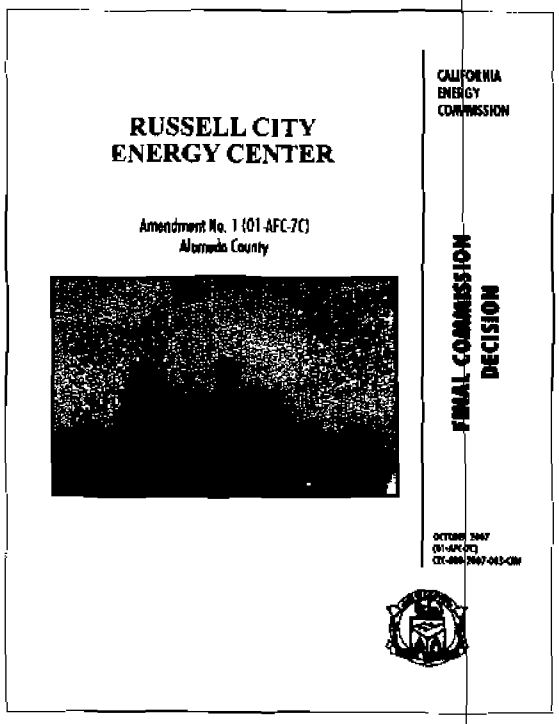
CALIFORNIA ENERGY COMMISSION

RUSSELL CITY ENERGY CENTER

Amendment No. 1 (01-AFC-7C)
Alameda County

FINAL COMMISSION DECISION

OCTOBER 2007
(01-AFC-7C)
CEC-800-2007-003-CMF



CALIFORNIA ENERGY COMMISSION

1516 9th Street
Sacramento, CA 95814
www.energy.ca.gov/sitingcases/russellcity_ammendment/index.html

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

IN THE MATTER OF:

PETITION TO AMEND THE COMMISSION DECISION APPROVING THE APPLICATION FOR CERTIFICATION FOR THE *RUSSELL CITY ENERGY CENTER*

DOCKET No. 01-AFC-7C

Order No. 07-0926-04

COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the ***RUSSELL CITY ENERGY CENTER Amendment No. 1***. The Commission Decision is based upon the evidentiary record of these proceedings (Docket No. 01-AFC-7C) and considers the comments received at the September 12, 2007, 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, which is compiled from the Presiding Member's Proposed Decision, modified by the Errata and Revisions to the Presiding Member's Proposed Decision dated and including the further modifications to Condition of Certification **TRANS-10** proposed by the September 25, 2007 letter from William C. Withycombe, FAA Regional Administrator, to James Adams (Exhibit 110). 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 petition meets all the filing criteria of Title 20, California Code of Regulations, section 1769(a), concerning post-certification project modifications;

2. The project will remain in compliance with all applicable laws, ordinances, regulations, and standards; and

3. There will be no unmitigated significant environmental impacts associated with the proposed modification. Pursuant to the Global Warming Solutions Act of 2006 (AB32), the adoption of measures to mitigate greenhouse gas emissions from the project is within the responsibility and jurisdiction of the California Air Resources Board; the ARB can and should adopt appropriate standards and requirements for greenhouse gas emissions.

ORDER

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

1. The Petition to Amend the ***RUSSELL CITY ENERGY CENTER*** project as described in this Decision, including the two alternative transmission lines connecting the project site to the PG&E Eastshore Substation, is hereby approved and an amended certificate to construct and operate the project is hereby granted.

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

3. 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.

4. This Decision is adopted, issued, effective, and final on September 26, 2007.

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

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

Dated September 26, 2007, at Sacramento, California.

JACKALYNE PFANNENSTIEL
Chairman

-absent-
JAMES D. BOYD
Vice Chair

JOHN L. GEESMAN
Commissioner

ARTHUR H. ROSENFELD
Commissioner

JEFFREY D. BYRON
Commissioner

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INTRODUCTION

A. SUMMARY OF THE PROPOSED DECISION

This Decision contains the Commission's determinations regarding the Petition for Amendment of the September 11, 2002, Commission Decision (2002 Decision) approving the Application for Certification (AFC) for the Russell City Energy Center (RCEC) and includes the findings and conclusions required by law.[1] We **approve** the amendment, for the reasons and subject to the Conditions of Certification set forth in the remainder of this Decision.

The Petition was filed by Russell City Energy Company, LLC (Applicant or Project Owner), a successor in interest to Russell City Energy Company, LLC, the original licensee.[2] This Decision is based exclusively on the evidentiary record established at the hearings on the petition.[3] 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.[4] The Conditions of Certification, which

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[1] The requirements for an amendment of an Energy Commission Decision are set forth in the Commission's regulations, Title 20, California Code of Regulations, section 1769. They are summarized in subsection B, below.

[2] Between the September 11, 2002 Commission Decision and the present, we understand that Russell City Energy Center, LLC, transferred its assets related to the RCEC, including the license approved by the Decision, to Russell City Energy Company, LLC, of which it owns 65% and Aircraft Services Corporation, an indirect subsidiary of General Electric Company, owns 35%. Following that transfer, Russell City Energy Center, LLC changed its name to Calpine Russell City, LLC. The transfer of ownership of the RCEC license was approved by the Energy Commission at its August 1, 2007, Business Meeting.

[3] We also take administrative notice of the September 11, 2002, Commission Decision and the evidence admitted in that proceeding.

[4] References to the evidentiary record, which appear in parentheses, 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 7/19/07, unless otherwise noted. *e.g.*, (Ex. 2, p. 55; RT 123.)

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, originally proposed 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. That proposal was approved by the Energy Commission on September 11, 2002. For various reasons, the licensee was not able to construct the facility on the approved site. Its successor, Russell City Energy Company, LLC, now proposes to build the same facility, with minor modifications in layout and associated equipment on a nearby site located on Depot Road to the southwest of the intersection of Depot Road and Cabot Boulevard. That proposal is described in the Amendment Petition No. 1, dated November, 2006 (Ex. 1), which is the subject of the proceedings leading to this Decision.

The changes to the original project proposed by the amendment are described in detail in the **PROJECT DESCRIPTION** section of this Decision.

During the original decision process and again in the amendment review process, Energy Commission staff (Staff) and the 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, 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 one dispute remained between the Applicant and Staff. In the areas of land use and traffic and transportation, the Staff recommended that the Amendment Petition be denied due to the potential effects of thermal plumes from the exhaust stacks and cooling towers on aircraft flying near the Hayward Executive Airport. The Commission has decided that those concerns do not merit denial of the petition and can be mitigated, as recommended by the Federal Aviation Administration (FAA), with appropriate notifications to pilots. Public comments at the evidentiary hearing expressed concerns about the health effects of operation of the proposed facility on nearby residents. As is discussed in the Air Quality and Public Health sections below, the evidence shows that there will not be significant health impacts and that the project will comply with all health related requirements.

The remaining sections of this Decision describe the changes to the originally approved project, the environmental effects of the amended project and conformance of the amended project with applicable laws, ordinances, regulations and standards (LORS).

B. AMENDMENT PROCESS

The Russell City Energy Center 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 the California Environmental Quality Act (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.) 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.

After a license is approved, it may be amended on the petition of the Applicant. Title 20, California Code of Regulations, section 1769. Depending on the complexity and expected level of public interest, an amendment may be analyzed by Staff and referred directly to the Energy Commission for decision. Alternatively, as is the case in this proceeding, the amendment may be referred to a committee of two Commissioners who take evidence and submit a proposed decision to the Energy Commission. In either event, the Commission must make the following findings before approving an amendment:

- That the amended project will not have significant,[5] unmitigated, environmental effects or that specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the proceeding and that the benefits of the project outweigh the unavoidable significant environmental effects of the project;

- That the amended project will remain in compliance with all applicable laws, ordinances, regulations and standards or that the facility is required for the public convenience and necessity and that there are not more prudent and feasible means of achieving the public convenience and necessity;

[5] The Commission's regulations use the term "significant adverse environmental effect." See, e.g., 20 Cal. Code of Regs., §1755. "Adverse" is redundant, however, in that by definition in the CEQA Guidelines (14 Cal. Code of Regs., § 15382) an effect must be "adverse" in order to be "significant;" positive or beneficial effects can not be significant. Therefore, when we use the terms "significant effect" or "significant impact" in this Decision, the reader may assume that those effects and impacts are adverse.

