generated during construction, as well as the proposed management method for each. All hazardous wastes generated during construction will be recycled or disposed of in a licensed hazardous waste treatment or disposal facility (Ex. 1, p. 4.12-4 and 4.12-5).

Hazardous wastes generated during facility operation include spent air pollution control catalyst, used oil, paint and thinner waste, batteries, cooling tower sludge, solvents, and turbine washwater. Table 8.14-1 of the AFC lists the types and quantities of hazardous wastes generated during operation of the facility, as well as the proposed management method for each. (Ex. 1, p. 4.12-5.)

Some of the hazardous wastes can be recycled, such as used oil, solvents, batteries, and the spent SCR catalyst. All hazardous wastes generated during construction and operation will be managed in accordance with federal and state laws and regulations. The wastes will be properly characterized, and transported offsite to approved treatment, storage, or disposal facilities by licensed hazardous waste haulers. To help ensure the use of appropriate hazardous waste disposal facilities, Staff proposed **Condition of Certification WASTE-1**, which requires the project owner to notify Staff of any known enforcement actions against hazardous waste facilities or companies used for project wastes. (Ex. 1, p. 4.12-5.)

The Staff witness concluded that there will be no significant impacts to the public or the environment from disposal of project-related hazardous wastes, because the Applicant's program for waste management would comply with all applicable laws, ordinances, regulations, and standards. Since final facility design and operational procedures may impact the amounts and types of wastes ultimately generated, the project owner would be required to submit waste management plans for construction and operation to Staff under **Condition of Certification WASTE-2**. (RT 71-74.)

Public Comment

Hayward resident Sheila Junge voiced a concern about food wrappers and other garbage left at the construction site which could attract crows, gulls, and predators of birds nesting in the nearby marsh. (RT 73.) Staff witness Dr. Greenberg responded that existing LORS require on-site construction garbage to

be covered. He added that the compliance program manager (CPM) will be enforcing those and all other requirements if the project is constructed. (RT 74.)

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 Environmental Site Assessments carried out by the Applicant found contaminated soil and groundwater at the project site. Conditions of Certification WASTE-4, -5, and -6 ensure that any contaminated soil would be removed in accordance with applicable laws, ordinances, regulations, and standards.
3. The project will comply with all applicable laws, ordinances, regulations, and standards and wastes generated during construction and operation of the proposed project will be managed in an environmentally safe manner.
4. The management of all project wastes will be in compliance with all applicable laws, ordinances, regulations, and standards.
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 Application for Certification will reduce all potential waste management impacts to a level of insignificance.

The Energy Commission therefore concludes that implementation of waste management measures proposed in the Application for Certification and implementation of the Conditions of Certification below will not result in any significant adverse impacts from the management of wastes generated during construction and operation of the Russell City Energy Center. We further conclude that the project will conform with all laws, ordinances, regulations, and standards relating to waste management in the pertinent portions as identified in **Appendix** A.

CONDITIONS OF CERTIFICATION

WASTE-1 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-2 Prior to the start of both construction and operation, the project owner shall prepare and submit to the Energy Commission CPM, for review and comment, a waste management plan for all wastes generated during construction and operation of the facility, respectively. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and

- Methods of managing each waste, 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 construction, the project owner shall submit the construction waste management plan to the CPM for review. The operation waste management plan shall be submitted 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 (or mutually agreed upon date). In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to planned management methods.

WASTE-3 The project owner shall have a Registered Professional Engineer or Geologist, with experience in remedial investigation and feasibility studies, available for consultation during soil excavation and grading activities. The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of construction, the project owner shall submit the qualifications and experience of the Registered Professional Engineer or Geologist to the CPM for approval.

WASTE-4 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 San Francisco Regional Water Quality Control Board, the Alameda County Department of Environmental Health, City of Hayward Fire Department Hazardous Materials Office, and the Regional Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt.

WASTE-5 The project owner shall prepare a Remedial Action Plan (RAP) for the known soil and groundwater contamination present on the Runnels Industry portion of the site and submit this plan to the SFRWQCB, the City of Hayward Fire Department Hazardous Materials Office, and the CPM. This RAP shall include a schedule for the remediation of the site prior to the commencement of construction activities.

Verification: Sixty (60) days prior to any earth moving activities, the project owner shall submit the RAP to the SFRWQCB, the City of Hayward Fire Department Hazardous Materials Office, and the CPM for approval 60 days prior to any earth moving activities, including those associated with site mobilization, ground disturbance, or grading as defined in the general conditions of certification.

WASTE-6 The project owner shall provide a soil management workplan providing the methods that will be used to properly handle and/or dispose of soil that may be classified as hazardous or contain contaminants at levels of potential concern. The workplan will discuss, as necessary, the reuse of soil on site in accordance with applicable criteria to protect construction or future workers onsite, disposal of soil to a Class I (hazardous) landfill, and disposal to a Class II or III landfill. This workplan may be submitted as part of the RAP.

Verification: The project owner shall submit the soil management workplan to the CPM for approval 60 days prior to any earth moving activities, including those associated with site mobilization, ground disturbance, or grading as defined in the general conditions of certification.

WASTE-7 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.

VII. LOCAL IMPACT ASSESSMENT

A. LAND USE

The land use analysis of the Russell City Energy Center project focuses on two main issues: the project's consistency with local and state land use plans, ordinances and policies; and the project's compatibility with existing and planned land uses. Indirect land use impacts such as noise, traffic, visual resources, air quality, biology, transmission line safety and nuisance, or public health are discussed in those specific areas of this Presiding Member's Proposed Decision.

SUMMARY OF THE EVIDENCE

Applicant's witness, Brent L. Moore, sponsored section 8.6 of the AFC (Ex. 8, section 5.9; RT 35.) and related data responses. The testimony established the proposed site is zoned Industrial under the City of Hayward zoning ordinance. The four predominant land uses surrounding the RCEC project site are heavy industrial, light, industrial, office and open space. The closest residence is approximately 0.82 miles to the northeast, while closer commercial neighbors to the project site include Rohm and Haas paint polymers plant, a trucking facility, a Berkeley Farms dairy processing plant, and a Gillig bus manufacturing facility. There are numerous small offices and warehouse-variety facilities in the area. To the north lies the local water treatment plant, where the proposed facility will obtain its water for the cooling process. The project site is bordered to by bay-related open space that contains saltwater marshland, a stormwater retention pond, and the Hayward Area Recreation District Shoreline Interpretive Center. (Ex. 2, p. 32.)

The Staff witnesses Jon Davidson and David Flores sponsored the Staff's independent analysis of Land Use issues in Section 4.5 of the FSA. (Ex. 1; RT 36-38.) In this analysis, the Staff determined that the proposed RCEC project would comply with the City of Hayward's LORS. The proposed project is

appropriately sited in an area designated for industrial development in the General Plan. The City's General Plan policies concerning the Industrial Corridor are generally supportive of new industrial projects for economic development reasons, rather than restrictive or prohibitive. Staff has concluded that the proposed project does not conflict with the any of the relevant land use policies contained in the Hayward General Plan. (Ex. 1, p. 4.5-7 to 4.5-8.)

The Staff witnesses concluded that "the project would not physically divide an established community, would not conflict with any applicable land use plan, policy, or regulation, and would not conflict with any applicable habitat conservation plan. The proposed use would be consistent with the policies of the City of Hayward's General Plan, and is considered a primary use permitted in the "I" District of the Zoning Ordinance. The project appears to conform to the development standards for the "I" District and such conformance can be assured with the implementation of recommended Condition of Certification **LAND-1**. Therefore, the project's land use impacts are either less than significant or can be readily mitigated to a less-than-significant level." (Ex. 4.5-12 to 4.5-13.)

Public Comment

During the evidentiary hearing, the Committee received public comment from Arthur E. Gimmy who spoke on behalf of Parker Ventures LLC. Mr. Gimmy stated that the RCEC project would have a significant negative impact on the value of the Enterprise Distribution Center on the west side of the RCEC project. This matter is addressed under the Socioeconomics section of this Decision.

Ms. George of Women's Energy Matters voiced the opinion that the power plant "is an improper use of land." (RT 39.) Larry Tong, Interagency Planning Manager for the East Bay Regional Park District, stated that the EBRPD had a number of issues with the project at its inception. However, after working with Applicant and Staff the EBRPD is satisfied overall that its interests have been

met through its agreement with Applicant, and the related Conditions of Certification.

FINDINGS AND CONCLUSIONS

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

1. The proposed project would be located within the City of Hayward, in the West Industrial Planning Area of Hayward's Industrial corridor. The City of Hayward is in Alameda County.
2. The RCEC site is zoned Industrial under the City of Hayward zoning ordinance and the four predominant land uses surrounding the project site are heavy industrial, light, industrial, office and open space.
3. The nearest sensitive receptor is a residence approximately 0.82 miles to the northeast.
4. With mitigation, the proposed Project is consistent with the applicable land use requirements. The Project is compatible with existing and planned land uses, and would not preclude or unduly restrict existing or planned land uses.

We therefore conclude that construction and operation of the project will not result in significant adverse direct, indirect, or cumulative land use impacts. Implementation of the Conditions of Certification will ensure that the project will meet all applicable laws, ordinances, regulations, and standards governing land use. The Russell City Energy Center project complies with local land use designations and if constructed and operated under the Conditions of Certification that follow, the project will not impose significant adverse impacts upon local land uses.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the minimum design and performance standards for the Industrial (I) District set forth in the City of Hayward Zoning Ordinance (Section 10-1.1645).

Verification: At least 30 days prior to construction of the RCEC project, the project owner shall submit written evidence to the Energy Commission Compliance project Manager (CPM) that the project conforms to all applicable

design and performance standards for the Industrial (I) District set forth in the City of Hayward Zoning Ordinance. (Section 10-1.1645.) The submittal to the CPM shall include evidence of review by the City.

LAND-2 The project owner shall adjust the lot line between the two parcels that constitute the RCEC project site in order to establish the RCEC and AWT project sites in accordance with provisions and procedures set forth in the City of Hayward's subdivision ordinance.

Verification: At least 30 days prior to construction of the RCEC project, the project owner shall submit evidence to the Energy Commission Compliance Project Manager (CPM) indicating approval of the lot line adjustment by the City of Hayward. The submittal to the CPM shall include evidence of compliance with all conditions and requirements associated with the approval of the lot line adjustment by the City.

B. NOISE

The construction and operation of any power plant creates noise, or unwanted sound. The character and loudness of this sound, the times of day or night during which it is produced, and the proximity of the facility to sensitive receptors combine to determine whether a project's noise will cause significant adverse impacts to the environment. In the licensing process, the Energy Commission evaluates those impacts and determines whether noise produced by project-related activities will be consistent with applicable noise control laws and ordinances. In this portion of the Decision, we examine the likely noise impacts from the Russell City Energy Center and the sufficiency of measures proposed to control them.

SUMMARY OF THE EVIDENCE

Applicant's noise engineer was Thomas Adams who sponsored section 8.7 of Exhibit 8 and portions of Exhibit 2. Mr. Adams testified that the project will comply with all applicable LORS relating to noise and that, with the application of the Conditions of Certification, the project will not have any significant adverse noise impacts on the environment. (Ex. 8, Section 8.7; Ex. 2, pp. 35-40; RT 50.) Staff testimony was sponsored by Brewster Birdsall. (Ex. 1, Section 4.6; RT 51.) After reviewing Applicant's design proposals for noise attenuation, the Staff witnesses concluded that, with the Conditions of Certification, the project will meet all noise LORS and will impose no significant impacts on the environment due to noise (Id.).

Power Plant Operation

The Applicant's modeling of the power plant's expected contribution to existing ambient noise in the project area (Ex. 8, Section 8.7.2.3) indicated that residential and recreational receptors would not experience noise from RCEC above the existing background noise levels. To reduce plant noise to below the

permissible levels for neighboring industrial uses, the Applicant has identified the following additional noise control features (Ex. 8, p. 8.7-21):

- Acoustical cladding on the south and east sides of the STG support structure
- Attenuated HRSG burner control skis
- Acoustically lagged gas lines and throttling valves on the HRSG
- Noise barrier wall on the south side of the circulating water pumps
- Low noise gas compressor building with masonry construction

With the above measures, the operational noise level at the northern plant boundary is predicted to be approximately 68 dBA L_{eq}. This is an area of adjacent industrial uses. On the northern site boundary, existing ambient noise levels are approximately 66 L_{dn} (or 60 dBA 24-hour L_{eq}) and nighttime noise levels are 58.1 dBA L_{90}. The project would add a steady state noise source of approximately 68 dBA L_{eq} at this location. With project noise, nighttime noise levels at the northern plant boundary would increase by nearly 10 dBA. Because this is not a sensitive location (where sleep interference would be a concern), the change in the noise environment caused by the project is compared to the Hayward Noise Element permissible noise level of 75 L_{dn} for industrial uses. The plant would add 8 dBA L_{eq}. The cumulative noise level (existing plus RCEC) outside the northern plant boundary would be 68 dBA L_{eq}, compared to the existing 24-hour L_{eq} of 60 dBA at this location. This is the same as approximately 74.6 L_{dn}. Because this noise level would not exceed the permissible maximum noise level of 75 L_{dn} specified in the Hayward Noise Element, the project effects would be in compliance with the LORS (Ex. 1, p. 4.6-12).

The operational noise level caused by the project at the nearest residential receptor is predicted to be 44 dBA. The existing day-night noise levels at the residences currently exceed the maximum permissible level of 55 L_{dn} specified in the Noise Element. During daytime hours, traffic noise on the nearby streets and highways would mask the more distant plant noise such that the plant noise

would be inaudible. At night however, plant noise would combine with existing ambient noise to cause a cumulative nighttime noise level of 48 dBA. This level is less than 5 dBA above the existing nighttime ambient noise level and is thus not a significant increase (Ex. 1, p. 4.6-12 and -13).

The operational noise level caused by the project at the nearest recreational receptor is predicted to be 48 dBA. During daytime hours, plant noise would not exceed existing noise levels. When added to the assumed nighttime ambient noise level of 51 dBA, the cumulative noise level will be 53 dBA. This level is less than 5 dBA above the ambient noise level, and would be in compliance with the LORS (Ex. 1, p. 4.6-13).

Based upon the above information, the Staff witness concluded that operation of the project will comply with the LORS. Because the cumulative noise levels will not exceed the noise standards of the Hayward Noise Element, and would not cause an increase of more than 5 dBA above the existing ambient noise level at sensitive receptors, the noise due to RCEC is not expected to have a significant noise effect on the local noise environment. (Ex. 1, p. 4.6-13.)

During the operating life, the RCEC facility will represent essentially a steady, continuous and broadband noise source, day and night. As discussed above, the noise levels from the proposed power plant were modeled to evaluate whether the new plant would contribute an incremental increase in noise levels at the nearest residential receptors. The predicted noise level at the closest residential receptor would be below the existing nighttime ambient conditions and the increase caused by the project would be less than 5 dBA. As a result, permanent noise increases associated with power plant operations would be considered less than significant (Ex. 1, p. 4.6-11 and -13).

The Applicant has committed to comply with applicable LORS regarding worker exposure to operational noise (Ex. 8 Section 8.7.5.1). Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA

recognizes as a threat to workers' hearing), and hearing protection would be required. The Applicant would implement a comprehensive hearing conservation program (see Condition of Certification NOISE-7). (Ex. 1, p. 4.6-14.)

Construction Noise

The City of Hayward allows construction noise provided that it does not exceed 6 dB above the local ambient conditions between 7:00 p.m. and 7:00 a.m. Monday through Saturday, or, on Sunday and holidays, before 10:00 a.m. or after 6:00 p.m. This generally allows daytime construction noise to occur provided it is not unnecessary and unreasonable. (Ex. 1, p. 4.6-8.)

Other than pile driving or steam blowing (discussed separately, below), the predicted worst-case average hourly noise levels during construction would range from approximately 38 to 49 dBA at the nearest noise sensitive receptors and from approximately 41 to 52 dBA at the Shoreline Interpretive Center. This means that general construction noise at the residential and recreational receptors would not exceed the existing ambient noise levels. Since the noise levels caused by general construction would not exceed existing ambient conditions, the cumulative effect of general construction noise to the community in conjunction with existing noise levels would be less than significant. (Ex. 1, p. 4.6-8.)