- That the change in the project will be beneficial to the public, Applicant, or Intervenors; and

- That there has been a substantial change in circumstances since the original approval justifying the change or that the change is based on information which was not known and could not have been known with the exercise of reasonable diligence prior to the original approval.[6]

C. PROCEDURAL HISTORY

On November 17, 2006, the Applicant filed the Amendment Petition No. 1 (Ex. 1), the subject of this amendment proceeding and Decision. The matter was taken up by the Energy Commission's Siting Committee, consisting of Commissioners John L. Geesman and Jeffrey D. Byron. The Committee conducted a Public Informational Hearing and Site Visit on December 15, 2006, during which the Committee and public toured the proposed new project site and the Applicant and Commission staff described the proposed amendment and the process for considering the amendment application. Staff originally proposed, and the Committee issued, a schedule in which Staff would file its Staff Assessment on February 19, 2007.

Delays in obtaining some of the information necessary to prepare the Staff Assessment, resulted in the publication of portions of the Staff Assessment on April 3, 2007. On June 6, 2007, the Committee conducted a status conference to review the progress of the proceeding and issued a revised schedule calling for the publication of a complete Staff Assessment on June 29, 2007. The complete Staff Assessment (Ex. 100) was published on June 29, 2007.

On June 20, 2007, Paul N. Haavik, an interested resident, petitioned to intervene in the proceeding; his petition was granted on July 2, 2007.

[6] Title 20, California Code of Regulations, subsections 1769(a)(3), 1755(d).

On July 19, 2007, a prehearing conference was held, at which it was determined that all issues were ready for hearing. An evidentiary hearing was then conducted, at which evidence from the parties and public comment were taken. With exceptions noted in the topic discussions below, the evidentiary record was closed.

On August 23, 2007, the Committee issued its Presiding Member's Proposed Decision (PMPD). Public and party comments on the PMPD were accepted during a 15-day comment period ending on September 7, 2007 and at a public hearing conducted in Hayward by the Committee, on September 5, 2007. On September 5, 2007, the evidentiary record was reopened and several additional exhibits received into the record. An Errata and Revisions to the PMPD were issued on September 10, 2007.

Response to Comments

Public and party comments on the PMPD ranged from concerns about public health and safety to the details of implementing the fireplace/woodstove replacement and pilot notification programs.

Several people, including Carol Ford of the California Pilots Association and Andy Wilson, disagreed with the conclusion that the restriction of the airspace above the RCEC will not significantly affect pilots operating out of the Hayward Airport. Ms. Ford spoke to the local FAA office and Mr. Wilson to FAA headquarters in Washington, D.C., about the FAA letter in the record as part of Exhibit 103. They are trying to get the FAA to revisit its conclusions. Mr. Wilson requested that the September 12, 2007 Commission Business Meeting consideration of final adoption of the proposed decision be postponed in order to

allow time for the FAA to review its position.[7] The Committee indicated that it would not do so, finding it unlikely that the FAA would be able to conduct such a review in a timely manner. Mr. Wilson provided helpful suggestions about the methods of making pilots aware of the power plant, most of which are incorporated, along with suggestions from the Applicant, Staff, and FAA in Condition **TRANS-10**, below.

Mr. Wilson also suggested that hazardous material response plans include appropriate warnings to pilots via the local control towers at the Hayward and Oakland airports. The mechanisms for doing so are best left to the Risk Management and Hazardous Materials Business Plans required under Condition **HAZ-2**.

Regarding the fireplace/woodstove replacement program, several commenters questioned the value of replacing fireplaces and woodstoves that are not frequently used as well as why the emphasis is on winter time reductions in particulate matter emissions. Staff Air Quality witness Mathew Layton testified that Staff took into account the possibility that some fireplaces that are infrequently used would be replaced. He concluded that it would be unlikely that many fireplace owners would pay the significant unrebated costs to replace a fireplace they weren't using and in the rare instance that they did, the protection against future emissions would be of value. (RT, 75.) Mr. Layton also testified that there is a "strong nexus" between wood smoke and wintertime particulate matter exceedances. (RT, 40.)

[7] On the morning of the September 12, 2007 Business Meeting, the FAA requested a continuance to allow it to further consider the project's effects. The Commission continued its hearing until September 26, 2007. The FAA provided additional comments in letters dated September 18, 2007 (Ex. 109) and September 25, 2007 (Ex. 110). At the September 26 Business Meeting, the evidentiary record was reopened and those letters were admitted into evidence along with the oral testimony of FAA staff representative David Butterfield. The Commission has considered that additional evidence and affirms the findings regarding aviation safety set forth in the Traffic and Transportation section of this Decision.

Mr. Wilson commented that the full cost of fireplace replacements, not a portion, should be paid by the Applicant. We do not believe that would be wise, however, as it would encourage the replacement of infrequently used fireplaces. We believe that the program should remain as proposed, with the amount of the rebate set by the Applicant with a mind to making the program a success. Recall that, should the emission reductions fall short of the stated goal, the Applicant must make up the shortfall with traditional ERCs. See Condition **AQ-SC 13**.

Ernest Pacheco and Audrey LePell commented that greater emphasis should be placed on solar and other renewable energy sources. These alternatives were evaluated in the 2002 Decision and determined to not be viable substitutes for the RCEC.

Audrey LePell expressed her concern about the additional traffic during project construction and its effects on already crowded local streets and highways. The construction traffic impacts are short term, however, and will be mitigated by Condition **TRANS-1**, which requires 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."

Many of the commenters[8] expressed concerns about the health effects of the project. In response we reiterate that the project complies with all air quality regulations, which are health and safety based, and that the public health analysis shows an increased cancer risk of 4 in 1 million in a hypothetical worst case against a background cancer risk of approximately 250,000 in 1 million.

Jane Luckhardt filed comments on behalf of Eastshore Energy, LLC, to the effect that language in the Traffic and Transportation discussion in the PMPD may affect the consideration of its nearby project (06-AFC-6) which is undergoing

Energy Commission review. She requests that any mention of potential cumulative impacts arising from the restriction of airspace around the two power plants be removed from the decision. Nothing in this decision is intended to affect the determination of Eastshore Energy's application. We cannot, however, ignore that the possibility of impacts—direct or cumulative—exists. We have clarified the text and finding to more clearly indicate our intention that Eastshore be judged on its own circumstances and record.

Note Regarding Format of this Decision

The remainder of this Decision is organized by topic in the same order as the 2002 Decision. The discussions focus on whether the amended project would cause any significant environmental impacts, appropriate mitigation for any such impacts, and whether the amended project will continue to comply with all applicable LORS. Where there are no changes to the findings and conclusions in the 2002 Decision, we will not repeat its analysis beyond a brief explanation of our reasons for making that determination. For the convenience of the parties and public, we will, however, reprint all of the conditions of certification for the project, whether or not they are changed from those adopted in 2002.

[8] Including Suzanne Barba, John Gilbertson, Francisco Abrantes, Marie Jackson, Wafaa Aborashed, Stephania Widger, Juanita Gutierrez, JoAnne Gross, Tom Kersten, P.L. Guernsey, and Holly Rogers.

I. PROJECT DESCRIPTION

A. Location

The key feature of the proposed amendment is the relocation of the power plant facilities 1300 feet to the northwest of the approved location (300 feet boundary to boundary). The new project site abuts and extends to the south from Depot Road and is west of the intersection of Depot Road and Cabot Boulevard in the City of Hayward in Alameda County.[9] The new site is west of the City's Water Pollution Control Facility (WPCF), the source of treated wastewater for its cooling system. The power plant's fenced area will be 16.5 acres. See **Figure 2 - PROJECT DESCRIPTION** for an aerial view of the approved and new locations along with other key project features such as the natural gas and transmission line routes. (Ex. 100, p. 3.1, Ex. 101, p. 4.)

B. Power Plant

The amended project will continue to 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; 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. The approved project was designed to operate as a base load facility. (Ex. 100, pp. 3-1-3.2.) See **Figure 1 - Project Description** for the facility and equipment configuration of the amended project.

[9] At the time the Amendment Petition was filed, the new site was partially in the City of Hayward and partially in the unincorporated area of Alameda County. On March 5, 2007, annexation proceedings were completed which brought all of the site within the City. (Ex. 100, p. 4.5-6.)

To control emissions of air pollutants, RCEC will have gas turbines with dry, low 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. (Ex. 100.) 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).

The amendment proposes increases in daily emissions and emissions limits due to changes in turbine rated fuel capacities, fuel specifications, start-up and shutdown frequencies and durations, cooling tower water quality, and lessons learned from commissioning other combined cycle power plants. Short-term emission limits for NOx, carbon monoxide (CO), precursor organic compounds (POC), sulfur oxides (SOx), ammonia (NH3), and particulate matter less than 10 and 2.5 microns (PM10 and PM2.5) are affected by the amendment request. However, annual emissions limits and District-required emission reduction credit quantities (offsets) are unchanged. (Ex. 100, p. 3-2.)

The amendment proposes to modify the PM10 Mitigation Plan (Energy Commission required mitigation) to include emission reduction credits as an option. The project will use BACT to control NOx, POCs, sulfur dioxide (SO_2), and PM10/2.5 emissions. (Ex. 100, p. 3-2.)

C. Natural Gas Facilities and Transmission Line

The natural gas pipeline route and a small portion (approximately 500 to 1,000 feet) of the transmission line route would be re-located for the amended project. Natural gas would be delivered to the new location via a new gas line from Pacific Gas and Electric Company's (PG&E) line 153 located along the Union Pacific Railroad easement to the east of the project. The natural gas pipeline would run entirely under Depot Road to the easement for a distance of

approximately 3,800 feet (0.7 mile). Gas compressors and a metering station are located at the north end of the project site.

The proposed new 230 kV transmission line would run in the existing 115 kV Grant-Eastshore transmission corridor between the RCEC and the PG&E Eastshore substation. (The use of the existing PG&E corridor remains unchanged.) There are two alternatives for the new route, Alternative 1 and Alternative 2 which are shown on **Figure 2 - PROJECT DESCRIPTION.**

Alternative 1 would extend from the RCEC switchyard east to the eastern edge of the RCEC property and then north towards Depot Road. It would then turn east and run approximately 230 feet to the existing Grant-Eastshore 115 kV corridor. The remaining portion of the generation tie-line would run parallel to the existing 115 kV line for approximately 6,780 feet to the Eastshore substation. The entire Alternative 1 generation tie-line route from the RCEC property to the Eastshore substation would be approximately 7,010 feet (1.3 miles) long.

Alternative 2 would run from the RCEC switchyard east to the eastern edge of the RCEC property and then south to the southern edge of the RCEC property. It would then turn east and run approximately 960 feet along the southern boundary of several parcels that face Depot Road (also the northern boundary of the City of Hayward WPCF), to the Grant-Eastshore 115 kV transmission corridor. The segment from the existing Grant-Eastshore 115 kV transmission corridor to the Eastshore substation will be approximately 5,460 feet. This entire route would be approximately 6,410 feet (1.2 miles) long. (Ex. 100, pp. 3-2 – 3-3.)

D. Transmission Systems Improvements

The original System Impact Study (SIS) for the RCEC identified impacts to the Eastshore-San Mateo 230 kV transmission line with the addition of the RCEC, and indicated that it would be necessary to reconductor this line. The updated SIS has, in addition, identified a need for reconductoring seven miles of the Eastshore to Dumbarton 115 kV transmission line. Permitting of these actions falls under the jurisdiction of the California Public Utilities Commission because they will take place beyond the first point of the RCEC's interconnection with the electric grid. (Ex. 100, p. 3-3.)

E. Water Supply and Waste Water Treatment

The cooling and process water used at RCEC will be tertiary treated recycled water. Quantities will be slightly reduced from the original proposal—3,600 acre feet of water per year versus the previous 3,730 acre feet. The approved advanced wastewater treatment plant (AWT) will be replaced by a Title 22 Recycled Water Facility (RWF), located east of the power block on the new project site. Cooling wastewater from the plant will no longer be delivered to the WPCF for reuse but instead will be processed in a zero liquid discharge (ZLD) system located to the west of the switchyard. (Ex. 100, p. 3-3.)

F. Site Layout

Numerous minor adjustments to the equipment and site layout are proposed in the amendment petition. Equipment additions or subtractions from the approved project are:

- The standby generator is removed from the project.
- The architectural treatment of the HRSG units, HRSG stacks, and the cooling towers (the "Wave") is eliminated.

- A cooling tower chemical feed pavilion is placed south of the ZLD area, to the east of the cooling tower.
- The stormwater retention basin is eliminated.
- A single recycled water storage tank replaces the two final product water storage tanks.
- One of the two demineralized water storage tanks is eliminated.
- The cooling tower now has nine cells instead of ten cells.

The following changes in equipment locations are proposed:

- The cooling tower is realigned from a north-south orientation to a northwest-southeast orientation.
- The administration/control building area is moved to the southwestern corner of the project site.
- The aqueous ammonia tank is moved to the southeastern corner of the project in between the eastern combustion turbine and the RWF.
- A recycled water storage tank is placed adjacent to the northeast corner of the power block, southeast of the proposed switchyard.
- The demineralized water storage tank is placed to the northwest of the power block, adjacent to the cooling tower.
- The fire water storage tank is placed in the northwest corner of the power block.
- The fire pumps are moved to the northwest corner of the power block adjacent to the fire water storage tank.
- The warehouse is placed at the northern end of the project site.
- The fuel gas yard and compressor area are moved to the north end of the project location, just north of the switchyard, and adjacent to the warehouse (a separate PG&E gas metering yard will be located adjacent to Depot Road).
- The gas compressors are now located outdoors instead of inside a building.
- The steam turbine is moved slightly north so that it is parallel to the combustion turbines.
- The laboratory and sample panel is separated from the administration building and is now located in an enclosure under the east-west pipe rack.
- The water treatment equipment is separated from the administration building with water treatment equipment now located in a pavilion north

of the ZLD area and cycle chemical feed systems located in a pavilion east of the administration building.

- The unit auxiliary transformers and power distribution center are now located at the east end of the east-west pipe rack, whereas previously they were located just south of the CTG generator step-up transformers.
- The combustion turbine inlet air filters are now located above the generators instead of east of the respective combustion turbines.
- It is no longer necessary to relocate the KFAX radio towers to accommodate the project. (Ex. 100, pp. 3-3 – 3-5.)

G. Construction and Operation

The Applicant proposes beginning construction of the project in the second quarter of 2008 and take approximately 25 months to complete it. Commercial operation is expected to begin by the summer of 2010. The construction work force is expected to peak at 650 workers in month 14. Once the new units are on line, the operational staff is expected to be about 25 employees. The capital cost of the project is expected to be approximately $600 million. (Ex. 100, p. 3-5.)

H. Facility Closure

The planned life of the RCEC facility is 30 years or longer. Whenever the facility is closed, either temporally or permanently, the closure procedures will follow the described plan provided in this Decision and any additional LORS in effect at that time.