The Applicant anticipates conducting construction activities between the hours of 6:00 a.m. and 6:00 p.m. Monday through Saturday. Towards the end of project construction, certain critical construction activities associated with plant startup could continue 24 hours per day on any day of the week. Limitations on the hours of construction proposed by the Applicant could be necessary in order for the project to conform with the City of Hayward Municipal Ordinance. These limitations and further measures to ensure resolution of noise complaints would reduce any potential impacts. Noise effects from construction would be reduced

through the implementation of proposed Conditions of Certification NOISE-1, NOISE-2, and NOISE-8. (Ex. 1, p. 4.6-8.)

Pile Driving Noise

Because pile driving will produce a noise that can be heard at the nearest residential receptors, Energy Commission Staff proposes that pile driving be performed only during daytime hours in order to minimize annoyance to residents (see proposed Condition of Certification NOISE-8 below). With this limitation, pile driving noise would comply with City of Hayward requirements. (Ex. 1, p. 4.6-9.)

Because construction activities are limited to daytime hours and certain noise levels by the proposed Conditions of Certification, and are of limited duration, noise impacts to receptors in the RCEC project area from pile driving are considered to be less than significant. (Ex. 1, p. 4.6-9.)

Steam Blows

High-pressure steam blows could produce noise as loud as 136 dBA at a distance of 50 feet. In order to reduce disturbance from steam blows, the Applicant proposed to equip steam blow piping with a temporary silencer that would reduce noise levels by 20 to 30 dBA. The Staff witness has recommended the use of a quieter steam blow process, referred to as QuietBlow™ or Silentsteam™. This method utilizes lower pressure steam over a continuous period of 36 hours or so. Resulting noise levels reach only about 86 dBA at 50 feet, according to the Staff witness. (Ex. 1, page 4.6-9 and 10.) Noise levels at nearby receptors would be approximately 40 dBA, less than the ambient background noise levels, and thus barely noticeable. Staff has proposed Conditions of Certification to limit noise from steam blows by prohibiting the use of high-pressure steam blows unless appropriately silenced and to implement a notification process to make neighbors aware of impending steam blows. (see

proposed Conditions of Certification NOISE-4 and NOISE-5 below.) (Ex. 1, p. 4.6-9 and –10.)

Linear Facilities

Potential noise effects where the project would involve construction of linear facilities (water and natural gas pipelines, electrical transmission line) would be primarily the result of heavy equipment use when erecting the overhead transmission line towers or excavating and filling the trenches for the gas and water lines. The Applicant has estimated that typical heavy construction equipment used for the transmission line and pipeline construction will produce noise levels of about 80-91 dBA at a distance of 50 feet. (Ex. 8, Section 8.7.2.2.) Additionally, transmission line tower placement may be aided by the use of a helicopter. The work is expected to proceed in a sequential fashion, without producing construction noise in any given area for a substantial length of time. (Ex. 1, p. 4.6-10.)

Noise levels in the project area would increase during this phase of construction. These increases would be perceptible, especially for residences nearest the new gas pipeline. Because construction noise from linear facilities would be temporary and would be limited to daytime hours, the effects would not be significant. (Ex. 1, p. 4.6-10.)

Based upon the potential noise impacts of construction noise, the Staff has recommended the inclusion of three Conditions of Certification (NOISE-1, NOISE-2, and NOISE-8) to monitor and mitigate potential construction noise impacts. (Ex. 1, p. 4.6-10.)

Because linear facility construction activities are limited to daytime hours and certain noise levels by the proposed Conditions of Certification, and are of limited duration, potential construction noise impacts to receptors in the RCEC project area would be less than significant. (Ex. 1, p. 4.6-10.)

Construction Worker Exposure

The Applicant recognizes the applicable LORS that would protect construction workers, and commits to complying with them (Ex. 8, Section 8.7.5.1). To ensure that construction workers are, in fact, adequately protected, Staff has proposed Condition of Certification NOISE-3. (Ex. 1, p. 4.6-10 and –11.)

Tonal and Intermittent Noises

The Applicant summarized the tonal components of typical combined cycle power plants in the AFC. (Ex. 8, p. 8.7-15, Table 8.7-2.) Because of the distance to the nearest residential receptors, special provisions will not likely be necessary to mitigate tonal noise during the operation of the project (Ex. 8, p. 8.7-20). Tonal noises are commonly generated by rotating equipment. Noise from fans that may be exposed to the outside for efficiency purposes might only be partially shielded by a fan enclosure. Should tonal noise occur during project operation, proposed Condition of Certification NOISE-6 would require that the tonal noise be eliminated. (Ex. 1, p. 4.6-13.)

Transmission Corona Noise

The Staff's witness indicated that no change in audible corona-associated noise would occur on other segments of the transmission grid around the RCEC or Eastshore Substation. Because corona noise would increase approximately 0.5 dBA and there are no noise sensitive land uses near the substation or the transmission lines, the noise impacts that would occur from linear facilities would be insignificant. (Ex. 1, p. 4.6-13.)

Plant Vibration

Plant operation would not cause substantial ground-borne vibration beyond the site boundary. Within the site boundary, vibration would be carefully managed to

protect the rotating components of the equipment in operation. (Ex. 8, p. 8.7-14.) Project-induced ground-borne vibration will not have any effects on the nearest residential receptors, which are approximately 0.8 miles distant, and effects experienced by adjacent businesses would be less than significant. (Ex. 1, p. 4.6-14 and –15.)

Substantial Temporary Increase in Noise Level

The highest noise levels that would be generated during the construction of the RCEC facility as proposed by the Applicant would be associated with steam blows. As described above, Staff proposes Conditions of Certification to limit noise from steam blows by prohibiting the use of high-pressure steam blows unless appropriately silenced and to implement a notification process to make neighbors aware of impending steam blows (see proposed measures described in Conditions of Certification NOISE-4 and NOISE-5 below) in order to minimize annoyance to residents. (Ex. 1, p. 4.6-16.)

Construction of the off-site linear facilities will occur approximately 1,000 feet from the nearest residential receptors. This noise may be noticeable, and possibly annoying, to persons outside their homes at those residences nearest the construction area. This work, however, is only a temporary phenomenon; the work will progress at such a pace that no single receptor will be inconvenienced for more than a few days. As a result, temporary noise increases associated with construction of the linear facilities would be considered less than significant. (Ex. 1, p. 4.6-16.)

The RCEC facility will represent essentially a steady, continuous noise source day and night. However, occasional short-term 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 is shut down for lack of dispatch or from maintenance, noise

levels will decrease. It is anticipated that the short-term noise levels would not cause any significant temporary increase in noise levels. (Ex. 1, p. 4.6-11.)

Public Comment

Ms. George of Women's Energy Matters commented that the project would have noise impacts on pedestrians in the shoreline park area and on homes nearest to the project. Howard Beckman stated his concern that Staff analysis did not adequately analyze how noise from the project will impact nearby wildlife along the shoreline. His concerns are discussed further in the section of this Decision entitled Biological Resources.

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the Russell City Energy Center will not increase noise levels significantly above existing ambient levels in the surrounding community.
2. The nearest residential receptors to the project are located at the 0.8 miles northeast of the project site.
3. Noise associated with construction activities at the project will be temporary in nature and mitigated to the extent feasible; therefore, they will not result in a significant impact to the surrounding community.
4. Implementation of the Conditions of Certification, which follow, will ensure that noise levels in the community will not significantly increase as a result of the project.
5. With implementation of the Conditions of Certification, the project will be constructed and operated in conformity with the applicable laws, ordinances, regulations, and standards.

We therefore conclude that the Russell City Energy Center will not create any significant direct, indirect, or cumulative adverse noise impacts, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify the City of Hayward, the Hayward Area Recreation District, the East Bay Regional Parks District, and residents within one mile of the site, 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: The project owner shall transmit to the Energy Commission Compliance project Manager (CPM) in the first Monthly Construction Report following the start of construction, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

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.

Protocol: The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (see Ex. 1), or 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 30 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Hayward, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 30-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 Prior to the start of ground disturbance, the project owner shall submit to the CPM for review 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 construction, the project owner shall submit to the CPM the noise control program. The project owner shall make the program available to OSHA upon request.

NOISE-4 The project owner shall employ a low-pressure continuous steam or air blow process. High-pressure steam blows shall be permitted only if the system is equipped with an appropriate silencer that quiets steam blow noise to no greater than 86 dBA, measured at a distance of 50 feet. The project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM.

Verification: At least 15 days prior to any low-pressure continuous steam or air 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.

NOISE-5 At least 15 days prior to the first steam or air blow(s), the project owner shall notify the City of Hayward, the Hayward Area Recreation District, the East Bay Regional Parks District, and residents within one mile of the site of the planned 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 or air 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: Within five (5) days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam or air blow activities, including a description of the method(s) of that notification.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the project will not cause resultant noise levels to exceed the noise standards of the City of Hayward Municipal Code or Noise Element.

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.

> Protocol: Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct short-term survey noise measurements at monitoring sites 1, 2, 3, 4, and 5. The short-term noise measurements shall be conducted during both daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods. The survey during power plant operation shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.
>
> If the results from the survey indicate that the noise level due to the project at monitoring site 2 exceeds 44 dBA L_{eq}, or that the noise standards of the Hayward Noise Element have been exceeded at monitoring sites 1, 4, or 5, mitigation measures shall be implemented to the project to reduce noise to a level of compliance with these limits.
>
> If the post-construction noise survey indicates that pure tones have been introduced by plant operations, the project owner shall take any necessary corrective actions to eliminate the pure tones.

Verification: Within 30 days after completing the post-construction survey, the project owner shall submit a summary report of the survey to the CPM. Included in the post-construction 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. Within 30 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Within 30 days after the facility is in full operation, 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.

NOISE-8 Heavy equipment operation and noisy construction work shall be restricted to the times of day delineated below:

Monday-Saturday	7:00 a.m. to 7:00 p.m.
Sundays and holidays	10:00 a.m. to 6:00 p.m.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

C. SOCIOECONOMICS

This section of the Decision addresses the potential direct, indirect and cumulative impacts of the proposed RCEC project on local communities, community resources, and public services, such as schools, medical, and police services. It also considers the effect of project-related impacts on minority and low-income populations. Executive Order 12898, Federal Actions to address Environmental Justice in Minority Populations and Low-Income Populations, focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission. The order requires the U.S. Environmental Protection Agency, all other federal agencies, and state agencies receiving federal funds to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

SUMMARY OF THE EVIDENCE

The Applicant's witness, Tamer Kirac sponsored Section 8.10 of the AFC. (Ex. 8; RT 239.)

The Staff's independent analysis of Socioeconomics is set forth in the FSA and is sponsored by Daniel Gorfain. (Ex. 1, pp. 4.8-1 to 4.8-17; RT 239-241.)

The Applicant's witness testified that total construction personnel requirements during the 18 to 21 months of construction will be approximately 6,396 person-months, or 535 person-years. Due to the small scale of the project, it is not likely that project construction would generate a significant increase in area population. Almost all of the construction workforce, 277 workers on average peaking to 485 in month 15, will be drawn from the regional labor pool. Virtually the entire construction workforce is expected to commute to the project site, as opposed to

relocating to the area. As a result, the construction of the RCEC and AWT plant will not create any significant adverse impacts to the local school system since there will likely be no new students entering the local school districts. The construction of the proposed project will not cause significant demands on public services or facilities. All utilities are readily available from local utility providers and the construction of the proposed project will not cause significant demands to electricity and gas, sewer, water, or telephone service. Workers employed during construction will be paid $58.2 million as wages and salaries, including benefits. The total tax revenue from the sale of local products used for construction would be in the range of $412,500 to $825,000. (Ex. 2, p. 46; Ex. 8, p. 8.10-10.)

The Applicant's witness further testified that when the facility becomes operational, the RCEC is expected to employ approximately 25 full-time employees with no significant impact on population due to plant operations. There would also be no anticipated significant impacts to local housing resources. There will be no significant impact to the local educational system from the operation of the RCEC and AWT plant. Applicant will be required to pay a school impact fee based on the amount of inhabitable space constructed at the site, estimated as $9,405. The AWT plant will be exempt from the school impact fee requirement because this facility will be deeded to the City of Hayward following construction. Operation of the proposed project will not cause significant demands on public services or facilities. Required utilities are readily available from local providers. PG&E has agreed to supply natural gas to the facility. The primary source of industrial makeup water will be tertiary-treated water from the AWT plant. The source for potable water will be the City of Hayward. The RCEC's total value for property tax purposes has not been established. However, a simple assessment using values of $300 to $400 million, based on Applicant's estimate of project value, suggests the total property tax obligation could range from $3.47 million to $4.63 million annually.

The County would return a portion of this amount to the City of Hayward. (Ex. 2, p. 46.)

The Staff testimony similarly concludes that the proposed project would not induce significant population growth in the affected area, cause the displacement of housing or people, or have a significant adverse socioeconomic effect on minority and/or below-poverty-level population. The project would not adversely impact the ability of public agencies to maintain acceptable service ratios, response times and fire protection, police protection, schools and other public services. Staff concludes that the proposed project will not result in significant adverse socioeconomic effects on population, housing and public services. (Ex. 1, p. 4.8-16.)

Minorities and people of color represent 64.71 percent and persons of low income comprise 7.2 percent (1990) of the population within a 6-mile radius of the project. (Ex. 1, p. 4.8-12, Fig. 1.) However, both Staff and Applicant agree that the RCEC will be in compliance with Guidances and the Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations* (1994), because local minority and low-income populations will not be exposed to disproportionately high and adverse impacts from the project. (Ex. 3, p. 46; Ex. 1, p. 4.8-11; RT 240-241.) This is because potential project impacts will be mitigated to levels below significance.

Public Comment

On June 10, 2002, Intervenor Parker Ventures LLC filed what it terms a "summary" of its testimony.[9] The summary stated that the RCEC project would have a significant negative impact on the value of the Enterprise Distribution

[9] Parker Ventures filed a petition to intervene on August 27, 2001, which the Committee granted on August 28, 2001. However, between August 28, 2001 and June 10, 2002, Parker Ventures failed to participate in the Russell City AFC proceeding, either by attending workshops, conferences submitting data requests or commenting on the Staff Assessment.

Center, located on the west side of the RCEC project. On June 17, 2002, Applicant filed a Motion to Strike the Parker Ventures summary, stating that Parker Ventures, LLC failed to comply with the Committee's May 22, 2002 Notice of Evidentiary Hearings. The Committee Notice of Evidentiary Hearings required that, consistent with Commission regulation (Cal. Code of Regs. §§ 1212, 1712(c).), parties offering witnesses to testify must file in advance a written version of the witness' testimony as well as copies of documentary exhibits in support of such testimony. Applicant further argues that Parker Ventures' position that the RCEC project would have a "significant negative impact on the value of the Enterprise Distribution Center" is irrelevant to the decision the Committee, and ultimately the Commission, must make regarding the RCEC.

At the June 20, 2002, evidentiary hearing the Committee granted Applicant's Motion to Strike on the grounds that 1) Parker Ventures LLC failed to file adequate testimony in advance of the evidentiary hearing as required by Commission regulations and the Committee's Notice of evidentiary Hearings and, 2) Parker Ventures' assertion of reduced property values without evidence of a related significant physical effect upon the environment is not relevant testimony. The CEQA and the implementing Guidelines focus on physical changes to the environment for purposes of determining the severity of impacts. Pub. Resources Code, §§ 21100(d) and 21151(b).) "An economic or social change by itself shall not be considered a significant effect upon the environment." (14 Ca. Code of Regs., § 15382; see also § 15064(e).)[10]

Nevertheless, after granting Applicant's Motion to Strike, the Committee received the statement of Parker Ventures, LLC representative Arthur E. Gimmy in the form of public comment. Mr. Gimmy, a licensed real estate appraiser, stated that his client's property is located adjacent to the project on the west side and

[10] This language was recently relied upon by the Commission in its Decision on the Metcalf Energy Center, September 2002, fn. 147, p. 429.)

includes two buildings, totaling 142,000 square feet. The property is occupied by tenants in businesses such as warehousing, break-bulk, and processing. (RT 257.) He conducted an appraisal of the Parker Ventures property and considered the proposed RCEC potential impacts on property values due to perception of electro-magnetic fields, noise, visual effects, air emission, and unknown factors related to terrorism. (RT 253.) Mr. Gimmy concluded that in his opinion the RCEC would reduce the value of his client's property by an amount between $1.5 million and $4.4 million. (RT 254.) The attorney for Parker Ventures LLC stated, in response to a question from the Committee, that the Commission should "mitigate this economic impact." (RT 260.) In our view, the evidence of record does not support such mitigation.