I. Findings Specific to an Amendment

As we note in subsection B of the **Introduction**, above, in addition to the findings necessary to approve an initial power plant license, two additional findings are required in order to approve an amendment to a license. They are 1) that the change in the project will be beneficial to the public, Applicant, or intervenors

and 2) that there has been a substantial change in circumstances since the original approval justifying the change or that the change is based on information which was not known and could not have been known with the exercise of reasonable diligence prior to the original approval.

1. Benefits

Throughout this Decision, we describe various benefits that will accrue from the construction and operation of the RCEC at the new location proposed in the amendment. They include, additional generation capacity to serve the residents and businesses in the San Francisco Bay area, employment opportunities for construction workers and plant operators, and property tax revenues for the City of Hayward, Alameda County, and various local districts and agencies. With the new power plant location it is no longer necessary to relocate the KFAX radio towers. For the Applicant, this amendment presents an opportunity to actually build and operate the power plant as it has a contract to sell its electricity to PG&E, a necessary prerequisite to obtaining financing for the project.

2. Changed Information or Circumstances

The Applicant, in the Amendment Petition, explains the change in information and circumstances as follows:

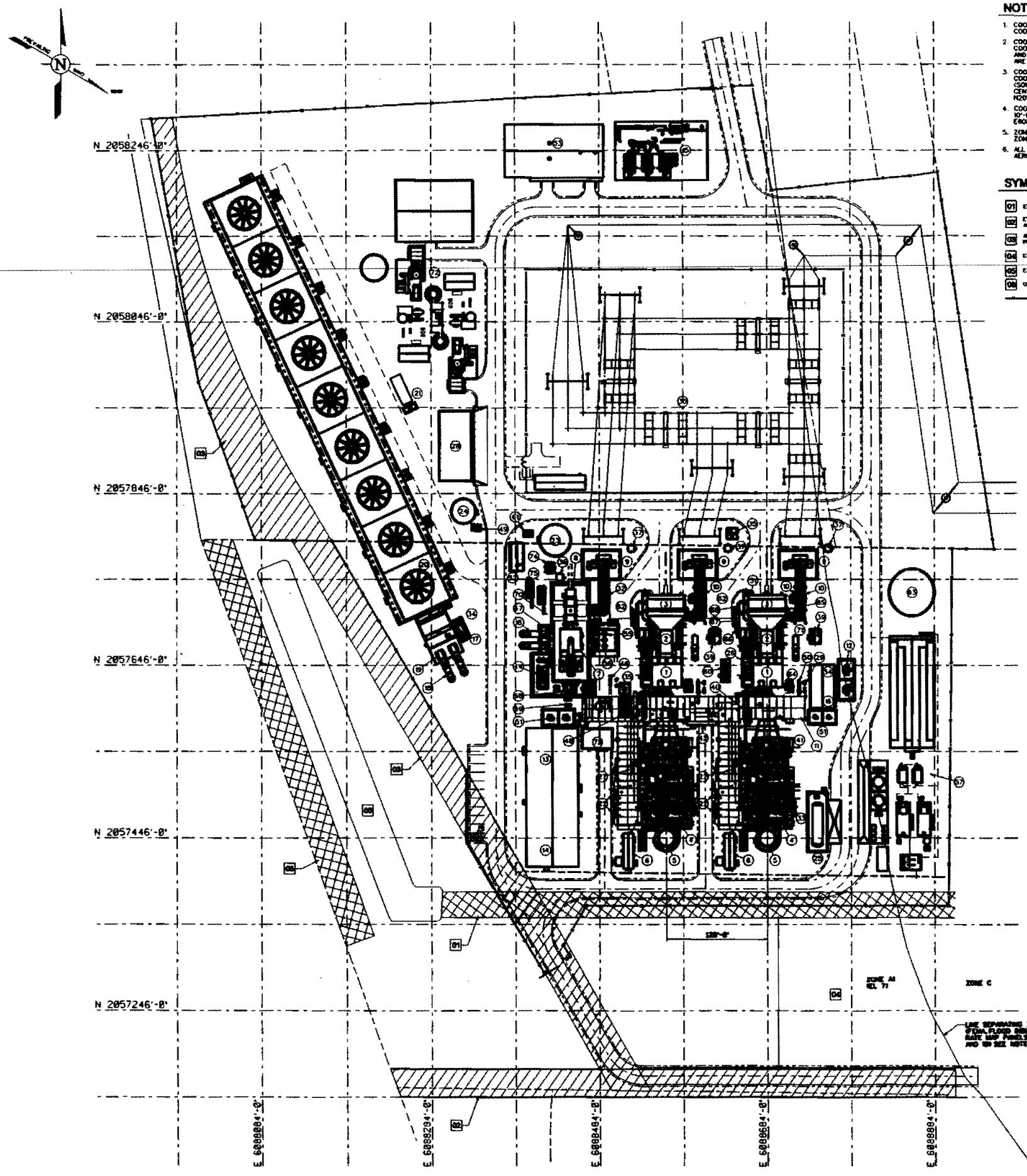
These proposed changes are based on information that became known to the petitioner after the project was certified. Specifically, portions of the project location were no longer feasible to acquire. In addition, property became available that was not previously available, and in a location that will reduce environmental impacts and provide greater benefits to the local community. (Ex. 1, p. 1-3.)

FINDINGS AND CONCLUSIONS

Based upon the evidence, the Commission finds as follows:

1. The change in the project will be beneficial to the public, Applicant and intervenor by providing additional local generating capacity, construction and operations employment, tax revenues and reduced environmental impacts compared to the approved project; and

2. There has been a substantial change in circumstances since the original approval justifying the change in that the Applicant no longer is able to purchase all of the original project site and the new proposed site, not available during the original proceeding, has become available for purchase.



NOTES:

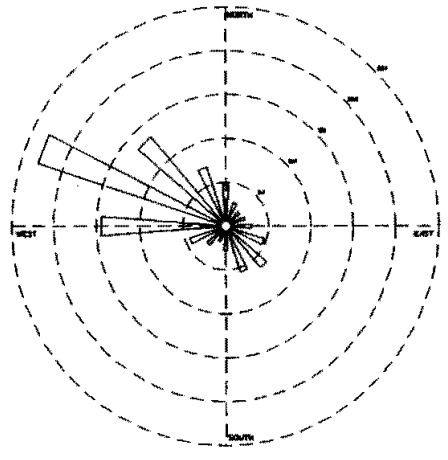
1. COORDINATES LISTED ARE STATE PLANE NAD83, CALIFORNIA, ZONE 3 COORDINATES.
2. COORDINATE FOR TOP OF HRSG FOUNDATION ELEVATION IS 10'-0". COORDINATES FOR CENTERLINE OF HRSG #1 STACK ARE E6088684.000' AND N2057446.000'. COORDINATES FOR CENTERLINE OF HRSG #2 STACK ARE E6088584.000' AND N2057446.000'.
3. COORDINATE FOR TOP OF COOLING TOWER FAN ELEVATION IS 67.17'. COORDINATES FOR CENTERLINE OF COOLING TOWER FAN #1 (SOUTH) ARE E6088286.980 AND N2057737.784'. COORDINATES FOR CENTERLINE OF COOLING TOWER FAN #9 (NORTH) ARE E6088084.103' AND N2058172.822'.
4. COORDINATE FOR TOP OF FIRE PUMP HOUSE FOUNDATION ELEVATION IS 10'-0". COORDINATES FOR CENTERLINE OF FIRE PUMP HOUSE ARE E6088386.000' AND N2057772.500'.
5. ZONE A1 - AREAS OF 100-YR FLOOD, BASE FLOOD ELEVATION OF 7 FT. ZONE C - AREAS OF MINIMAL FLOODING.
6. ALL BOUNDARY INFORMATION IS APPROXIMATE BASED ON PARCEL MAPS, AERIAL PHOTOS AND FIELD WORK.

SYMBOL LEGEND:

- 01 EFFLUENT LINE - 30" WIDE.
- 02 ESTIMATED LOCATION AND WIDTH EASEMENT FOR CITY ACCESS FROM ENTERPRISE AVE TO SLUDGE BEDS - 30' WIDE
- 03 APPROXIMATE LOCATION FOR 60" EBDA EFFLUENT PIPELINE - 60' WIDE
- 04 ESTIMATED LOCATION OF EXISTING COAGULATION BASIN
- 05 EXISTING STORM CHANNEL TO REMAIN AN OPEN DITCH 30' WIDE
- 06 OPEN EFFLUENT DITCH
- FENCE

EQUIPMENT LEGEND:

1. COMBUSTION TURBINE
2. CT GENERATOR
3. CT AIR INLET SYSTEM
4. HRSG
5. HRSG STACK
6. CEM/HRSG POWER DISTRIBUTION CENTER
7. STEAM TURBINE
8. ST GENERATOR
9. GENERATOR STEPUP TRANSFORMER
10. GENERATOR BREAKER
11. PIPE RACK
12. UNIT AUXILIARY TRANSFORMERS
13. BOP ELECTRICAL CONTROL BLDG
14. ADMIN/CONTROL ROOM BLDG
15. FUEL GAS METERING & COMPRESSORS
16. AUX POWER DISTRIBUTION CENTER
17. AUXILIARY COOLING WATER PUMP
18. CIRCULATING WATER LINES
19. CIRCULATING WATER PUMPS
20. COOLING TOWER
21. AUXILIARY TRANSFORMERS & COOLING TOWER POC
22. BOILER FEED PUMPS
23. SERVICE / FIRE WATER STORAGE TANK
24. DEMIN. WATER STORAGE TANK
25. AMMONIA STORAGE TANK, PUMPS & VAPORIZER
26. CT HYDRAULIC UNIT
27. BLOWDOWN TANK AND SUMP
28. COOLING TOWER CHEM FEED PAVILION
29. FUEL GAS KNOCKOUT DRUM/ DRAIN TANK
30. SWITCHYARD
31. WATER WASH SKID
32. ISO PHASE BUS DUCT
33. AMMONIA INJECTION SKID
34. OIL/WATER SEPARATOR (ABOVE GROUND)
35. OIL/WATER SUMP AND PUMPS
36. ST EQUIP DELUGE VALVE STATION
37. TRANSFORMER/FIRE PROTECTION DELUGE VALVE HOUSE
38. NOT USED
39. INLET FOGGING SKID
40. ROTOR AIR COOLER
41. DUCT BURNER SKID
42. SAMPLE PANEL & WATER LAB
43. NOT USED
44. STG LUBE OIL SKID
45. GLAND STEAM SKID (NOT SHOWN)
46. GLAND STEAM CONDENSER
47. CONDENSER
48. AIR COMPRESSORS (UNDER PIPE BRIDGE)
49. DEMIN. WATER PUMPS
50. FUEL GAS PERFORMANCE HEATER
51. SUS TRANSFORMERS
52. FIRE PUMP SKID ENCLOSURE
53. WAREHOUSE
54. DC AND UPS SYSTEM
55. CONDENSATE PUMPS
56. CONDENSATE STRAINERS
57. TITLE 22 AREA
58. STG EHC SKID
59. CLOSED COOLING WATER PUMPS & HEAT EXHCANGERS
60. FUEL GAS DEWPOINT HEATER
61. SERVICE WATER PUMPS
62. CRANE AREA / MAINTENANCE
63. RECYCLED WATER STORAGE TANK
64. MAIN & PILOT FUEL GAS FILTER SEPARATOR
65. VT & SURGE CUBICLE
66. CT MECHANICAL PACKAGE
67. CT ELECTRICAL PACKAGE
68. CT STARTING PACKAGE
69. ST SEAL OIL SKID (NOT SHOWN)
70. BULK HYDROGEN & CO2 STORAGE (TRAILER MOUNT)
71. WATER WASH TANK (UNDERGROUND)
72. ZERO LIQUID DISCHARGE (ZLD) AREA
73. HRSG CYCLE CHEM FEED PAVILION
74. THY/FCB CUBICLES
75. NON CONDENSABLE GAS REMOVAL SKIDS

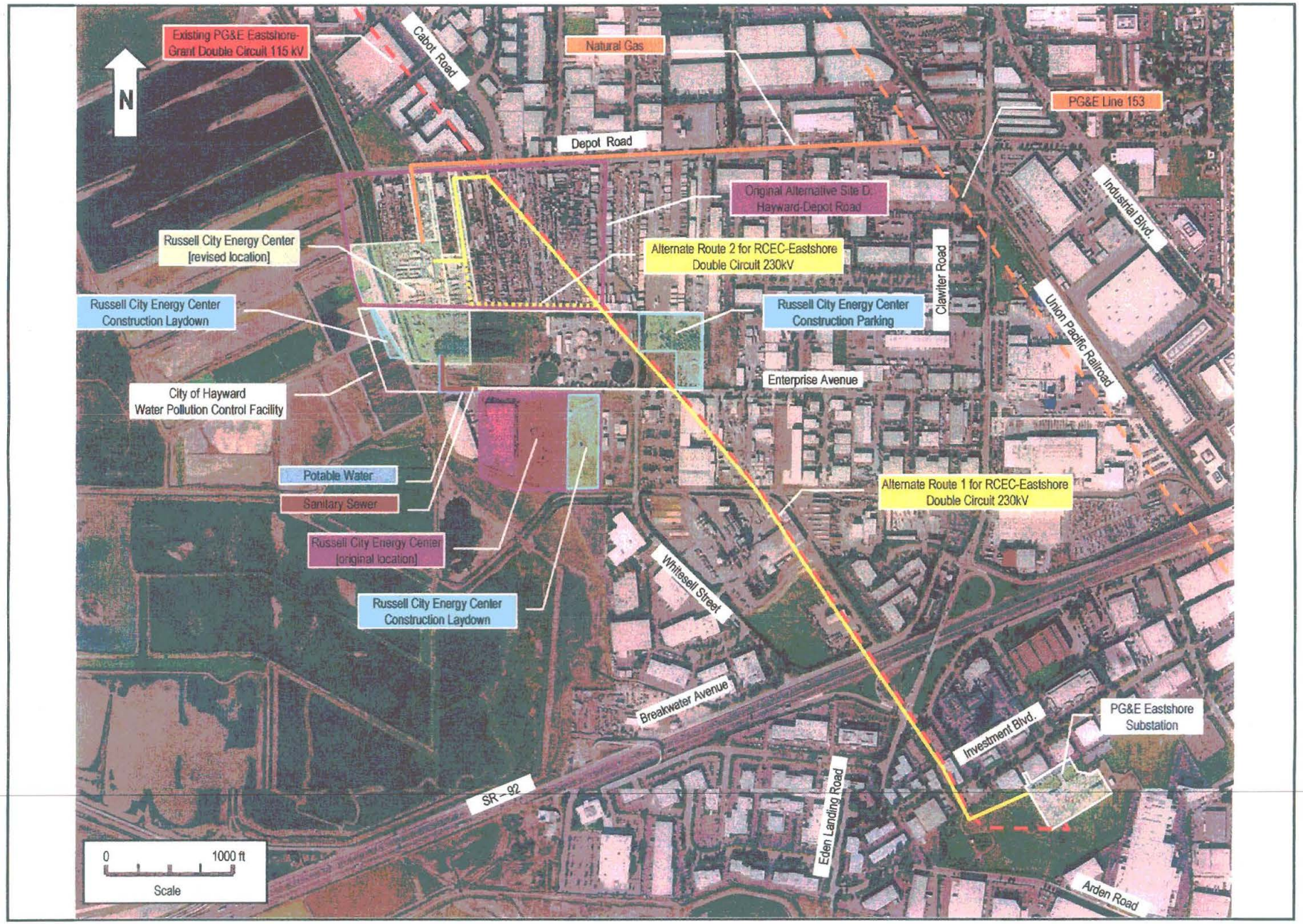


60 0 60 120 180
SCALE: 1" = 60'

FIGURE 1
PROJECT DESCRIPTION
Source: Exhibit 100

FIGURE 2 - PROJECT DESCRIPTION

SOURCE: Exhibit 100



II. PROJECT ALTERNATIVES

COMMISSION DISCUSSION

Neither party has directly addressed this topic in its testimony regarding the Amendment Petition. However, some of the testimony is relevant.