Ms. George speaking on behalf of WEM stated her opposition to any further reliance on natural gas-powered electrical generation in California. She also disagreed with the Staff analysis regarding environmental justice. (RT 279-282.)

FINDINGS AND CONCLUSIONS

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

1. The Russell City Energy Center will draw primarily upon the local labor force from the Bay Area for construction and operation workers, and have a construction payroll of approximately $58 million.
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 on traditional socioeconomic considerations including employment, housing, schools, medical, tax revenues, and fire and police protection.
4. The project will likely result in increased revenue from sales taxes due to construction activities.
5. The project owner will recruit employees and purchase materials within the Bay Area to the greatest extent possible.
6. The project will have no significant adverse impacts on minority populations or low-income populations.

We therefore conclude that Implementation of the Conditions of Certification will ensure that project-related construction and operation activities will not impose any significant adverse socioeconomic impacts. Implementation of the Conditions of Certification will ensure that the project will conform with all applicable laws, ordinances, regulations, and standards relating to socioeconomic factors. In summary, the Russell City Energy Center will not result in any significant direct, indirect, or cumulative adverse socioeconomic impacts.

CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner and its contractors and subcontractors shall recruit employees and procure materials and supplies within Alameda County unless:

- To do so will violate federal and/or state statutes;
- The materials and/or supplies are not available;
- Qualified employees for specific jobs or positions are not available; or
- There is a reasonable basis to hire someone for a specific position from outside the local area.

Verification: At least 60 days prior to the start of demolition, the project owner shall submit to the CPM copies of contractor, subcontractor, and vendor solicitations and guidelines stating hiring and procurement requirements and procedures. In addition, the project owner shall notify the CPM in each Monthly Compliance Report of the reasons for any planned procurement of materials or hiring outside the local regional area that will occur during the next two months.

SOCIO-2 The project owner shall pay the one-time statutory school facility development fee as required at the time of filing for the in-lieu building permit with the City of Hayward Building Department.

Verification: The project owner shall provide proof of payment of the statutory development fee in the next Monthly Compliance Report following the payment.

D. TRAFFIC AND TRANSPORTATION

In this section, we examine the extent to which the RCEC will affect the regional and local transportation systems in the vicinity of the project. In some cases, large numbers of construction workers can, over the course of the construction period, increase roadway congestion and affect traffic flow. Traffic related to plant operation does not tend to produce similar types of impacts because of the limited number of vehicles involved.

Therefore, during these licensing proceedings, we identified the roads and routings to be used during construction and operation phases of the project; analyzed potential traffic problems associated with those routings; examined whether adequate parking capacity was available and whether the project would lead to inadequate emergency access; and analyzed the frequency of and routes associated with the delivery of hazardous materials.

SUMMARY OF THE EVIDENCE

Applicant witness Brent Moore (Traffic and Transportation of Exhibit 2 and Section 8.12 of the AFC (Ex. 8, Section 8.12; RT 62.) testified that significant effects on the local transportation system are not expected from power plant construction or operational activities and that with implementation of the Conditions of Certification recommended by Staff, any potential traffic and transportation impacts would be reduced to a less than significant level. (Ex. 2, p. 59.)

Staff witness Fred Choa conducted an independent analysis of project impacts on traffic and transportation as described in the Final Staff Assessment and offered as testimony. (Ex. 1, pp. 4.9-1 through 4.9-12; RT 62.) Four scenarios were analyzed: existing traffic, existing plus peak construction traffic, existing plus operation traffic, and cumulative conditions. Staff's witness testified that with the exception of the intersection of State Route 92 and Clawiter Road, the

local intersections will operate at an acceptable level of service (LOS) with the addition of project construction/operation traffic. (Ex. 1, p. 4.9-6.) Even though the addition of construction/operation traffic to the SR 92/Clawiter Road intersection only represents a minor percentage of traffic and does not significantly reduce the LOS, it would cause a short-term increase in the congestion that already exists. Therefore, Staff's witness testified that a construction traffic control plan and implementation program be developed to limit construction-period truck and project-related commute traffic to off-peak periods to offset this impact. (Id.)

Staff's witness also testified that construction of the linear facilities will affect the capacity of two roadways: Enterprise Avenue (between the project site and Clawiter Road) and Clawiter Road (between Enterprise Avenue and the Berkeley Farms site). The Applicant has agreed to prepare a traffic control plan related to the construction of the linear facilities to offset these impacts. (Ex. 1, p. 4-9-5.)

Mr. Choa stated that truck deliveries to the site may have a problem turning around after delivery because Enterprise Avenue is a cul-de-sac roadway, and therefore access and egress to the site will need to be designed accordingly. (Ex. 1, p. 4.9-7.)

No traffic congestion affecting emergency access is expected on Enterprise Avenue or Clawiter Road near the project site. Onsite parking may be inadequate during the peak construction phase of the project and Applicant has identified two possible sites for off-site parking (the PG&E Eastshore Substation and the Hayward Municipal Airport). The Applicant will charter 100-passenger AC Transit busses to shuttle employees between the job site and offsite parking areas. This offsite parking will reduce potential impacts at the Clawiter Road/Enterprise Avenue intersection.

All transportation and handling of hazardous materials can be mitigated to insignificance by compliance with federal, state, and local standards and permits

established to regulate the transportation of hazardous substances. (Ex. 1, p. 4.9-4, 4.9-9.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we find:

1. The addition of traffic associated with construction or operation of the RCEC project will not have a significant effect on existing levels of service at local intersections in the project vicinity. (Ex. 1, p. 4.9-6.)
2. Development and implementation of a construction traffic control plan will offset any temporary, short-term increases in congestion at the intersection of Enterprise Avenue and Clawiter Road and any decrease in service levels resulting from temporary lane closures during the construction of the linear facilities. (Ex. 1, p. 4.9-7.)
3. The project's off-site construction employee-parking plan will reduce potential impacts at the Enterprise Avenue/Clawiter Road intersection. (Ex. 1, p. 4.9-7.)
4. The transportation of hazardous materials can be mitigated to insignificance by compliance with federal, state, and local standards. (Ex. 1, p. 4.9-9.)

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to traffic and transportation, and will comply with all applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall develop a construction traffic control and transportation demand implementation program that limits construction-period truck and commute traffic to off-peak periods in coordination with the City of Hayward and Caltrans. Traffic associated with construction of the RCEC shall be mitigated by avoiding peak transportation hours associated with the area, including peak work hours for Gillig Corporation, Berkeley Farms Incorporated, and other major employers in the area. In addition, the use of the railroad spur shall not block traffic during a.m. or p.m. peak hours. Specifically, this plan shall include the following restrictions on construction traffic:

- Establish construction work hours outside of the peak traffic periods to ensure that construction workforce traffic occurs during off-peak hours, except in situations where schedule or construction activities require travel during peak hours, in which case workers will be directed to

routes that will not deteriorate the peak hour level of service below the City of Hayward's LOS D standard;

- Schedule heavy vehicle equipment and building material deliveries as well as the movement of materials and equipment from laydown areas to occur during off-peak hours;
- Route all heavy vehicles and vehicles transporting hazardous materials as follows: from SR 92 exit northbound at Clawiter Road, turn left at Enterprise Avenue, and enter the Russell City Energy Center shortly after passing Whitesell Street; and
- During the construction phase (every 4 months), monitor and report the turning movements for the intersection at Enterprise Avenue and Clawiter Road during the A.M. (7:30 to 8:30 a.m.) and P.M. (4:30 to 5:30 p.m.) peak hours to confirm construction trip generation rates.

The construction traffic control and transportation demand implementation program shall also include the following restrictions on construction traffic addressing the following issues for linear facilities:

- Timing of pipeline construction (all pipeline construction affecting local roads shall take place outside the peak traffic periods to avoid traffic flow disruptions);
- Signing, lighting, and traffic control device placement;
- Temporary travel lane closures;
- Maintaining access to adjacent residential and commercial properties; and
- Emergency access.

Verification: At least 30 days prior to start of site preparation or earth moving activities, the project owner shall provide to the City of Hayward and Caltrans for review and comment, and to the CPM for review and approval, a copy of their construction traffic control plan and transportation demand implementation program. Additionally, every 4 months during construction the project owner shall submit turning movement studies for the intersection at Enterprise Avenue and Clawiter Road during the A.M. (7:30 to 8:30 a.m.) and P.M. (4:30 to 5:30 p.m.) peak hours to confirm that construction trip generation rates identified in the AFC and used to determine less than significant impacts to City of Hayward streets and are not being exceeded.

TRANS-2 The project owner shall develop an off-site construction employee-parking program that is designed to reduce the number of trips in the project vicinity. This plan should show that the location and number of parking spaces available offsite is adequate for peak construction employees, that the number of busses and bus capacity will be adequate to shuttle peak construction

employees to and from the project site, that the hours of operation for the shuttle bus pickup and drop off times are generally outside the adjacent street peak hours, etc. Since some on-site parking will be available, the parking program should assign general parking locations (on-site or off-site) to employees. Employees should not be encouraged to drive to the project site for a parking space only to realize that one isn't available.

Verification: At least 30 days prior to the start of site preparation or earth moving activities, the project owner shall provide to the City of Hayward (for determination of compliance with local LORS) and to the CPM (for approval), a copy of the parking and shuttle bus program. Additionally, the project owner shall include in its Monthly Compliance Reports information that documents the number of employees parking offsite versus the total number of employees, the shuttle bus rider ship, and the shuttle bus hours of operation.

TRANS-3 The project owner shall ensure that all federal, state, and local regulations for the transportation of hazardous materials are observed.

Verification: The project owner shall include in its Monthly Compliance Reports copies of all permits and licenses acquired by the project owner and/or subcontractors concerning the transportation of hazardous substances.

TRANS-4 The project owner shall complete construction of Enterprise Avenue along the project frontage. Enterprise Avenue is to be constructed as a standard 60-foot industrial public street per City of Hayward Detail SD-102. This includes removal of the temporary asphalt curb, construction of approximately 21 feet of street pavement and a standard 6-foot sidewalk.

Verification: At least 30 days prior to operation of the RCEC plant, the project owner shall submit to the CPM, written verification from the City of Hayward that construction of Enterprise Avenue along the project frontage has been completed in accordance with the City of Hayward's standards.

TRANS-5 The property owner shall design and construct improvements on the portion of Whitesell Street along the project frontage. Whitesell Street shall be constructed to be 48 feet wide within a standard 60-foot right-of-way per City of Hayward standards.

Verification: At least 30 days prior to operation of the RCEC plant, the project owner shall submit to the CPM, written verification from the City of Hayward that improvements on Whitesell Street along the project frontage has been completed in accordance with the City of Hayward's standards.

TRANS-6 The property owner shall be required to resurface Enterprise Avenue, which had a new asphalt overlay from Clawiter Road to the project site completed in July 2001, if damage is caused by construction traffic. The degree of rehabilitation is dependent on a condition inspection by the City Engineer after completion of the RCEC project. This proposed condition is consistent with City of Hayward requirements on large development projects.

Verification: At least 30 days prior to project site mobilization, the project owner shall submit to the CPM a letter agreeing to resurface Enterprise Avenue if, in the opinion of the City of Hayward City Engineer, damage to the asphalt overlay is caused by heavy equipment used in the construction of the RCEC. If required, the project owner shall resurface Enterprise Avenue in accordance with City of Hayward's standards.

TRANS-7 The property owner shall grant to the City of Hayward a section of land of varying width up to 12 feet, totaling approximately 4,826 square feet, along the westerly side of Whitesell Street and the easterly line of Parcel 3 of Parcel Map No. 397, as shown on the 35 percent plan submittal for the realignment of Whitesell Street prepared by Bissel & Karn and submitted to the City of Hayward on January 4, 1993.

Verification: At least 60 days prior to project site mobilization, the project owner shall submit to the CPM documents verifying dedication of the defined property to the City of Hayward.

TRANS-8 The property owner shall grant to the City of Hayward a 10-foot section of land along Enterprise Avenue for street right-of-way along the northerly line of Parcel 3 of Parcel Map No. 397.

Verification: At least 60 days prior to project site mobilization, the project owner shall submit to the CPM documents verifying dedication of the defined property to the City of Hayward.

E. VISUAL RESOURCES

CEQA requires the Energy Commission to analyze the change in any of the physical conditions within the area affected by the project, including objects of aesthetic significance. In order to make this assessment the CEQA guidelines suggest four questions that must be examined:

> Would the project:
>
> a) Have a substantial adverse effect on a scenic vista?
>
> b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
>
> c) Substantially degrade the existing visual character or quality of the site and its surroundings?
>
> d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?" (Cal. Code of Regs., tit. 14, Appendices G and I.)

We examine these four questions in this section of the Decision.

SUMMARY OF THE EVIDENCE

Visual Impacts of the RCEC Project

Applicant's witness, Thomas Priestley, sponsored section 8.13 of the AFC (Ex. 8) that analyzed the Project's visual impact on the local viewshed.

The Staff's visual analysis prepared by Eric Knight was presented in section 4.11 of the Final Staff Assessment. (Ex. 1, pp. 165-200.)

The Russell City Energy Center will be constructed in the Industrial Zone of the City of Hayward in Alameda County. The 14.66-acre project site is relatively flat land located at the southwest corner of the intersection of Enterprise Avenue and Whitesell Street, immediately south of the City of Hayward's Water Pollution

Control Facility (WPCF). The western portion of the site is a generally open area vegetated with low-growing grass and weeds and surrounded by a chain link fence. Structures on this portion of the site include four, 228-foot-tall KFAX AM 1100 radio towers, which are painted in alternating red and white bands, and a small, one-story equipment building. The eastern portion of the site, which fronts along Whitesell Street, was used until recently by Runnels Industries for a sand blasting and painting operation. (Ex 2, p. 62.)

The alignment of the proposed transmission line extends from a takeoff structure located on the project site near the intersection of Enterprise Avenue and Whitesell Street, and will travel eastward for approximately 400 feet before reaching the existing Grant to East Shore 115-kV transmission line. A 1.1-mile long 230 – kV transmission line will travel primarily within the East Shore – Grant transmission line right-of-way, running parallel to the existing line before connecting with the East Shore Substation. The segment of this line that will be affected by the RCEC passes through industrial properties, where the right-of-way has been integrated into parking lots and outdoor storage areas. The most visible portion of the affected Grant-East Shore alignment is at its crossing of State Route 92. (Id.)

In recognition of the RCEC's location near the edge of the baylands where it has high visibility and at the State Route 92 gateway to Hayward, the Applicant has made a commitment to implement an architectural treatment that will increase its attractiveness and make it a landmark visual element at the City's western entry. To develop an appropriate architectural treatment, the Applicant employed an international architectural firm specializing in design of power plants and other major infrastructure facilities and consulted with City staff and elected officials. The selected design applies a tubular steel space frame around the HRSG units and HRSG stacks and another space frame around the cooling tower. An open stainless steel mesh will span the members of these space frames, creating a semi-transparent to opaque surface that will, under some lighting conditions,

screen the plant's equipment, and under others, reveal it. The intent of the space frame and mesh is to simplify the complexity of the plant's equipment and create a unified visual element that has a sculptural quality. The screen around the power plant has a "wave" shape intended to create a sense of motion and to serve as a distinctive landmark element. The tubular steel members of the space structures will be painted blue, the stainless steel mesh will have a brushed finish that is non-reflective, and the power plant and switching station equipment will be finished using a palette of soft grays and blue-grays. The one-story buildings housing the facility's administrative offices, warehouse, and water treatment laboratory and fronting on Whitesell Street, will be given an appropriate architectural treatment that will be consistent with the design of the project's larger features and that will comply with the City of Hayward's architectural design guidelines for industrial districts. (Ex. 8, p. 8.13-13.)

The layout of the project facilities on the site and the design of the project landscaping take into account the future widening of Whitesell Street and its conversion into a four-lane boulevard. In determining the setback required along Whitesell, the edge of the widened street right-of-way was used as the point of reference. In areas along the perimeter of the site that front on streets, standard street trees will be planted to comply with the requirements of the City of Hayward's zoning ordinance and to provide for a continuation of the Industrial Corridor's tree canopy. The canopy created by the street trees will block views toward stacks, antennas, and other tall features from nearby areas and will integrate the project into the overall visual composition of the area. In the corridor along Whitesell Street, the setback area in front of the long, one-story structure housing the administrative offices and other functions will be landscaped with a mixture of trees, shrubs, and groundcovers to create a visually engaging composition in views from the existing two lane road and the proposed future boulevard. On all the other sides of the site, with the exception of the area that lies between the advanced water treatment plant and the warehouse structure to the west, a border of tall, fast-growing broadleaf trees will be planted

to provide maximum screening of views toward the site. (Ex. 8, p. 62.) The project's architectural treatment and careful landscaping around the perimeter of the site and in the parking lot of the adjacent industrial facility will provide the project with attractive qualities and will visually relate it to its immediate setting. (Ex. 8, p. 65.)

In addition to on-site landscaping, the Applicant has proposed an extensive list of off-site measures, all intended to mitigate the visual impacts of the RCEC project. The measures, which are enumerated in the Conditions of Certification, include trailside amenities in the Hayward Regional Shoreline, trees planted at the Whitesell Business Park, and trees planted along the warehouse and industrial park complexes that line the eastern edge of the shoreline wetlands. (See VIS-9 and VIS-10.)

Although the RCEC's taller structures will be highly visible in some views, Mr. Priestley testified that when the agreed-to mitigation measures are taken into account, the project's impacts on visual resources will not create effects that would be found to be significant under the criteria for the determination of significant visual effects set forth in Appendix G of the State CEQA Guidelines. Mr. Priestley testified that with the implementation of the proposed project mitigation measures and the Conditions of Certification VIS-1 through VIS-11, the project will comply with all applicable LORS, will not have a substantial adverse effect on a scenic vista, nor will it have a substantially degrade the existing visual character or quality of the site and its surroundings. (Ex. 2, pp. 64-66.)

The Applicant, in consultation with Staff, selected seven key observation points (KOPs) to characterize the existing visual setting within which the proposed project would be evaluated. At each KOP, the Staff conducted a visual analysis that considered the following elements: Visual Quality, Viewer Concern, and Viewer Exposure, which combine into a rating of Overall Visual Sensitivity. These are described in the Staff Assessment (Ex. 1, pp. 4.11-6 through 4.11-11). To assess the visual changes that the project would cause, Staff considered the

following factors: Contrast, Dominance, and View Blockage, which combine to a rating of Overall Visual Change. (Ex. 1, pp. 4.11-15 through 4.11-23). Based upon this analysis, the Staff concludes that proper implementation of the Applicant's mitigation measures and Staff's proposed conditions of certification would reduce the adverse visual impacts of the project to levels that would not be significant. Staff also concludes that with mitigation the project would be expected to comply with all applicable local LORS related to visual resources. (Ex. 1, p. 4.11-39.)

The Applicant has proposed the following visible plume abatement:

- Plume abated wet/dry cooling tower with a plume abatement design point of 38°F and 80 percent relative humidity (i.e., preventing the formation of visible plumes when the ambient temperature is above 38°F and the relative humidity is less than 80 percent).
- An economizer bypass that can increase the stack exhaust temperature by as much as 100°F to reduce plume frequency from the HRSG stacks.

With these measures, the project's major visible plume sources will be mitigated by the Applicant and the visible plumes from the mitigated cooling tower and HRSG exhausts are not expected to cause a significant visual impact since their predicted occurrence is expected to be very low.

Both Staff and Applicant have testified that the project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. As described in Section 8.13.2.3.4 of the AFC, project light fixtures will be restricted to areas required for safety, security, and operations; lighting will be directed on-site; lighting will be shielded from public view; and non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on will be specified. These measures should substantially reduce the off-site visibility of project lighting. Off-site visibility of lighting will be further reduced by the landscape plantings that will provide additional screening of any lighting associated with the project's lower elements. With these measures, lighting associated with the project will not pose

a hazard or adversely affect day or nighttime views toward the site. As a consequence, the impacts of the project's visual effects related to lighting will be less than significant. (Ex. 1, p. 4.11-28; Ex. 2, p.65.)

Visual Impacts Of The KFAX Radio Tower Relocation

The Applicant and Staff have stipulated (Exhibit 4) to the following facts regarding the relocation of the KFAX radio towers:

The construction of the RCEC will require the removal of four radio masts currently used for radio transmission by the KFAX-AM radio station. The radio masts are currently located at 3636 Enterprise Avenue in the City of Hayward.

The City of Hayward has granted a permit for a new transmitter and four new radio towers to be constructed on City property at the Old West Winton Landfill, approximately 1.25 miles northwest of the RCEC project site. The City of Hayward has the authority to permit radio towers on City property. The City of Hayward prepared an Initial Study pursuant to CEQA for the radio towers at the landfill site, and adopted a Mitigated Negative Declaration for the project, finding that the towers would not result in any significant environmental impact, including any significant impact to visual resources. After adopting this Mitigated Negative Declaration, the City issued a permit for the new KFAX towers on July 10, 2001.

The City permit is for four towers, each 228 feet above ground level. With associated transmitter facilities, the towers will occupy approximately 14 acres of land. The towers are self-supporting monopoles and will not require guy wires.

The City land on which the towers would be relocated is a small portion of the old West Winton landfill, which was operated until 1974. This portion of the landfill has been capped and revegetated, and now appears as a large, 20- to 25-foot-high mound with a flat top. It lies at the western end of West Winton Avenue, and immediately adjacent to the parking lot and trailhead for trails located on the

East Bay Park District's Hayward Regional Shoreline and open space lands managed by the Hayward Area Recreation District (HARD). According to the City of Hayward, the portion of the former landfill on which the radio towers would be relocated is not part of the Regional Shoreline or the HARD open space lands, but is currently accessible to the public and provides a viewing point for the surrounding area.

The radio tower relocation site is bordered on its eastern and northeastern sides by a drainage channel. Immediately across this channel to the east of the site is a complex of large, boxy warehouse structures and associated truck maneuvering and parking areas that is a part of the industrial/warehouse corridor along Cabot Boulevard. To the south of the relocation site are sewage treatment oxidation ponds formerly used by the City of Hayward for wastewater treatment. Across the channel next to the northeastern perimeter of the site is an area occupied by East Bay Regional Park District office and maintenance facilities as well as an associated service yard and communications tower. To the northwest of the EBRPD support facilities is a landfill that is in the process of being capped, and a concrete recycling facility operated by Landfill Management. Still further north, 0.3 of a mile from the relocation site, are the radio transmission facilities, including five radio transmission towers, of radio station KTCT.

To the west of the relocation site is the closed and capped West Winton Landfill. Further west toward San Francisco Bay and southwest toward Cogswell Marsh are the trails through the Hayward Regional Shoreline and HARD open space lands. The parking and staging area for the trails consists of a widened paved area at the terminus of West Winton Avenue that lies at the northern base of the landfill mound on which the relocated radio towers will be sited. A row of tall, dense shrubs planted at toe of the landfill mound screens much of the top and sides of the mound from the view of those using the parking and staging area.

The relocation site is designated "Industrial" and "Baylands" in the General Plan and zoned "Industrial" and "Floodplain." Open space and parkland areas lie to

the north, south, and west of the relocation site. Commercial and industrial areas lie to the east. The relocation site is elevated 25 feet above the surrounding area. According to the City of Hayward, the elevation of the tops of the towers will be approximately 260 feet (228 feet of tower plus 30 feet of elevation above sea level).

The City of Hayward use permit application, in its conditions of approval, require that security lighting on the facilities be directed downward, that structures be non-reflective and painted in colors that blend with the surroundings, and that no red aircraft warning lights be used.

The Federal Aviation Administration ("FAA") and the Federal Communications Commission (FCC) must also grant licenses for the towers. The FAA Determination of "No Hazard to Air Navigation", issued January 17, 2002, recommends that the towers have red warning lights and be painted orange with white bands. According to the FAA, the FCC will incorporate the FAA's recommendations into the FCC permit. The tower proponent filed an amended application with the FAA requesting medium intensity white strobes in lieu of red lights and orange and white paint. The FAA has not yet re-issued its conditions.

In consultation with the City of Hayward, Applicant chose three "key observation points" (or "KOPs") to characterize the existing visual setting and analyze the visual impact of the new radio towers. Photos from these three KOPs are contained in Appendix B of the FSA, and are accompanied by photo simulations of the sites indicating how the radio towers will change the appearance of the site from these KOPs. The individual KOP perspectives are described below:

> KOP 1: West Winton Avenue. The photograph was taken from a viewpoint located about 1,000 feet northeast of the site. Applicant selected this viewpoint to represent views of the towers that would be available to approximately 200 to 250 people per day that enter the Hayward Regional Shoreline Park from West Winton Avenue. Various

man-made elements, such as utility poles and sheds, intrude into the view from this location. These structures are not substantially visible from other viewpoints in the area of KOP 1, such as from the park parking and trailhead area.

KOP 2: Shoreline Trail at Cogswell Marsh Footbridge. This KOP was established at a viewpoint located about 0.5 mile south of the site to represent views of the towers that would be available to the approximately 200 people per day who use the trail system along the western edge of the park. The existing KFAX towers are visible from this viewpoint in their present location approximately one mile to the east. Faintly detectable in the photograph are the five existing KTCT towers. Other visible landscape elements are the marshlands, industrial warehouses, the East Bay Hills, and Mt. Diablo.

KOP 3: Shoreline Trail at Sulphur Creek. This KOP is located approximately one mile to the northwest of the site and was selected to represent the views of the towers that would be available to the 200 to 250 people per day who use this portion of the park. Visible landscape elements include the marshlands, the five KTCT towers, debris piles at the Landfill Management concrete recycling facility, and the East Bay Hills.

Staff has also concluded that the visual impact from KOP 1 is significantly adverse and unmitigable. Staff has concluded that the visual impacts from KOPs 2 and 3 are adverse but less than significant.

Applicant has concluded that the impact from all KOPs is less than significant.

While Applicant proposed some vegetative screening near the area where the radio towers would be relocated, Staff testified that such mitigation would have little effect in reducing the visual impact of the towers, which, located atop a high landfill, would reach approximately 260 feet in height. (Exh. 1, Appendix B, pp.

9-22, 9-23.) As noted, in Staff's opinion the visual impact of greatest concern is from KOP 1 (West Winton Avenue) where the towers would be located immediately adjacent to the entrance to the Hayward Regional Shoreline Park and would dominate the view from the parking lot near the trailhead. (*Id*. at p. 9-20.) Here the towers would be highly prominent as they would be silhouetted against the sky and, due to their height and elevated position atop the landfill, would loom over viewers as they enter the park and trailhead area. (*Ibid*.)

Given that the public uses the area for recreation, the sensitivity to visual change is considered by Staff to be high and the resulting visual impact from the towers would, according to Staff, be adverse and significant. Staff provided elaborate oral testimony at the evidentiary hearing as to why this impact is significant and why it is, in Staff's view, not feasible to mitigate the impact to levels that are less than significant. (RT 118-131.) In Staff's opinion, trees planted in the area of KOP-1 (if feasible) would not sufficiently screen the towers from view. Although grey paint (if allowed by the Federal Aviation Administration) would make the towers appear to recede into the backdrop of the sky and hills when viewed from a distance, the towers would still be highly noticeable when viewed from nearby KOP-1, particularly because they would have white flashing strobes even during the daytime.

In an effort to mitigate various impacts of the radio towers, Applicant has entered into an agreement with the EBRPD requiring Applicant to provide landscaping "at the perimeter of the KFAX towers building and appropriate architectural treatment of the KFAX facilities in accordance with City of Hayward Industrial Zone planning requirements and reasonably satisfactory to EBRPD." In addition, the agreement requires the Applicant to provide a multi-panel interpretive display at the EBRPD parking lot/trailhead and to resurface the EBRPD parking lot and approximately 800 feet of the adjacent park entrance road for its full width. In recognition of these measures and other conditions proposed by Staff, the agreement between Applicant and EBRPD states that EBRPD believes, "as both

an interested agency and an intervenor, the foregoing list of actions by RCEC, when completed, together with appropriate Conditions of Certification ('COCs') imposed by the CEC, will bring the RCEC project into full compliance with all laws, ordinances, standards and rules, including CEQA, which are administered by EBRPD or which are otherwise applicable and relevant to the properties, resources and interests managed by EBRPD."

There are no State Scenic Highways within the project viewshed. However, the Hayward-San Mateo Bridge (SR 92) is formally recognized as a "gateway" in the Hayward General Plan.

The radio tower relocation site is farther from the Hayward Shoreline Interpretive Center and SR 92 (including the Hayward-San Mateo Bridge) than is the present site of the KFAX radio towers. The relocation site would be much closer to, and nearly adjacent to, the entrance to the Hayward Regional Shoreline Park, its parking area and trailhead, compared to the present site of the KFAX radio towers. The relocated towers would be closer to many of the trail segments, including the San Francisco Bay Trail, than in their present location.

To summarize the positions of the parties, the Applicant has testified that the radio tower relocation has no significant adverse visual impact. This position agrees with the Negative Declaration adopted by the City of Hayward. Staff has testified that the radio tower relocation results in a visual impact that is significant and unavoidable. Nevertheless, Staff has stated in the Final Staff Assessment that the RCEC project has important electric system reliability benefits such that it should be licensed even should the Commission find that the project will result in a significant visual impact.

Thus, the conflict between Staff and Applicant is not over whether the project should be licensed. Rather, the only conflict is whether the resulting visual impact of the radio tower relocation is "significant" as that term is used in CEQA.

Public Comment

Howard Beckman of San Lorenzo (RT 131.) and Barbara George of WEM (RT 140.) both expressed the view that the experts relied upon by Staff and Applicant were not expressing expertise on the subjective topic of visual impacts, but rather simply stating their personal opinions. Mr. Beckman also referred to the mitigation of visual impacts as "specious" when it simply adds an unrelated visual enhancement in exchange for a permanently damaged view. (RT 149.) Sheila Junge of Hayward (RT 133.) and Doug Sprague of Hayward (RT 139.) both noted that the parking lot most impacted by the view of the radio towers is a staging area for shoreline hikes and is used by locals during the lunch hour as a retreat. They feel the visual impact of the radio towers will degrade the area. Viola Saima-Barklow, (RT 136.) a Hayward resident, sought reassurance that all of the Conditions of Certification would actually be enforced. She also expressed concern about the visual impacts of the "wave" design structure which will partially enclose the project.

City of Hayward City Manager Jesus Armas explained how the City selected the wave design and summarized the City's environmental process for reviewing the relocation of the KFAX radio towers. (RT 143-146.)

Commission Discussion

As a threshold matter, it is important to note that because the tower relocation was a separate project that received approval pursuant to the CEQA process followed by the City of Hayward, the relocation of the KFAX towers is outside the permit jurisdiction of the Commission. The City of Hayward approved a Negative Declaration and granted a Conditional Use Permit for the radio tower relocation in July 2001. (Ex. 4.)

However, because relocation of the towers is being undertaken to make way for the power plant project, the radio tower relocation is viewed under CEQA as part

of the "whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change." (CEQA Guidelines § 15378.) Thus, the Commission staff correctly undertook its independent analysis.

The result of the analysis of the tower relocation is that Staff found a significant, unmitigable impact to occur only in the area of visual resources and only at one Key Observation Point. (Ex. 1, pp. 9-20, 9-24.) As noted, the City's Negative Declaration found no significant adverse impact. (Ex. 4, #3.) The East Bay Regional Park District, which owns property immediately adjacent to the site of the radio tower relocation, has stated that with implementation of the mitigation and enhancements proposed by the Applicant, along with the Conditions of Certification the project will be in full compliance with LORS and CEQA. (Ex. 4, #13.) The Applicant's testimony states that there are no significant adverse impacts associated with the tower relocation. With the exception of visual resources, the Staff found no significant impacts associated with the relocation of the KFAX towers. (Ex. 1, pp. 9-17 to 9-21.)