The proposed new project site was, in fact, considered as one of the alternative sites in the 2002 proceeding. It was described as "Depot Road in Hayward" in the 2002 Decision at page 19, as Alternative Site D by the Applicant in its AFC at Vol. 1, page 9-5, and as Alternative Site D in the Staff's Final Staff Assessment for the AFC at page 6.6. Because no significant environmental effects of the RCEC were then found, the 2002 Decision did not need to, nor did it attempt to weigh the relative merits of the alternative sites against the then proposed project location. A similar situation exists here in that we have found no significant effects from the amended project and need not compare the new location to alternative sites or technologies. We do note, however, that the 2002 Decision found that there were no feasible technology alternatives such as geothermal, solar, or wind resources capable of meeting project objectives nor would the no project alternative avoid any significant impacts. Regarding the alternative sites, the testimony on other topics discloses that the new project site proposed in the Amendment Petition would, on balance, have fewer potential impacts than the original site.[10]

[10] Remembering, of course, that neither site would cause any significant impacts after the implementation of the mitigation measures adopted by the Commission.

III. COMPLIANCE AND CLOSURE[11]

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,

[11] Unlike other topics in the Decision, this section replaces, rather than supplements, its counterpart in the 2002 Decision. Since the adoption of the 2002 Decision, Staff's format for its compliance monitoring and closure conditions has changed. Formerly it consisted of a long narrative without specifically numbered conditions. Now, while there are numbered conditions, the format remains largely a narrative.

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

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

PRE-CONSTRUCTION SITE MOBILIZATION

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

CONSTRUCTION GROUND DISTURBANCE

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

CONSTRUCTION GRADING, BORING, AND TRENCHING

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

Construction

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

1. the installation of environmental monitoring equipment;
2. a soil or geological investigation;

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

START OF COMMERCIAL OPERATION

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

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

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

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

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate Energy Commission staff and management.

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings 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 ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight, and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

ENERGY COMMISSION RECORD

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

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

all monthly and annual compliance reports filed by the project owner;

all complaints of noncompliance filed with the Energy Commission; and

all petitions for project or condition of certification changes and the resulting Staff or Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

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

COMPLIANCE CONDITIONS OF CERTIFICATION

UNRESTRICTED ACCESS (COMPLIANCE-1)

The CPM, responsible Energy Commission staff, and 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 (COMPLIANCE-2)

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

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

COMPLIANCE VERIFICATION SUBMITTALS (COMPLIANCE-3)

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM, 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. providing appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of work or other evidence that the requirements are satisfied.

Verification lead times (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
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 request in its submittal cover letter and include a detailed explanation of the effects on the project if this date is not met.

PRE-CONSTRUCTION MATRIX AND TASKS PRIOR TO START OF CONSTRUCTION (COMPLIANCE-4)

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

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

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

If the project owner anticipates starting project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. This is important 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 the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change based upon the Commission Decision.

Compliance Reporting

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

COMPLIANCE MATRIX (COMPLIANCE-5)

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

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

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

MONTHLY COMPLIANCE REPORT (COMPLIANCE-6)

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and eight 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 submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to conditions of certification;
7. a listing of any filings submitted to, or permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;
9. a listing of the month's additions to the on-site compliance file; and

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

ANNUAL COMPLIANCE REPORT (COMPLIANCE-7)

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

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

CONFIDENTIAL INFORMATION (COMPLIANCE-8)

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any

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

ANNUAL ENERGY FACILITY COMPLIANCE FEE (COMPLIANCE-9)

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual fee currently seventeen thousand six hundred seventy six dollars ($17,676), which will be adjusted annually on July 1. The initial payment is due on the date the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office, California Energy Commission, 1516 9th St., MS-2, Sacramento, CA 95814.

REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS (COMPLIANCE-10)

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

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

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

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

Facility Closure

At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to

foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made that provide the flexibility to deal with the specific situation and project setting that exist at the time of closure. Laws, Ordinances, Regulations and Standards (LORS) pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure.

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

Closure Definitions

PLANNED CLOSURE

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

UNPLANNED TEMPORARY CLOSURE

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

UNPLANNED PERMANENT CLOSURE

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

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

PLANNED CLOSURE (COMPLIANCE-11)

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To

ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to commencement of closure activities. The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

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

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

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

UNPLANNED TEMPORARY CLOSURE/ON-SITE CONTINGENCY PLAN (COMPLIANCE-12)

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

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less 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 unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

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

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

UNPLANNED PERMANENT CLOSURE/ON-SITE CONTINGENCY PLAN (COMPLIANCE-13)

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

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

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

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

Post Certification Changes to the Energy Commission Decision: Amendments, Ownership Changes, Insignificant Project Changes, and Verification Changes (COMPLIANCE-14)

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

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

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

AMENDMENT

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

approval by the full Commission. This process takes approximately two to three months to complete, and possibly longer for complex project modifications.

CHANGE OF OWNERSHIP

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

INSIGNIFICANT PROJECT CHANGE

Modifications that do not result in deletions or changes to conditions of certification, that are compliant with laws, ordinances, regulations, and standards and do not result in a potential significant environmental impact may be authorized by the CPM as an insignificant project change pursuant to section 1769(a) (2). This process usually takes less than one month to complete, and it requires a 14-day public review of the Notice of Insignificant Project Change that includes Staff's intention to approve the modification unless an objection is filed.

VERIFICATION CHANGE

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

CBO DELEGATION AND AGENCY COOPERATION

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

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

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900.

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

Moreover, to ensure compliance with the terms and conditions of certification and applicable LORS, delegate agencies are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

NONCOMPLIANCE COMPLAINT PROCEDURES

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

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.

INFORMAL DISPUTE RESOLUTION PROCEDURE

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

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

The 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 brought before 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 working days of the CPM's request, provide a written report to the CPM of the results of the investigation, including corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report, within 48 hours, followed by a written report filed within seven 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 proposed or undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and Staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; 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 that 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 with the Energy Commission's Dockets Unit. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1230.

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

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

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.)

IV. ENGINEERING ASSESSMENT

A. FACILITY DESIGN

The written testimony of Staff's witness, Shahab Khoshmashrab, indicates that the proposed project changes will not change the findings and conclusions in the 2002 Decision. (Ex. 100, pp. 5.1.1 – 5.1.17.) One of the previously identified LORS—the Dames & Moore (1995) Seismic Retrofit Study for the City of Hayward Utility Structures that would apply to the Advanced Water Treatment Facility—is no longer applicable due to the deletion of that facility from the project. Since the original Conditions of Certification were adopted, the California Building Code (CBC) has been revised; references to the CBC in the Conditions should now be to the 2007 version. Those revisions have been made to the Conditions of Certification, below.

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.

2. The revised Conditions of Certification set forth below are appropriate and 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.

3. The Facility Design aspects of the amended project do not create significant direct or cumulative environmental effects.

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 civil, structural, mechanical, and electrical engineering aspects.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the 2001 California Building 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.) All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

In the event that the initial engineering designs are submitted to the CBO when a successor to the 2001 CBC is in effect, the 2001 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 Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2001 CBC, Section 109 – Certificate of Occupancy].

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
Administration Building W/Control Room Structure, Foundation and Connections	1
Title 22 Recycled Water Facility 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
Zero Liquid Discharge Facility Structure, 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

Equipment/System	Quantity (Plant)
Chlorination Skid 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 2001 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

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

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

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

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 [2001 CBC, Section 104.2, Powers and Duties of Building Official].

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

A: The civil engineer shall:

1. 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.

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 report;
2. Prepare the soils engineering reports required by the 2001 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 2001 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 2001 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 [2001 CBC, section 104.2.4, Stop orders].

C: The design engineer shall:

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

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

E: The electrical engineer shall:

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

Verification: At least 30 days (or 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 2001 CBC, Chapter 17, Section 1701, Special Inspections, Section, 1701.5 Type of Work (requiring special inspection), and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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;
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; and
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 [2001 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 [2001 CBC, Section 106.4.2, Retention of plans].

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

CIVIL-1 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 2001 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 [2001 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 2001 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix

Chapter 33, Section 3317, Grading Inspection. All plant site grading operations for which a grading permit is required shall be subject to inspection by the CBO.

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 [2001 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 [2001 CBC, Section 108.4, Approval Required];
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures 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 [2001 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 [2001 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 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 2001 CBC, Chapter 17, Section 1701, Special Inspections, Section 1701.5, Type of Work (requiring special inspection), Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies 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 2001 CBC, Chapter 1, Section 106.3.2, Submittal documents, and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give the CBO prior notice of the intended filing.

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

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 2001 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 2001 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 [2001 CBC, Section 106.3.2, Submittal Documents, Section 108.3, Inspection Requests, Section 108.4, Approval Required; 2001 California Plumbing Code, Section 103.5.4, Inspection Request, Section 301.1.1, Approval].

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 5 (California Plumbing Code);

- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

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

Verification: At least 30 days (or 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 [2001 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 [2001 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 2001, Section 106.3.2, Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The

project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [2001 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

A. Final plant design plans to include:
    1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and
    2. system grounding drawings.

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

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:
    receipt or delay of major electrical equipment;
    testing or energization of major electrical equipment; and
    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

Staff's witness, Shahab Khoshmashrab, in his written analysis (Ex. 100, pp. 5.3-1 – 5.3-2), testified that the proposed changes to the RCEC would not change any of the findings or conclusions in the 2002 Decision.

FINDINGS AND CONCLUSIONS

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

1. The Efficiency aspects of the amended project do not create significant direct or cumulative environmental effects.

We therefore conclude that the Russell City Energy Center project, as amended, will not cause any significant effects on energy supplies or energy resources.

No Conditions of Certification were adopted in the 2002 Decision and none are adopted in this Decision concerning the topic of Power Plant Efficiency.

C. POWER PLANT RELIABILITY

Staff's witness, Shahab Khoshmashrab, in his written analysis (Ex. 100, pp. 5.4-1 – 5.4-2), testified that the proposed changes to the RCEC would not change any of the findings or conclusions in the 2002 Decision.

FINDINGS AND CONCLUSIONS

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

1. The Reliability aspects of the amended project do not create significant direct or cumulative environmental effects.

The Energy Commission, therefore, concludes that the project will not have an significant effect on system reliability.

No Conditions of Certification were adopted in the 2002 Decision and none are adopted in this Decision concerning the topic of Power Plant Reliability.

D. TRANSMISSION SYSTEM ENGINEERING

The written testimony of Ajoy Guha, P.E., and Mark Hesters reviewed the proposed transmission line from the relocated power plant to the PG&E Eastshore substation. They reviewed the results of a System Impact Study and a Facility Study conducted by PG&E. Those studies identified the impacts on other parts of the interconnected transmission network and the costs of likely network upgrades necessary to properly handle the increase in generation from the RCEC. With the exception of reconductoring (upgrading the wires) of the Eastshore to San Mateo 230 kV line (approximately 12.5 miles), a project already planned by PG&E to deal with existing overloads on that line, and reconductoring the 7-mile Eastshore to Dumbarton 115 kV line, the upgrades consist of a reconductoring project that is already complete and changes of equipment within existing facilities. Staff believes that the projects identified in the Facility Study will mitigate the impacts on the transmission system. (Ex. 100, pp. 5.5-7 – 5.5-9.)

We note that the Applicant seeks approval of two alternative transmission line routes for connection to the Eastshore Substation, both of which are described in the Project Description section and shown on **Figure 1 - PROJECT DESCRIPTION**. Once they reach an existing transmission line corridor, both alternatives follow the same path; it is the routes from the power plant to the corridor that differ. In approving both alternatives, it is our intention that only one of the alternatives routes be constructed, with the choice among them left to the Applicant. Staff's analysis and our findings apply to either alternative.

1. Reconductoring Impact Analysis

Because the Eastshore to Dumbarton reconductoring is triggered by the RCEC project, not pre-existing system needs, it is considered part of the amended

project for purposes of analyzing the project's environmental impacts.[12] Staff completed such an analysis, attached as an appendix to its Transmission System Engineering testimony.[13] (Ex. 100, pp. 5.6-1 – 5.6-22.)

The Eastshore to Dumbarton transmission line, including the location of its towers, is shown on **Figure 3 - Transmission System Engineering**. Precise plans for the reconductoring activities are not available now but will be considered by the Public Utilities Commission in the permitting of the activity. Based on common practices, however, staff has reviewed the potential for the reconductoring to cause environmental effects. Potential effects were identified by staff in several areas.

The existing line passes through salt ponds, open space, and agricultural lands west of Hayward, Union City and Fremont. Several sensitive species occur or potentially occur in or near the transmission line corridor. To avoid impacts to those species, PG&E is proposing to use a helicopter for construction activities in the vicinity of towers 22 through 24 and 29 through 31. Construction will be limited to September through January to avoid impacts to the clapper rail and other nesting birds. Prior to construction, consultation with state and federal wildlife agencies will determine the precise measures necessary to protect the sensitive species in question. Staff therefore concludes that the potential impacts to biological resources can be mitigated by compliance with LORS and the requirements of the appropriate agencies. (Ex. 100, pp. 5.6-6 – 5.6-9.)

[12] While we analyze the environmental effects of the reconductoring, we do not approve the project itself, which is the province of the Public Utilities Commission.

[13] The Applicant conducted an Environmental Assessment of the Eastshore to San Mateo 230 kV reconductoring as part of the licensing proceeding in 2001. The Commission reviewed this Assessment in the 2002 Decision. This analysis was updated after additional consultations with PG&E regarding their proposed methods of construction. (Ex. 1, p. 2-14.) We accept Staff's assertion that "the mitigation measures are acceptable." (Ex. 100, p. 5.5-8.)

For cultural resources, although the potential for significant impacts exists, those impacts can be reduced to less than significant levels by avoiding known sensitive areas and monitoring construction activities. (Ex. 100, pp. 5.6-9 – 5.6-10.)

Construction noise impacts to sensitive receptors, including residences located as close as 300 feet from the transmission line corridor, can be mitigated by the imposition of Conditions similar to **NOISE-1**, **NOISE-2** and **NOISE-8**. (Ex. 100, pp. 5.6-11 – 5.6-12.) Similarly, implementation of mitigation measures such as the use of off-site staging and laydown locations, non-peak hour scheduling, and worker carpooling, will mitigate any potential traffic and transportation impacts. (Ex. 100, pp. 5.6-12 – 5.6-13.)

Visual impacts can be mitigated by various measures, including restoration of disturbed areas, replacement of vegetation, and non-glare, non-reflective, neutral finishes for the line and insulators. (Ex. 100, p. 5.6-15.) Soil and water resource impacts can be mitigated by adherence to an appropriate Erosion and Sediment Control Plan and a Storm Water Pollution Prevention Plan and the use of existing access roads wherever possible. (Ex. 100, p. 5.6-17.)