Thus, the sole area of disagreement between the City of Hayward, the East Bay Regional Park District, the Applicant, and the Staff centers on Staff's conclusions related to visual resources. The Staff Analysis evaluates the impacts from three KOPs. The analysis states that the impact is less than significant from the Cogswell Marsh footbridge (KOP 2) and less than significant from the shoreline trail at Sulphur Creek (KOP 3). (Ex. 1, pp. 9-17 to 9-21.) In the end, it is only from the vicinity of one KOP, the near foreground views from the EBRPD parking area and park entrance, that the Staff finds significant adverse impacts. (Ex. 1, p. 9-18 to 9-21.) In staff's opinion, the fact that the Applicant has agreed to repave the parking lot and access road and provide additional landscaping around the parking lot, will not sufficiently screen out the towers from the parking lot. (Ex. 1, p. 9-23.)

The city of Hayward disagreed with the Staff position and was specific in its comments on the Staff analysis:

> "While it is true that the relocated towers would be in line of view as cars enter the parking area north of the landfill panhandle section, they are generally not in line of sight as visitors enter the trail system to the west from the parking area. Instead, the radio towers would be to the far left (south) of the entrance. They would come back into view upon return to the parking area at the conclusion of the visit. Given that the purpose of the trail is to provide the public with an opportunity to enjoy the sights and diversity of the shoreline, it seems logical that visitors will generally be looking out towards the trail area, rather than back to the radio towers. Therefore, the City does not view the visual impacts of the radio towers as seriously hindering overall community enjoyment of the shoreline trail." (Ex. 27.)

In addition, Applicant's visual resources witness documented the fact that as a former landfill, the relocation site has a highly altered appearance and a relatively low level of visual quality. (RT 108-114; Ex. 19, City of Hayward Initial Study; Ex. 22, pp. 4-9.) Based on site studies and review of the simulation from KOP 1, the Applicant's analysis concluded that although the radio towers will be visible to varying degrees from KOP 1 and the nearby parking area, the visual changes would not be so substantial as to create impacts that would be significant under CEQA. (*Id*.) More specifically, the presence of the radio towers would not create so substantial a change in the visual character and quality of the views as to "substantially degrade the existing visual character and quality of the site and its surroundings." (*Id*.)

In the Commission's opinion, when judged by the standards of CEQA, the visual impacts of the relocated towers are not significant from KOP 1, and do not impose a significant negative impact when viewed on a broader scale.

FINDINGS AND CONCLUSIONS

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

1. The Russell City Energy Center is proposed to be located in the Industrial Zone of the City of Hayward in Alameda County.
2. To increase the attractiveness of the facility Applicant proposes to construct a steel space frame around the HRSG units and HRSG stacks and another space frame around the cooling tower. An open stainless steel mesh will span the members of these space frames, creating a semi-transparent to opaque surface that will simplify the complexity of the plant's equipment and create a unified visual element that has a sculptural quality.
3. Implementation of the Conditions of Certification will reduce the project's visual impacts to less than significant levels in the area.
4. The RCEC project does not substantially degrade the existing visual character or quality of the site and its surroundings. The project's architectural treatment and landscaping around the perimeter of the site and in the parking lot of the adjacent industrial facility will help visually relate the project to its immediate setting.
5. The City of Hayward has adopted a negative declaration which determined that relocation of the KFAX radio towers would not cause significant, unmitigated visual impacts.
6. The Commission finds that the visual impact of the relocated KFAX radio towers, when judged according to CEQA guidelines, will not impose a significant negative effect on the existing environment.
7. With the mitigation measures that the Applicant has agreed to implement and those required as Conditions of Certification, the project will not have a substantial adverse effect on a scenic vista, nor will it substantially damage scenic resources.
8. The RCEC project does not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.
9. Applicant has proposed mitigation measures to reduce or eliminate visible plumes from the cooling tower and HRSG exhaust. These measures, in conjunction with Condition of Certification VIS-8 will ensure that the frequency of visible plumes is very low.
10. The RCEC project will comply with all applicable local laws, ordinances, regulations, and standards.

We therefore conclude that the project will comply with applicable LORS, and will not create significant adverse direct or indirect visual impacts, nor will it contribute to significant adverse cumulative visual impacts.

CONDITIONS OF CERTIFICATION

VIS-1 The project owner shall ensure that implementing the following measures adequately mitigates visual impacts of project construction:

- Install opaque, solid slats in the chain link fence along the RCEC site's boundary with Whitesell Street. Erect a 12-foot-tall fence with opaque, solid slats along the southwest corner of the site, starting at a point in line with the fence along the north boundary of KOP 1, and extending to the warehouse building to the west of the RCEC site.
- Staging, material, and equipment storage areas, if visible from public rights-of-way, shall be visually screened with opaque fencing.
- All evidence of construction activities, including ground disturbance due to staging and storage areas shall be removed and remediated upon completion of construction. Any vegetation removed in the course of construction will be replaced on a 1-to-1 in-kind basis. Such replacement planting will be monitored for a period of three years to ensure survival. During this period, all dead plant material shall be replaced.

  Protocol: The project owner shall submit a plan for screening construction activities at the site and staging, material, and equipment storage areas, and restoring the surface conditions of any rights-of-way disturbed during construction of the transmission line and underground pipelines. The plan shall include grading to the original grade and contouring and revegetation of the rights-of-way.

  The project owner shall not implement the plan until receiving written approval of the submittal from the California Energy Commission Compliance Project Manager (CPM).

Verification: At least 60 (sixty) days prior to the start of site mobilization, the project owner shall submit the plan to the CPM for review and approval. If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification, the project owner shall submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days after installing the screening that the screening is ready for inspection.

The project owner shall notify the CPM within seven days after completing the surface restoration that the areas disturbed during construction are ready for inspection.

VIS-2 Prior to the first turbine roll, the project owner shall prepare and implement an approved perimeter landscape plan to screen the power plant from view to the greatest extent possible. Landscaping shall consist of a mix of trees, shrubs, and groundcovers. Fast growing, evergreen species shall be used to ensure that maximum screening is achieved as quickly as possible and year-round. Street trees shall be 24" box size at the time of planting. Other trees used for landscaping on the site shall be a minimum of 15 gallons in size. Suitable irrigation shall be installed to ensure survival of the plantings. Landscaping shall be installed consistent with the City of Hayward zoning ordinance. Plant species shall be selected consistent with the U.S. Fish and Wildlife Services recommendations that plants not provide opportunities for perching by birds of prey.

Protocol: The project owner shall submit a perimeter landscape plan to the City of Hayward for review and comment, and to the CPM for review and approval. The submittal to the CPM shall include the City's comments. The plan shall include, but not be limited to:

1) A detailed landscape, grading, and irrigation plan, at a reasonable scale, which includes a list of proposed tree and shrub species and installation sizes, and a discussion of the suitability of the plants for the site conditions and mitigation objectives.

2) Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project; and

3) A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project.

The project owner shall not implement the plan until the project owner receives approval of the plan from the CPM.

Verification: Prior to the first turbine roll and at least 60 days prior to installing the landscaping, the project owner shall submit the perimeter landscape plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal 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.

The project owner shall notify the CPM within seven days after completing installation of the landscape screening that the planting and irrigation system are ready for inspection.

The project owner shall report landscape maintenance activities, including replacement of dead vegetation, for the previous year of operation in the Annual Compliance Report.

VIS-3 Prior to first turbine roll, the project owner shall treat all project structures and buildings visible to the public a) in appropriate colors or hues that minimize visual intrusion and contrast by blending with the landscape; b) such that those structures and buildings have surfaces that do not create glare; and c) such that they are consistent with local laws, ordinances, regulations, and standards.

The project owner shall submit for CPM review and approval, a specific treatment plan whose proper implementation will satisfy these requirements.

Protocol: The project owner shall submit the treatment plan to the City of Hayward for review and comment, and to the CPM for review and approval. The submittal to the CPM shall include the City's comments. The treatment plan shall include:

1. Specification, and 11" x 17" color simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture;

2) A list of each major project structure, building, tank, transmission line tower and/or pole, and fencing specifying the color(s) and finish proposed for each (colors must be identified by vendor brand or a universal designation);

3) Two sets of brochures and/or color chips for each proposed color;

4) Samples of the proposed treatment and color on any fiberglass materials that would be visible to the public;

5) Documentation that the surfaces to be used on all project elements visible to the public will not create glare;

6) Documentation that non-specular conductors, and non-reflective and nonrefractive insulators will be used on the transmission facilities;

7) A detailed schedule for completion of the treatment; and

8) 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 on site until the project owner receives notification of approval of the treatment plan by the CPM.

Verification: At least 60 (sixty) days prior to ordering the first structures that are color treated during manufacture, the project owner shall submit its proposed treatment plan to the CPM for review and approval.

If required, the project owner shall provide the CPM with a revised plan within 30 (thirty) days of receiving notification that revisions are needed.

Prior to first turbine roll, the project owner shall notify the CPM that all buildings and structures are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-4 Prior to first turbine roll, the project owner shall design and install all permanent lighting such that a) light bulbs and reflectors are not visible from public viewing areas, b) lighting does not cause reflected glare, and c) illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that:

1) Lighting is designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of this outdoor lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;
2) Non-glare light fixtures shall be specified;
3) All lighting shall be of minimum necessary brightness consistent with worker safety;
4) High illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have switches or motion detectors to light the area only when occupied;
5) Parking lot lighting shall be provided in accordance with the City of Hayward Security Standards Ordinance; and
6) A lighting complaint resolution form (following the general format of that in Appendix VR-3) shall be used by plant operations, to record all lighting complaints received and to document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

The project owner shall notify the CPM when the lighting has been installed. If after inspecting the lighting the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, the project owner shall perform the necessary modifications.

Verification: Prior to the first turbine roll, 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, within thirty days of receiving that notification the project owner shall implement the modifications.

VIS-5 All fences and walls for the project shall be non-reflective and treated in appropriate colors or hues that minimize visual intrusion and contrast by blending with the surrounding landscape. Fences and walls for the project shall comply with the applicable requirements in the City of Hayward zoning ordinance that relate to visual resources.

> Protocol: Prior to ordering fences and walls the project owner shall submit to the City of Hayward for review and comment, and to the CPM for review and approval, design specifications for fences and walls and documentation of their conformance with the City of Hayward zoning ordinance. The submittal to the CPM shall include the City's comments.
>
> The project owner shall not order fences and walls until the submittal is approved by the CPM.

Verification: At least 30 days prior to ordering fences and walls, the project owner shall submit the specifications and documentation to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal 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.

The project owner shall notify the CPM within seven days after completing installation of the fencing that the fencing is ready for inspection.

VIS-6 The project owner shall design project signs using non-reflective materials and unobtrusive colors. The project owner shall ensure that signs comply with the applicable City of Hayward zoning requirements that relate to visual resources. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

> Protocol: The project owner shall submit a signage plan for the project to the City of Hayward for review and comment, and to the CPM for

review and approval. The submittal to the CPM shall include the City's comments.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: At least 60 days prior to installing signage, the project owner shall submit the plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the plan 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.

The project owner shall notify the CPM within 7 days after completing installation of the signage that they are ready for inspection.

VIS-7 Prior to the start of commercial operation, the project owner shall treat the major structures of the Advanced Water Treatment (AWT) facility and the buildings housing the project's administrative offices and control room, warehouse, and water treatment laboratory with appropriate architectural treatment if visible from Enterprise Avenue and Whitesell Street. All architectural treatment for the project shall be consistent with the City of Hayward's architectural design guidelines for industrial zoning districts. A specific architectural treatment plan shall be developed for CPM approval to ensure that the treatments do not unduly contrast with the surrounding landscape.

Protocol: The project owner shall submit an architectural treatment plan to the City of Hayward for review and comment, and to the CPM for review and approval. The submittal to the CPM shall include the City's comments. The architectural screening plan shall include:

1) Specification, and 11" x 17" color simulations at life-size scale as seen from Whitesell Street and Enterprise Avenue, of the treatment proposed for use on the AWT structures and project buildings;
2) A detailed schedule for completion of the treatment; and,
3) A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not implement the plan until approved by the CPM.

Verification: At least 60 days prior to start of construction, the project owner shall submit the architectural treatment plan to the CPM for review and approval.

If the CPM notifies the project owner of any revisions that are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall submit to the CPM a revised plan.

Not less than thirty (30) days prior to the start of commercial operation, the project owner shall notify the CPM that the architectural screening is ready for inspection.

The project owner shall provide a status report regarding screening maintenance in the Annual Compliance Report.

VIS-8 The project owner shall reduce the RCEC cooling tower and HRSG visible vapor plumes by the following methods:

- The project owner shall reduce the RCEC cooling tower visible plumes through the use of a plume abated wet/dry cooling tower that has a stipulated plume abatement design point of 38°F and 80 percent relative humidity. An automated control system will be used to ensure that plumes are abated to the maximum extent possible for the stipulated design point.
- The project owner shall reduce the RCEC HRSG exhaust visible plumes through the use of an economizer bypass that is capable of raising the exhaust temperature to a minimum of 270°F. An automated control system will be used to ensure that plumes are abated to the maximum extent possible when raising the exhaust temperature to the stipulated design point.

Verification: At least 30 days prior to first turbine roll, the project owner shall provide to the CPM for review and approval the specifications for the automated control systems and related systems and sensors that will be used to ensure maximum plume abatement for the wet/dry cooling tower and HRSG economizer bypass plume abatement systems.

VIS-9 Prior to commercial operation, the project owner shall install new trailside amenities to offset the blockage of the view of Mt. Diablo from the observation deck of the Hayward Shoreline Interpretive Center. Consistent with Measure 1 of Applicant's Visual Mitigation Plan, the trail amenities shall include, but not necessarily be limited to, benches, free-of-charge viewscopes, and an information kiosk and set of low panels for the display of interpretive information related to Mt. Diablo and other important elements of the regional setting. The project owner shall work with the Hayward Area Recreation and Parks District (HARD) to develop the final designs for these facilities. As part of this measure, the project owner shall provide the HARD with an adequate budget that will allow its Staff to research and prepare the interpretive materials to be mounted

on the kiosk and panels. The project owner shall determine the precise location of the trailside amenities in consultation with the CPM and the HARD.

Verification: Within 12 months of the start of HRSG construction, the project owner shall submit a final design plan for the trailside amenities to the HARD for review and comment and to the CPM for review and approval. If the CPM notifies the project owner that revisions are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall submit a revised plan to the CPM.

Not less than thirty 30 days prior to the first turbine roll, the project owner shall notify the CPM that the trailside amenities are ready for inspection.

VIS-10 Prior to the start of construction, the project owner shall prepare and implement an approved off-site landscaping plan. The project owner shall install trees at the Whitesell Business Park (KOP 1) to screen views of the project from this viewing area to the maximum extent possible. Consistent with Measure 2 of Applicant's Visual Mitigation Plan trees shall be planted in the existing empty planting islands at the Whitesell Business Park. If the landowner agrees, the project owner also shall plant trees in the landscape area near the Whitesell Business Park buildings and outdoor patio area to increase the effectiveness of the landscape screening. Consistent with Measure 3 of the Visual Mitigation Plan, the project owner shall install trees along the west side of the warehouse and industrial park complexes that line the eastern edge of the shoreline wetlands. The extent of the landscaping area, as shown in **Visual Resources Figure 14**, shall be expanded to include the berm from Breakwater Avenue north to Johnson Road. Trees shall be planted close together to create a dense screen. Trees planted along the edge of the Whitesell Business Park parking lot shall be pruned up as they grow to allow westward views from the parking lot to the shoreline open space. Trees planted close to the walls of the warehouses shall be allowed to take on a bush-like form to maximize their screening potential. All tree species shall be fast growing and evergreen and shall be 24" box size when planted. The project owner shall provide an appropriate level of irrigation and fertilization to ensure optimal tree growth, health, and appearance.

Protocol: Prior to start of construction, the project owner shall submit an offsite landscape plan to the City of Hayward for review and comment, and to the CPM for review and approval. The submittal to the CPM shall include the City's comments. The plan shall include, but not be limited to:

1) A detailed landscape, grading, and irrigation plan, at a reasonable scale, which includes a list of proposed tree and shrub species and installation sizes, and a discussion of the suitability of the plants for the site conditions and mitigation objectives.

2) Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project; and

3) A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project.

The project owner shall not implement the plan until the project owner receives approval of the plan from the CPM.

Verification: At least 90 days prior to start of construction, the project owner shall submit the perimeter landscape plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal 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.

The project owner shall notify the CPM within seven days after completing installation of the landscape screening that the planting and irrigation system are ready for inspection.

The project owner shall report landscape maintenance activities, including replacement of dead vegetation, for the previous year of operation in the Annual Compliance Report.

VIS-11 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:

1) All lighting shall be of minimum necessary brightness consistent with worker safety.

2) All fixed position lighting shall be shielded, hooded, and directed downward to minimize backscatter to the night sky and direct light trespass (direct lighting extending outside the boundaries of the construction area).

3) Wherever feasible and safe, lighting shall be kept off when not in use and motion detectors shall be employed.

4) A lighting complaint resolution form (following the general format of that in Appendix VR-3, found on page 4.11-54 of the Final Staff Assessment shall be maintained by plant construction management, to record all lighting complaints received and to document the resolution of that complaint.

Verification: At least 30 (thirty) days prior to the start of ground disturbance, the project owner shall provide to the CPM documentation demonstrating that the lighting will comply with the condition.

If the CPM notifies the project owner that modifications to the lighting are needed, within 30 (thirty) days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

The project owner shall report any lighting complaints and documentation of resolution in the Monthly Compliance Report, accompanied by any lighting complaint resolution forms for that month.

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

Under the Federal Clean Air Act (42 U.S.C. §7401 et seq.), 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 evaluation of those pollutants that violate federal ambient air quality standards. Conversely, PSD is a regulatory process for evaluation of those pollutants that do not violate federal ambient air quality standards. The NSR analysis has been delegated by the United States Environmental Protection Agency (USEPA) to the Bay Area Air Quality Management District. The USEPA determines conformance with the PSD regulations. The PSD requirements apply only to those projects (known as major sources) that exceed 100 tons per year for any pollutant.

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 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."

LOCAL

The project is subject to all applicable Bay Area Air Quality Management District (District or BAAQMD) rules and regulations, briefly described below:

Regulation 2

Rule 1 - General Requirements. This rule contains general requirements, definitions, and a requirement that an applicant submit an application for an authority to construct and permit to operate.

Rule 2 - New Source Review. This rule applies to all new and modified sources. The following sections of Rule 2 are the regulations that are applicable to this project.

Section 2-2-301 - Best Available Control Technology (BACT) Requirement: This rule requires that BACT be applied for each pollutant which is emitted in excess of 10.0 pounds per day.

Section 2-2-302 - Offset Requirement, Precursor Organic Compounds (POC) and Nitrogen Oxides (NOx): This section applies to projects with an emissions increase of 50 tons per year or more of POC and/or NOx. Offsets shall be provided at a ratio of 1.15 tons of emission reduction credits for each 1.0 ton of proposed project permitted emissions.

Section 2-2-303 - Offset Requirements, Particulate Matter Less Than 10 Microns in Diameter (PM10) and Sulfur Dioxide (SO2): If a Major Facility (a project that emits more than 100 tons per year of PM10) has a *cumulative increase* of 1.0 ton per year of PM10 or SO2, emission offsets must be provided for the entire cumulative increase at a ratio of 1.0:1.0.

Emission reductions of nitrogen oxides and/or sulfur dioxide may be used to offset increased emissions of PM10 at offset ratios deemed appropriate by the Air Pollution Control Officer. A facility that emits less than 100 tons of any pollutant may voluntarily provide emission offsets for all, or any portion, of their PM10 or sulfur dioxide emissions increase at the offset ratio required above (1.0:1.0).

Section 2-2-606 - Emission Calculation Procedures, Offsets: This section requires that emission offsets must be provided from the District's Emissions Bank, and/or from contemporaneous actual emission reductions.

Rule 7-Acid Rain. This rule applies the requirements of Title IV of the federal Clean Air Act, which are spelled out in Title 40, Code of Federal Regulations, section 72. The provisions of Section 72 will apply when USEPA approves the District's Title IV program, which has not been approved at this time. The Title IV requirements will include the installation of continuous emission monitors to monitor acid deposition precursor pollutants.

Regulation 6

Regulation 6 - Particulate Matter and Visible Emission. The purpose of this regulation is to limit the quantity of particulate matter in the atmosphere. The following two sections of Regulation 6 are directly applicable to this project:

Section 301 - Ringelmann No. 1 Limitation: This rule limits visible emissions to no darker than Ringelmann No. 1 for periods greater than three minutes in any hour.

Section 310 - Particulate Weight Limitation: This rule limits source particulate matter emissions to no greater than 0.15 grains per standard dry cubic foot.

Regulation 9

Rule 1 - Limitations

Section 301: Limitations on Ground Level Sulfur Dioxide Concentration. This section requires that emissions of sulfur dioxide shall not impact at ground level in excess of 0.5 ppm for 3 consecutive minutes, or 0.25 ppm averaged over sixty (60) minutes, or 0.05 ppm averaged over 24 hours.

Section 302: General Emission Limitation. This rule limits the sulfur dioxide concentration from an exhaust stack to no greater than 300 ppm dry.

Rule 9 - Nitrogen Oxides from Stationary Gas Turbines. This rule limits gaseous fired, SCR equipped, combustion turbines rated greater than 10 MW to 9 ppm @ 15% O2.

Regulation 10

Rule 26 - Gas Turbines - Standards of Performance for New Stationary Sources. This rule adopts the national maximum emission limits (40 C.F.R. §60) which are 75 ppm NOx and 150 ppm SO2 at 15 percent O2. Whenever any source is subject to more than one emission limitation rule, regulation, provision or requirement relating to the control of any air contaminant, the most stringent limitation applies.

BIOLOGY

FEDERAL

- Clean Water Act of 1977

Title 33, United States Code, sections 1251-1376, and Code of Federal Regulations, part 30, section 330.5(a)(26).

- 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.

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 of any bird.

- Birds of Prey or Eggs-Take, Possess, or Destroy

Fish and Game Code section 3503.3 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 Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act or any part of such migratory non-game 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.

• 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.

• Clean Water Act

To verify that the federal Clean Water Act permitted actions comply with state regulations, the RCEC will need to get a Section 401 certification from the San Francisco Bay Regional Water Quality Control Board (SFRWQCB). The Regional Board provides its certification after reviewing the federal Nationwide Permit(s) that is provided by the U.S. Army Corp of Engineers (USACE).

LOCAL

• City of Hayward General Plan, Vegetation and Wildlife Habitats, General
The planting of native vegetation should be encouraged, and whenever possible, vegetation removed during construction should be replaced. The City's remaining riparian plant communities should be protected and development should not encroach into important wildlife habitats. Documented habitats of unique, rare and/or endangered species of plants and wildlife should be protected, and application of toxic chemicals should be kept to a minimum.

• City of Hayward General Plan, Vegetation and Wildlife Habitats, Shoreline
Existing salt marshes should be preserved and new marshes established. Tidal flats and salt ponds of low salinity should be preserved for migratory waterfowl. Saltwater evaporation ponds should be preserved or enhanced in a manner commensurate with continued salt production, and activities that could have adverse effects on marine fisheries should be avoided.

CULTURAL

FEDERAL

Code of Federal Regulations, 36 CFR Part 61. 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.

National Historic Preservation Act, 16 U.S.C. § 470, commonly referred to as Section 106, 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. Regulation revised in 1997 (36 CFR Part 800 et. Seq.) 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 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 a California Register of Historic Places; determines significance of and defines eligible properties. 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 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.

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.”

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.

LOCAL

The City of Hayward encourages preservation of historical resources by maintaining a list of architecturally and historically significant buildings.

EFFICIENCY

FEDERAL

No federal laws apply to the efficiency of this project.

STATE

California Environmental Quality Act Guidelines

CEQA Guidelines state that the environmental analysis "…shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy" (Cal. Code Regs., tit. 14, § 15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project's energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code Regs., tit. 14, § 15000 et seq., Appendix F).

LOCAL

No local or county ordinances apply to power plant efficiency.

FACILITY DESIGN

A lists of laws, ordinances, regulations, and standards (LORS) applicable to each engineering discipline i.e., civil, structural, mechanical and electrical, are described in the AFC (Calpine/Bechtel 2001a, Appendices 10-A through 10-E). Some of these LORS include; California Building Code (CBC), American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM) and American Boiler Manufacturers Association (ABMA).

The City of Hayward Department of Public Works has adopted the recommendations contained in a report by Dames & Moore (1995) as a minimum standard for seismic design of new engineering projects for City facilities. The City of Hayward (the City) requires this report to be used for all Russell City Energy Center utility structures to be owned by the City, which includes the Advanced Water Treatment Unit.

GEOLOGY AND PALEONTOLOGY

FEDERAL

There are no federal LORS for geologic hazards and resources, grading, or paleontologic resources for the project.

STATE

The California Building Code (CBC) 1998 edition is based upon the Uniform Building Code (UBC), 1997 edition, which was published by the International Conference of Building Officials. The CBC incorporates the UBC by reference, and is a series of minimum standards that are used in the investigation, design (Chapters 16 and 18) and construction (including grading as found in Appendix Chapter 33) of civil structures. The CBC supplements the UBC's grading and construction ordinances and regulations.

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts.

Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontologic resource or site, or a unique geologic feature.

Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geologic hazards.

Sections (X) (a) and (b) pose questions about the project's effect on mineral resources.

The Standard Procedures, Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources (SVP 1994) are a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontologic resources, based on the standard-of-practice. They were adopted in October 1994 by a national organization of vertebrate paleontologists (the Society of Vertebrate Paleontologists), and are part of the LORS to which the project is subject.

LOCAL

The City of Hayward Department of Public Works has adopted the recommendations contained in a report by Dames & Moore (1995) as a minimum standard for seismic design of new engineering projects for City facilities. The City of Hayward Department of Community and Economic Development uses the CBC as the minimum design standard for private construction.

HAZARDOUS MATERIALS

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.

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 with ten or fewer buildings intended for human occupancy.

Class 2: Pipelines in locations with more than ten but fewer than 46 buildings intended for human occupancy. This class also includes drainage ditches of public roads and railroad crossings.

Class 3: Pipelines in locations with more than 46 buildings intended for human occupancy, 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).

The natural gas pipeline will be designed for Class 3 service and will meet California Public Utilities Commission General Order 112-D & E and 58-A standards as well as various PG&E 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.

STATE

The California Accidental Release Prevention Program (Cal-ARP) - 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 new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP).

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 Hayward. 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 insure 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."

Local And Regional

The California Building Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit.

The City Of Hayward Zoning Ordinance Article 8 (Ord. No. 83-031 and 84-029) requires compliance with this section's provisions as well as the California Code of Regulations involving hazardous materials. An Administrative Use Permit will be required for the use and storage of certain hazardous materials above threshold quantities. The City Of Hayward Fire Department Hazardous Materials Office is the Administering Agency for the RCEC.

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. The latest revision to Article 80 was in 1997 (UFC, 1997). These articles contain minimum setback requirements for the outdoor storage of ammonia. The administering agency is the City of Hayward Fire Department.

LAND USE

Land use LORS applicable to the proposed project are contained in the City of Hayward's General Plan and Zoning Ordinance. In addition, the Hayward Area Shoreline Planning Agency (HASPA) performs recreation and resource planning for the area; however, this planning agency does not have any land use authority over the project site. As described below, the provisions of the Bay Conservation and Development Commission's (BCDC's) San Francisco Bay Plan are applicable to areas near the project site, but the project site does not lie within the BCDC jurisdiction.

CITY OF HAYWARD GENERAL PLAN

Land uses are controlled and regulated through a series of goals and policies contained in plans adopted by the local jurisdiction that has land use authority over the area (in this case, the City of Hayward). Local agencies with land use authority (i.e., cities and counties) are required to adopt a General Plan for the area within their jurisdiction that sets forth policies regarding land use and other planning topics. The General Plan is the broadest planning document applicable to the site, expressing broad goals and policies to guide local decisions on future growth, development, and conservation. Other local plans, as well the zoning ordinance that regulates land use, must be consistent with the goals and policies expressed in the General Plan.

The Hayward General Plan was adopted in 1986 and has been selectively amended since. In its preface, the Hayward General Plan is described as an official policy document adopted as a guide for making decisions concerning the development of the community according to desired goals. When adopted in 1986, it was intended to shape the future physical development of the city for the next 20 to 25 years. The Hayward General Plan does not have a separate Land Use Element. Instead, the City's land use goals and policies are integrated within the General Policies Plan (adopted May 1986) and the Growth Management Element (adopted July 1993) of the General Plan.

The General Plan designates the project site and surrounding area for industrial land uses. More specifically, the project site is located within an area designated as the Industrial Corridor, which forms a crescent encompassing the western and southern edges of the city. The transmission line and natural gas supply line routes are located entirely within the Industrial Corridor area. According to the City's General Policies Plan, areas designated Industrial Corridor are planned for "business and industrial parks along with supporting office and commercial uses."

The Economic Development chapter of the General Policies Plan only contains one policy statement that is directly relevant to the proposed project: "The City will seek to maintain the efficiency of the Industrial Corridor with road and transit

improvements and encouragement of appropriate land use." The General Policies Plan presents the following strategies to support this policy:

Limit non-industrial uses in the Industrial Corridor which would interfere with the primary use of the area as industrial land.

Improve traffic conditions in the Industrial Corridor by coordinating roadway and transit improvements.

Promote and protect the appearance of the Industrial Corridor to encourage further quality development.

The Growth Management Element does not present any specific goals or objectives for the Industrial Corridor, but does include the following economic development strategies for the area:

Form a Task Force for the Industrial Corridor with business people and residents to identify specific sites or "opportunity areas" for highly desirable uses and to develop circulation recommendations including transit service.

Evaluate the feasibility of the following specific proposals:

Recognize the increased visibility and accessibility of the (Hayward) airport's Hesperian frontage once "A" Street is extended; consider leasing property for commercial development to increase tax revenues.

Adopt the proposed Light Industrial Zone to provide buffer areas between industrial and residential areas.

Provide incentives for desirable uses such as warehouse retail (e.g., commercial zoning, "fast-tracking" processes) as consistent with traffic capacity.

Provide for uses which enhance the tax base and provide lunch-time or off-hours retail opportunities, restaurants, services, etc.

Pursue implementation of proposed circulation improvements through adoption of the Industrial Assessment District or other funding.

The Growth Management Element also recommends the development of an area plan for the Industrial Corridor, but no such plan has yet been developed.

CITY OF HAYWARD ZONING ORDINANCE

Zoning is the specific administrative tool used by a jurisdiction to regulate land use and development, and is one of the primary tools for implementing the goals and policies of the General Plan. Zoning is typically more specific than the General Plan and includes detailed land use regulations and development standards. The City's Zoning Ordinance divides the land in the city into zones that permit different types of uses and imposes development standards appropriate to the uses permitted in each zoning district. The RCEC project site is located in the Industrial (I) zoning district. This zoning applies to lands in the Industrial Corridor that wrap around the western and southern perimeter of the

city. The transmission line and natural gas supply line routes are also located within the "I" District.

The purpose of the "I" District (Section 10-1.1600 of the Hayward Zoning Ordinance) is "to provide for and encourage the development of industrial uses in areas suitable for same, and to promote a desirable and attractive working environment with a minimum of detriment to surrounding properties." The "I" District permits a broad array of industrial uses, administrative and professional offices/services, automobile-related uses, personal services, retail commercial uses, and service commercial uses. Power plants are not specifically listed as a permitted use in the "I" District.

The Zoning Ordinance (Sections 10-1.1625 through 10-1.1635) contains the following development standards applicable to the proposed project:

Lot Requirements	Minimum Lot Size:	10,000 square feet
	Minimum Lot Frontage:	35 feet
	Minimum Average Lot Width:	70 feet
	Maximum Lot Coverage:	None
Yard Requirements	Minimum Front Yard:	10 feet
	Minimum Side Yard:	None
	Minimum Side Street Yard:	10 feet
	Minimum Rear Yard:	None
Height Limits	Maximum Building Height:	No limit

The Zoning Ordinance (Section 10-1.1645) also includes minimum design and performance standards applicable to the construction of industrial and commercial buildings in the "I" District. These include standards for architectural design, fences and walls, landscaping, lighting, outdoor storage, signs, and other design features.

HAYWARD AREA SHORELINE PLANNING PROGRAM

The Hayward Area Shoreline Planning Agency (HASPA) was formed in 1970 to formulate plans and programs for the Hayward shoreline on San Francisco Bay. HASPA's areas of concern are environmental protection, historic preservation, education/research, recreational opportunities, industrial development, and land management. The members of HASPA include the City of Hayward, East Bay Regional Park District, Hayward Area Recreation and Park District, Hayward Unified School District, and San Lorenzo Unified School District. The RCEC site is located within the boundaries of the HASPA planning area, which generally includes the area between the Union Pacific railroad line and the shore of the Bay within Hayward. HASPA is an advisory body in land use matters and the Agency does not have land use authority over the project or the project site.

SAN FRANCISCO BAY PLAN

The Bay Conservation and Development Commission (BCDC) administers the local coastal management program in the San Francisco Bay Plan. The Bay Plan regulates filling and dredging in the Bay and new development within 100 feet of the shoreline, and seeks to protect shoreline areas suitable for high priority water-oriented uses (i.e., ports and harbors). The project site is not located within 100 feet of the shoreline and thus does not lie within the BCDC jurisdiction (Calpine/Bechtel, 2001a). Part Four of the Bay Plan, Development of the Bay and Shoreline, presents the policies most relevant to land use, in particular the section entitled Other Uses of the Bay and Shoreline. The proposed project would fall within the category referred to as “Industry not related to the Bay,” since the project is not dependent on the Bay for any reason (e.g., cooling).

The land use policies of the Bay Plan policies stress the importance of reserving shoreline areas for priority uses (e.g., water-related industry, ports, and recreation) and the importance of providing shoreline access for the public. These policies are not relevant to the project. The Bay Plan does not contain any policies regarding land uses in inland areas or areas adjacent to BCDC jurisdiction. However, the Bay Plan does contain policies related to scenic views that are considered relevant to the proposed project.

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 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 1995) 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 government 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 in **NOISE: Table 2**.

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 (DHS 1977). The Model also contains a definition of "pure tone" based upon one-third octave band sound pressure levels, which can be used to determine whether a noise source contains significant pure tone 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 5 dBA.

Other State LORS include the California Environmental Quality Act (CEQA) and the California Occupational Safety and Health Administration (Cal-OSHA) regulations.

NOISE: Table 2 - Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - L_{dn} 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, November 1998.

California Environmental Quality Act

CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., Title 14, App. G) sets forth

some characteristics that may signify a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in:

a) exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;

b) exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project….

The Energy Commission has interpreted the CEQA criteria such that noise produced by the permitted power-producing facility that causes an increase of more than 5 dBA in the background noise level (L_{90}) at a noise sensitive receiver during the quietest hours of the day is considered a significant effect.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

The construction activity is temporary,

Use of heavy equipment and noisy activities is limited to daytime hours, and

All feasible noise abatement measures are implemented for noise-producing equipment.

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 described above.

LOCAL

Hayward Municipal Code

The City of Hayward maintains a municipal ordinance that protects the community (including any portion of a neighborhood) from loud or disturbing unnecessary noises. Section 4-1.03 of the City Code generally prohibits any repeated or persistent noise that disturbs the peace and quiet of persons in the City. Construction noise affecting residential uses is specifically limited to no more than 6 dB above local ambient levels during nighttime hours (between 7:00 p.m. and 7:00 a.m. Monday through Saturday, or, on Sunday and holidays,

before 10:00 a.m. or after 6:00 p.m.). Emergency activities are not subject to this rule.

Hayward Noise Element

The Noise Element Policies Document adopted by the City of Hayward in 1977 recognizes the state-level goals of managing new and existing sources of community noise. The adopted noise-related programs direct the City to evaluate land use compatibility with significant noise sources and to provide buffers between sources and noise-sensitive uses.

The standards in the City of Hayward Noise Element are similar to those of the state land use compatibility guidelines. The City's planning efforts aim for the maximum day-night outdoor noise levels shown in **NOISE: Table 3**.

NOISE: Table 3 – Hayward Noise Element: Maximum Permissible Noise Levels

Land Use Category	Maximum Noise Level, dBA (L_{dn})
Residential	55
Playgrounds, Neighborhood Parks	70
Offices, Commercial	70
Industrial, Manufacturing, Utilities	75
Source: City of Hayward, Noise Element.	

PUBLIC HEALTH

FEDERAL

Clean Air Act of 1970 section 112 (42 U.S C., section 7412)

This section of the act requires that new sources, which emit more than 10 tons per year of hazardous air pollutants (HAPs) or more than 25 tons per year of any combination of HAPs be equipped with the Maximum Achievable Control Technology (MACT) for these pollutants.

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."

The 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 their control. These laws also require that the new source review rules for each air district include regulations establishing procedures to control the emission of these pollutants. The toxic emissions from natural gas combustion are listed in CARB's California Toxic Emissions Factors (CATEF) database for natural gas-fired combustion turbines. Cal-EPA has developed specific cancer potency estimates for assessing their related cancer risks at specific exposure levels. For non-cancer-causing toxic air pollutants, Cal-EPA established specific no-effects levels (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. The Energy Commission staff (staff) uses these Cal-EPA potency estimates and reference exposure values in its health risk assessments.

California 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. Such facilities may also be required to prepare a quantitative health risk assessment to address the potential health risks involved. The CARB and the Air Quality Management District, which in this

case is the Bay Area Air Quality Management District (BAAQMD), will ensure implementation of these requirements for the proposed project.

LOCAL

Bay Area Air Quality Management District Rule 2-1-316

To ensure compliance with California Health and Safety Code Section 44300 et seq., the Air District established this rule, which requires a risk assessment or risk screening analysis to be performed for new or modified facilities that emit one or more toxic air pollutants in specified amounts. The applicant, Calpine/Bechtel Joint Development (or Calpine/Bechtel) has complied with this requirement.

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)].

SOCIOECONOMICS

FEDERAL

Executive Order 12898, "Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on federal agencies to achieve environmental justice as part of this mission. The order requires the US Environmental Protection Agency (EPA) and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this issue. Agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

Civil Rights Act of 1964, Public Law 88-352, 78 Stat.241 (Codified as amended in scattered sections of 42 U.S.C.) Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national programs in all programs or activities receiving federal financial assistance.

STATE

California Government Code, Sections 65996-65997

As amended by SB 50 (Stats. 1998, Ch. 407, sec.23), these sections state that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

Title 14, California Code of Regulations, Section 15131

Economic or social effects of a project shall not be treated as significant effects on the environment.

Economic or social factors of a project may be used to determine the significance of physical changes caused by the project.

Economic, social and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce and or avoid the significant effects on the environment.

LOCAL

City of Hayward

City of Hayward General Plan, 1998.

Hayward Unified School District

School Impact Fees assessed pursuant to the California Education Code Section 17620 and Government Code Section 65995(b)(2).

SOIL AND WATER RESOURCES

FEDERAL

Clean Water Act

The Clean Water Act (33 USC section 1257 et seq.) requires states to set standards to protect water quality. Point source discharges to surface water are regulated by this act through requirements set forth in a National Pollutant Discharge Elimination System (NPDES) Permit. Stormwater discharges during construction and operation of a facility also fall under this act and must be addressed through either a project specific or general NPDES permit. In California, the nine Regional Water Quality Control Boards (RWQCB) administer the requirements of the Clean Water Act.

Section 404 of the act regulates the discharge of dredged or fill material into waters of the United States, including rivers, streams and wetlands. The Army Corps of Engineers (ACOE) issues site-specific or general (nationwide) permits for such discharges.

Section 401 of the Clean Water Act provides for state certification of federal permits allowing discharge of dredged or fill material into waters of the United States. These certifications are issued by the RWQCBs. For this project, any 401 certification may be handled with Waste Discharge Requirements (WDR's) under the California Water Code.

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. These criteria include the identification of beneficial uses, narrative and numerical water quality standards and implementation procedures. The criteria for the project area are contained in the San Francisco Bay Region Water Quality Control Plan. This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes with elevated temperature to the state's waters. These standards are typically applied to the proposed project through the Waste Discharge Requirements (WDRs) permit. Because wastewater streams other than storm water (permitted separately) are being discharged into the existing East Bay Discharger's Authority (EBDA's) outfall, for which City of Hayward is a co-permittee, or discharged as influent into the City of Hayward's Water Pollution Control Facility (WPCF), which is a sanitary sewer and treatment system, no new WDR's are required for the RCEC Project.

California Water Code

Section 13552.6 of the Water Code specifically identifies that the use of potable domestic water for cooling towers, if suitable recycled water is available, is an unreasonable use of water. The availability of recycled water is based upon a number of criteria, which must be taken into account by the SWRCB. These criteria are 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, 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 recycled water in cooling towers if certain criteria are met. These criteria include that recycled 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 recycled water, appropriate mitigation or control is necessary.

State Water Resources Control Board Policies

The SWRCB has also adopted a number of policies that provide guidelines for water quality protection. The principle policy of the SWRCB which addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power plant Cooling (adopted by the Board on June 19, 1976 as Resolution 75-58). This policy states that use of 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. This SWRCB policy requires that power plant cooling water should come from, in order of priority: wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy also addresses cooling water discharge prohibitions.

LOCAL

County of Alameda

The County of Alameda requires a Flood Canal Tie-In Permit issued by Alameda County Public Works Agency. The application for the Flood Canal Tie-In Permit will include review of drainage plans and flood control issues.

City of Hayward

The City of Hayward's General Plan sets forth policies that address drainage, erosion control, hazardous material spill control, facility siting in flood zones, storm water discharge, and discharge of wastewater to the municipal sewer system. In addition, the City of Hayward will issue a Pretreatment Permit, as part of executing the Commercial Agreement, which will include among other things acceptance of several of the RCEC wastewater streams into the City's Water Pollution Control Facility (WPCF).

The Applicant, as a part of the Energy Commission's certification, will have to comply with grading, excavation and erosion control standards consistent with City of Hayward's requirements.

TRAFFIC AND TRANSPORTATION

FEDERAL

Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the types 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 Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

STATE

Section 353 defines hazardous materials. California Vehicle Code, Sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.

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 substances presenting 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 that are used for the transportation of hazardous materials.

Sections 25160 et seq. addresses 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. In addition, the possession of certificates permitting the operation of vehicles transporting hazardous materials is required.

California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Sections 35780 et seq., require permits for the transportation of oversized loads on county roads.

California Street and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.

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" (Caltrans, 1996).

Local

The Transportation Element in the 1998 Hayward General Plan sets forth goals, policies, and implementation programs related to traffic issues in the city. These goals include minimum level of service (LOS) standards for local intersections. The City requires all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase. The City of Hayward has defined the desirable level of service to be D during peak commute times except when a LOS E may be acceptable due to costs of mitigation or when there would be other unacceptable impacts.

TRANSMISSION LINE SAFETY AND NUISANCE

AVIATION SAFETY

The concern over aviation safety derives from the obstruction hazard to area aircraft from the proposed line's intrusion into the area's air space. The potential for such a hazard is addressed through the following LORS and related requirements.

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 any significant hazards to area aviation.

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.

AUDIBLE NOISE AND RADIO INTERFERENCE

Radio-frequency interference and audible noise are produced from the physical interactions of the line electric fields and the air around the conductor. These impacts are produced through well understood physical mechanisms and are prevented or mitigated through compliance with the following regulations and industry practices:

Federal Communications Commission (FCC) regulations in Title 47 CFR, Section 15.25, which prohibits operation of devices or facilities with fields capable of interference with radio-frequency communication in the fields' impact area. These regulations require all such interference to be mitigated by the operator. The potential for such interference would depend on the distance the source in question.

General Order 52 (GO-52), California Public Utilities Commission (CPUC), which specifies the measures necessary to prevent communication interference as related to power and communication line construction, operation and maintenance.

Regular maintenance, which eliminates the protrusions that, enhance the noise-producing impacts of electric field interactions at the conductor surface.

FIRE HAZARDS

Fire hazards from overhead transmission line operation are mostly related to sparks from conductors of overhead lines or direct contact between the line and nearby trees and other combustible objects. Such fires are prevented through compliance with the following regulations:

General Order 95 (GO-95), CPUC, “Rules for Overhead Electric Line Construction” which specifies tree-trimming criteria to minimize the potential for power line-related fires.

Title 14 Section 1250 of the California Code of Regulations, “Fire Prevention Standards for Electric Utilities” which specifies utility-related measures for fire prevention.

SHOCK HAZARDS

All transmission and subtransmission line operations pose a risk of hazardous or nuisance shocks to humans. These hazardous shocks are those from direct or indirect contact between an individual and the energized line. 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. The nuisance shocks by contrast, are caused by current flow at levels generally incapable of physiological harm. They result most commonly from contact with a charged metallic object in the transmission line environment. The following regulations are intended to prevent such shocks:

GO-95, CPUC. “Rules for Overhead Line Construction” which 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 workers working on or around the line.

Title 8, CCR, Section 2700 et seq., “High Voltage Electric Safety Orders”, which establish essential requirements and minimum standards for safely installing, operating, and maintaining electrical installations and equipment.

National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines, whose provisions are intended to minimize the potential for direct or indirect contact with the energized line.

The National Electrical Safety Code and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE), which provide for effective grounding and other safety-related practices.

ELECTRIC AND MAGNETIC FIELD (EMF) EXPOSURE

Exposure to power-frequency electric and magnetic fields is considered capable of biological impacts at levels orders of magnitude higher than encountered in the power line environment. The issue of continuing concern is the possibility of significant health impacts among humans exposed in their homes at these normally low levels related to power lines and other common sources. Although the potential for such health impacts has not been established, as noted by the applicant (Calpine/Bechtel 2001a, pages 6-24 and 6-25, and 8.9-13), the CPUC (which regulates the design and operation of high-voltage lines in the state) has established specific field-reducing designs for incorporation into the general design for new or modified lines in the state. This was CPUC's way of dealing with the EMF/health issue in light of the present uncertainty. Staff considers incorporation of these field strength-specific design measures as constituting compliance with present CPUC policy. The effectiveness of these field-reducing measures would in each case be reflected in the operational-phase field intensities measured during operation of the line in question. These field intensities could be estimated using established methods and later compared with the actual fields around the operating line. The electric fields are most commonly measured in units of kilovolt/meter (kV/m) while the magnetic fields are measured in units of milliGauss or mG. Measured field strengths could be used to assess each operating line for incorporation of the applicable field-reducing measures.

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.

California Public Utilities Commission (CPUC) General Order 128(GO-128), “Rules for Construction of Underground Electric Supply and Communications Systems,” formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.

The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.

North American Reliability Council (NERC)/Western Systems Coordinating Council (WSCC) Planning Standards merge the WSCC Planning Standards into the NERC Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. Certain aspects of the NERC/WSCC standards are either more stringent or more specific than the NERC standards. These standards allow to plan electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WSCC system is based to a large degree on Section I.A of the standards, “NERC and WSCC Planning Standards with Table I and WSCC Disturbance-Performance Table” and on Section I.D, “NERC and WSCC Standards for Voltage support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) and to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines in a right of way and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WSCC 2001).

NERC Planning Standards provides national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC planning standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Planning Standards are similar to WSCC Standards, certain aspects of the WSCC standards are either more stringent or more specific than the NERC standards for Transmission System Contingency Performance. The NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).

Cal-ISO Grid Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the Cal-ISO transmission grid facilities. The Cal-ISO Grid Planning Standards incorporate the WSCC and NERC Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC and the NERC Planning Standards for Transmission System Contingency Performance. However, the Cal-ISO Standards also provide some additional requirements that are not found in the WSCC or NERC Planning Standards. The Cal-ISO Standards apply to all participating transmission owners 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 (Cal-ISO 2002a).

VISUAL RESOURCES

FEDERAL

The proposed project, including the linear facilities, is not located on federally administered public lands and is not subject to federal regulations pertaining to visual resources.

STATE

None of the roadways in the project vicinity, including State Route (SR) 92, are eligible or designated State Scenic Highways (State Scenic Highway System Web Site). Therefore, no state regulations pertaining to scenic resources are applicable to the project.

LOCAL

The proposed power plant and linear facilities are located within the City of Hayward. Therefore, the project would be subject to local laws, ordinances, regulations, and standards (LORS) pertaining to the protection and maintenance of visual resources. LORS applicable to the proposed project are found in the Hayward General Plan and Zoning Ordinance.

Applicable LORS in the Hayward General Plan regarding visual resources are found in the City Image and Urban Design Elements. The Hayward Zoning Ordinance contains several pertinent LORS related to visual resources. Land uses within the Industrial Zoning District are subject to the “Minimum Design and Performance Standards,” which establish requirements for architectural design, fences, signs, outdoor storage, lighting, and landscaping.

WASTE MANAGEMENT

FEDERAL

Superfund Amendments and Reauthorization Act of 1986

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III and Clean Air Act of 1990 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 Act (codified in 40 C.F.R., § 68.110 et seq.) 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 through preparation of Risk Management Plans. The requirements of these Acts are reflected in the California Health and Safety Code, section 25531 et seq.

Resource Conservation and Recovery Act, RCRA (42 U.S.C. § 6922)

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 the generators of hazardous wastes to comply with requirements regarding:

Record keeping practices which identify the quantities and disposal of hazardous wastes generated,

Labeling practices and use of appropriate containers,

Use of a recording or manifest system for transportation, and

Submission of periodic reports to the EPA or an authorized state agency.

Title 40, Code of Federal Regulations, Part 260

These sections specify the regulations promulgated by the EPA to implement the requirements of RCRA as described above. To facilitate such implementation, the defining characteristics of each hazardous waste are specified in terms of toxicity, ignitability, corrosivity, and reactivity.

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 or 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 specific

criteria and guidelines for classifying such wastes. The act also requires all hazardous waste generators to file specific notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

California Health and Safety Code, Section 41700

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."

Title 14, California Code of Regulations, § 17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)

These regulations specify the minimum standards applicable to the handling and disposal of solid wastes. They also specify the guidelines necessary to ensure that all solid waste management facilities comply with the solid waste management plans of the administering county agency and the California Integrated Waste Management Board.

Title 22, California Code of Regulations, § 66262.10 et seq. (Generator Standards)

These sections establish specific requirements for generators of hazardous wastes with respect to handling and disposal. Under these requirements, all waste generators are required to determine whether or not their wastes are hazardous according to state-specified criteria. As with the federal program, every hazardous waste generator is required to obtain an EPA identification number, prepare all relevant manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, all hazardous wastes are required to be handled only by registered hazardous waste transporters. Requirements for record keeping, reporting, packaging, and labeling are also established for each generator.

LOCAL

The Alameda County Department of Environmental Health has the responsibility for administration and enforcement of the California Integrated Waste Management Act for non-hazardous solid waste for the proposed energy center and advanced water treatment plant.

The City of Hayward Fire Department, Hazardous Materials Office is the local agency, which administers and enforces compliance with the Hazardous Waste Enforcement Act. This agency will also regulate hazardous waste management handling and disposal procedures at the proposed energy center.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970 Congress enacted Public Law 91-596, the Federal Occupational Safety and Health 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 promulgating regulations and 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 congressional 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 USC § 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. Code § 651 et seq. (Occupational Safety and Health Act of 1970);

29 CFR §1910.1 - 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations);

29 CFR §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 CFR §1910.1 – 1910.1500).

STATE

California passed the Occupational Safety and Health Act of 1973 ("Cal/OSHA") as published in the California Labor Code § 6300. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with §337-560 and continuing with §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. Hence, California obtained federal approval of its State health and safety regulations, in lieu of the federal requirements published at 29 CFR

§1910.1 - 1910.1500). The Federal 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 principal tool in ensuring that workers and the public are informed is the Hazard Communication standard first adopted in 1981 (8 CCR §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 CFR §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.

8 CCR §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:

8 CCR §339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act;

8 CCR §337, et seq. Cal/OSHA regulations;

24 CCR § 3, et seq. - incorporates the current addition of the Uniform Building Code;

Health and Safety Code § 25500, et seq. - Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at the facility;

Health and Safety Code § 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 § 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 (H&S Code §18901 et seq.) pertaining to the California Fire Code.

The Uniform Fire Code 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 State's 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.

Applicable local (or locally enforced) requirements include:

1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9) which was adopted by the City of Hayward along with a fire prevention code for the city in 1999 (Ord. No. 99-06);

California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.).

Uniform Fire Code, Article 80, 1997

City of Hayward Fire Department Development Standards

The California Fire Code requires that industrial plants submit plans for review and approval by the City of Hayward Fire Department.

Appendix B

Proof of Service List

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	**Docket No. 01-AFC-7**
Application for Certification for the RUSSELL CITY ENERGY CENTER Project	PROOF OF SERVICE ***[*REVISED 1/24/02]***

I, MAGGIE READ, 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. 01-AFC-7
1516 Ninth Street
Sacramento, CA 95814-5512

* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to*:*

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**Revisions to POS List, i.e. updates, additions and/or deletions*

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I declare under penalty of perjury that the foregoing is true and correct

_____
[signature]

*

**Revisions to POS List, i.e. updates, additions and/or deletions*

* * * *

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:

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**Revisions to POS List, i.e. updates, additions and/or deletions*

Appendix C

Exhibit List

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

Application for Certification For the Calpine Corporation's RUSSELL CITY ENERGY CENTER	**Docket No. 01-AFC-7**

EXHIBIT LIST

EXHIBIT 1: Final Staff Assessment, dated June 10, 2002. Sponsored by Staff; submitted into evidence on June 20, 2002.

EXHIBIT 2: Applicant's Testimony in Support of the AFC for the Russell City Energy Center, dated June 7, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 3: Applicant's Addendum to Testimony, Errata, and Comments on the Final Staff Assessment, dated June 18, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 4: Stipulated Facts Regarding the Visual Impacts of the KFAX Radio Tower Relocation, dated June 19, 2002. Sponsored by Applicant and Staff; submitted into evidence on June 20, 2002.

EXHIBIT 5: Commission Staff's Visual Resources Errata, dated June 19, 2002. Sponsored by Staff; submitted into evidence on June 20, 2002.

EXHIBIT 6: Final Determination of Compliance, dated March 11, 2002. Sponsored by the Staff; submitted into evidence on June 20, 2002.

EXHIBIT 7: Memorandum of Understanding between the East Bay Regional Park District and Calpine Corporation, dated February 14, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 8: Application for Certification for the Russell City Energy Center, Volumes I and II, dated May 22, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 9: Applicant's Responses to Staff Data Requests, dated August 14, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 10: Additional Information in Support of the Application for Certification, dated August 28th, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 11: Applicant's Comments on the Staff Assessment, dated December 10, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 12: Applicant's Responses to the City of Hayward Data Requests, dated August 23, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 13: Applicant's Amended Mitigation Plans (PM_{10} and Visual Resources), dated April 4, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 14: Applicant's Authority to Construct Permit Application, dated May 30, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 15: Emission Reduction Credits Amendment (Docketed as Confidential), dated May 30, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 16: Applicant's Biological Assessment, dated September 21, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 17: Additional Information (Predator Perch and Construction Noise), dated March 29, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 18: Applicant's Project Description and Wetland Mitigation Plan with Hydrologic Study, dated May 15, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 19: Applicant's Supplement to the Application for Certification, dated June 19, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 20: Applicant's Mitigation Plans (Air, 3 Biological Resources, Visual Resources), dated December 21, 2001. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 21: Applicant's Revised Mitigation Plans and Additional Information, dated January 31, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 22: Applicant's Comments on KFAX Radio Tower Relocation Environmental Assessment, dated March 14, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 23: Additional Information (Pile Driver Noise and Visual Mitigation), dated April 16, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 24: Additional Information (Pile Driver Noise, Predator Perch and Visual Mitigation), dated April 30, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 25: Applicant's Amendment to FAA License Application, dated May 6, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 26: Staff's Radio Tower Relocation Environmental Analysis and visual simulations, dated February 5, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

EXHIBIT 27: City of Hayward's Comments on the Staff's KFAX Radio Tower Relocation Analysis, dated February 22, 2002. Sponsored by Applicant; submitted into evidence on June 20, 2002.

Appendix D

Glossary of Terms and Acronyms

GLOSSARY OF TERMS AND ACRONYMS

	A
A	Ampere
AAL	all aluminum (electricity conductor)
AAQS	Ambient Air Quality Standards
ABAG	Association of Bay Area Governments
AC	alternating current
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
AFC	Application for Certification
AFY	acre-feet per year
AHM	Acutely Hazardous Materials
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARCO	Atlantic Richfield Company
ASAE	American Society of Architectural Engineers
ASHRAE	American Society of Heating Refrigeration & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
	B
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAF	Basic American Foods
BARCT	Best Available Retrofit Control Technology
bbl	barrel
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
Bcfd	billion cubic feet per day
b/d	barrels per day
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
Btu	British thermal unit
	C
CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CCAA	California Clean Air Act
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEM	continuous emissions monitoring
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFB	circulating fluidized bed
CFCs	chloro-fluorocarbons
cfm	cubic feet per minute

CFR	Code of Federal Regulations
cfs	cubic feet per second
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
COI	California Oregon Intertie
CPCN	Certificate of Public Convenience & Necessity
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CT	combustion turbine current transformer
CTG	combustion turbine generator
CURE	California Unions for Reliable Energy
	D
dB	decibel
dB(A)	decibel on the A scale
DC	direct current
DCTL	Double Circuit Transmission Line
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DISCO	Distribution Company
DOC	Determination of Compliance
DOE	U.S. Department of Energy
DSM	demand side management
DTC	Desert Tortoise Council
DWR	California Department of Water Resources
	E
EDF	Environmental Defense Fund
Edison	Southern California Edison Company
EDR	Energy Development Report
EFS&EPD	Energy Facilities Siting and Environmental Protection Division
EIA	U.S. Energy Information Agency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELFIN	Electric Utility Financial and Production Simulation Model
EMF	electric and magnetic fields
EOR	East of River (Colorado River)
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ER	Electricity Report
ERC	emission reduction credit {offset}
ESA	Endangered Species Act (Federal) Environmental Site Assessment
ETSR	Energy Technologies Status Report
	F
FAA	Federal Aviation Administration
FBE	Functional Basis Earthquake
FCAA	Federal Clean Air Act
FCC	Federal Communications Commission
FEIR	Final Environmental Impact Report
FIP	Federal Implementation Plan
FONSI	Finding of No-Significant Impact
FERC	Federal Energy Regulatory Commission
FSA	Final Staff Assessment G

GEP	good engineering practice
GIS	gas insulated switchgear geographic information system
gpd	gallons per day
gpm	gallons per minute
GW	gigawatt
GWh	gigawatt hour
	H
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HHV	higher heating value
HRA	Health Risk Assessment
HRSG	heat recovery steam generator
HV	high voltage
HVAC	heating, ventilating and air conditioning
	I
IAR	Issues and Alternatives Report
IEA	International Energy Agency
IEEE	Institute of Electrical & Electronics Engineers
IID	Imperial Irrigation District
IIR	Issues Identification Report
IOU	Investor-Owned Utility
IS	Initial Study
ISO	Independent System Operator
	J
JES	Joint Environmental Statement
	K
KCAPCD	Kern County Air Pollution Control District
KCM	thousand circular mils (also KCmil) (electricity conductor)
KGRA	known geothermal resource area
km	kilometer
KOP	key observation point
KRCC	Kern River Cogeneration Company
kV	kilovolt
KVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt, electric
kWh	kilowatt hour
kWp	peak kilowatt
	L
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emission Rate
lbs	pounds
lbs/hr	pounds per hour
lbs/MMBtu	pounds per million British thermal units
LCAQMD	Lake County Air Quality Management District
LMUD	Lassen Municipal Utility District
LORS	laws, ordinances, regulations and standards
	M
m (M)	meter, million, mega, milli or thousand
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCE	maximum credible earthquake
MCF	thousand cubic feet
MCL	Maximum Containment Level
MCM	thousand circular mil (electricity conductor)
$\mu g/m^3$	micro grams (10^{-6} grams) per cubic meter

MEID	Merced Irrigation District
MG	milli gauss
mgd	million gallons per day
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MPE	maximum probable earthquake
m/s	meters per second
MS	Mail Station
MVAR	megavolt-ampere reactive
MW	megawatt (million watts)
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	megawatt hour
MWp	peak megawatt
	N
N-1	one transmission circuit out
N-2	two transmission circuits out
NAAQS	National Ambient Air Quality Standards
NCPA	Northern California Power Agency
NEPA	National Energy Policy Act National Environmental Policy Act
NERC	National Electric Reliability Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NMHC	nonmethane hydrocarbons
NO	nitrogen oxide
NOI	Notice of Intention
NOL	North of Lugo
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NOP	Notice of Preparation (of EIR)
NOV	Notice of Violation
NRDC	Natural Resources Defense Council
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSPS	New Source Performance Standards
NSR	New Source Review
	O
O_3	Ozone
OASIS	Open Access Same-Time Information System
OCB	oil circuit breaker
OCSG	Operating Capability Study Group
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration (or Act)
	P
PG&E	Pacific Gas & Electric Company
PDCI	Pacific DC Intertie
PHC(S)	Prehearing Conference (Statement)
PIFUA	Federal Powerplant & Industrial Fuel Use Act of 1978
PM	Project Manager particulate matter
PM_{10}	particulate matter 10 microns and smaller in diameter
$PM_{2.5}$	particulate matter 2.5 microns and smaller in diameter
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million by volume, dry
ppt	parts per thousand
PRC	California Public Resources Code

PSD	Prevention of Significant Deterioration
PSRC	Plumas Sierra Rural Electric Cooperative
PT	potential transformer
PTO	Permit to Operate
PU	per unit
PURPA	Federal Public Utilities Regulatory Policy Act of 1978
PV	Palo Verde photovoltaic
PX	Power Exchange
	Q
QA/QC	Quality Assurance/Quality Control
QF	Qualifying Facility
	R
RACT	Reasonably Available Control Technology
RDF	refuse derived fuel
ROC	Report of Conversation reactive organic compounds
ROG	reactive organic gas
ROW	right of way
RWQCB	Regional Water Quality Control Board
	S
SACOG	Sacramento Area Council of Governments
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SANDER	San Diego Energy Recovery Project
SB	Senate Bill
SCAB	South Coast Air Basin
SEGS	Solar Electric Generating Station
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCFM	standard cubic feet per minute
SCH	State Clearing House
SCIT	Southern California Import Transmission
SCR	Selective Catalytic Reduction
SCTL	single circuit transmission line
SDCAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric Company
SEPCO	Sacramento Ethanol and Power Cogeneration Project
SIC	Standard industrial classification
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SMUDGEO	SMUD Geothermal
SNCR	Selective Noncatalytic Reduction
SNG	Synthetic Natural Gas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_4	sulfates
SoCAL	Southern California Gas Company
SONGS	San Onofre Nuclear Generating Station
SPP	Sierra Pacific Power
STIG	steam injected gas turbine

SWP	State Water Project
SWRCB	State Water Resources Control Board
	T
TAC	Toxic Air Contaminant
TBtu	trillion Btu
TCF	trillion cubic feet
TCM	transportation control measure
TDS	total dissolved solids
TE	transmission engineering
TEOR	Thermally Enhanced Oil Recovery
TID	Turlock Irrigation District
TL	transmission line or lines
T-Line	transmission line
TOG	total organic gases
TPD	tons per day
TPY	tons per year
TS&N	Transmission Safety and Nuisance
TSE	Transmission System Engineering
TSIN	Transmission Services Information Network
TSP	total suspended particulate matter
	U
UBC	Uniform Building Code
UDC	Utility Displacement Credits
UDF	Utility Displacement Factor
UEG	Utility Electric Generator
USC(A)	United States Code (Annotated)
USCOE	U.S. Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
	V
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds
	W
W	Watt
WAA	Warren-Alquist Act
WEPEX	Western Energy Power Exchange
WICF	Western Interconnection Forum
WIEB	Western Interstate Energy Board
WOR	West of River (Colorado River)
WRTA	Western Region Transmission Association
WSCC	Western System Coordination Council
WSPP	Western System Power Pool