At the Evidentiary Hearing, Staff and the Applicant requested additional time in which to review the amended Conditions of Certification proposed by Staff. They were to submit jointly agreed upon further revisions by July 27, 2007. Instead they reported, via a Report of Conversation dated July 25, 2007, that no further revisions were requested at this time. (Ex. 105 p. 1.)

FINDINGS AND CONCLUSIONS

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

1. The project as amended will continue to comply with all applicable LORS.

2. The revised Conditions of Certification set forth below are appropriate and 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.

3. The Transmission System Engineering aspects of the amended project do not create significant direct or cumulative environmental effects. The potential effects of the Eastshore to Dumbarton reconductoring made necessary by the construction of the RCEC will not be significant if mitigation measures similar to those identified in the Staff Assessment are applied to that project; it is within the power of the Public Utilities Commission to impose those measures and the PUC can and should do so.

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 LORS.

CONDITIONS OF CERTIFICATION

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

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

Table 1: Major Equipment List

Breakers
Step-up Transformer
Switchyard
Busses
Surge Arrestors
Disconnects and Wave-traps
Take off facilities
Electrical Control Building
Switchyard Control Building
Transmission Pole/Tower
Insulators and Conductors
Grounding System

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; or D) a mechanical engineer. (Business and Professions Code Sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California.)

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

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and to require changes; if site conditions are

unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations.

The electrical engineer shall:

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

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

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

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. (1998 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and shall reference this condition of certification.

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

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

a) receipt or delay of major electrical equipment;
b) testing or energization of major electrical equipment; and
c) the number of electrical drawings approved, submitted for approval, and still to be submitted.

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

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

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", CA ISO standards, National Electric Code (NEC) and related industry standards.

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

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

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

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

f) The project owner shall provide to the CPM:

1. A line route drawing after selecting one of the alternate route options for the generator interconnection 230 kV tie line,
2. The operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,
3. The Executed project owner and CA ISO Large Generator Interconnection Agreement.

4. A letter stating that the mitigation measures or projects selected by PG&E-for each criteria violation are acceptable,
5. The operational study report from the CA ISO and/or PG&E,

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

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

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

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) A line route drawing after selecting one of the alternate route options for the generator 230 kV interconnection tie line.

e) The operational mitigation measures, and/or SPS sequencing and timing if applicable, shall be provided concurrently to the CPM.

f) The executed project owner and CA ISO Large Generator Interconnection Agreement.

g) A letter stating that the mitigation measures or projects selected by PG&E for each criteria violation are acceptable.

h) The operational study report from the CA ISO and/or PG&E.

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 which may not conform to requirements of **TSE-5** and request approval to implement such changes.

TSE-7 The project owner shall provide the following Notice to the California Independent System Operator (CA ISO) prior to synchronizing the facility with the California Transmission system:

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

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

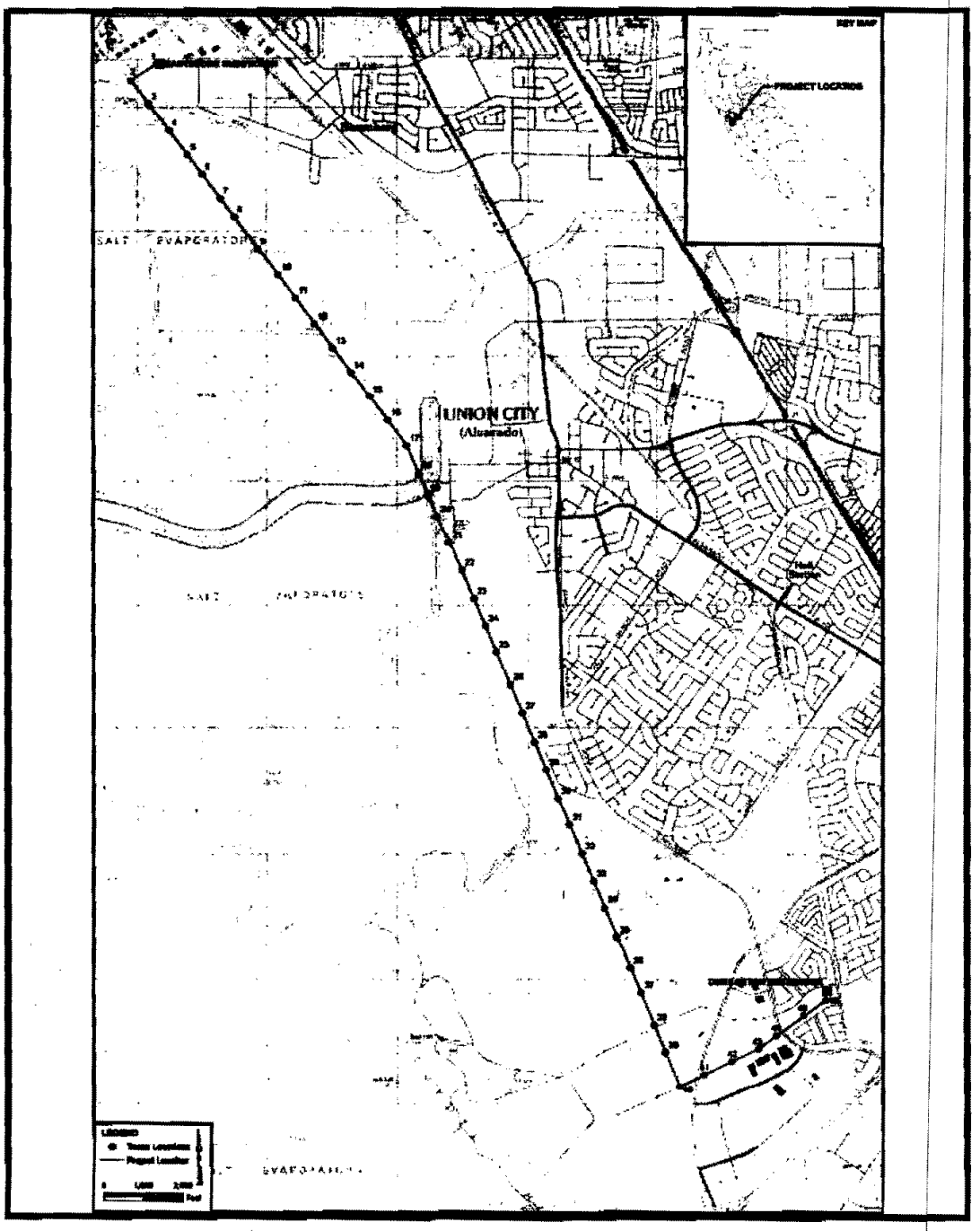
Orders", and applicable interconnection standards, NEC, related industry standards, and these conditions shall be provided concurrently.

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

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

FIGURE 3 – TRANSMISSION SYSTEM ENGINEERING

Russell City Energy Center Amendment # 1 - Eastshore - Dumbarton Line



E. TRANSMISSION LINE SAFETY AND NUISANCE

The testimony of Staff's witness, Obed Odoemelam, Ph.D., indicates that the proposed 230-kV transmission line, including the two alternative routes from the power plant switchyard to the existing transmission line corridor, will comply with all applicable LORS and all potential environmental impacts will be reduced to less than significant levels by the construction of the lines in compliance with regulatory and industry standards cited in Condition **TLSN-2**. The findings and conclusions in the 2002 Decision remain unchanged by the amendments to the project. (Ex. 100, pp. 4.11-1 – 4.11-11.)

Staff has proposed revisions to the previously adopted Conditions of Certification to update references to the applicable standards and has further modified them to account for the likely circumstance that PG&E, not the project owner, actually constructs the lines. We find the revisions appropriate and incorporate them below.

FINDINGS AND CONCLUSIONS

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

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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. The transmission line will be designed in accordance with the electric and magnetic field reducing guidelines applicable to PG&E's transmission service area. 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 estimated EMF exposures from the transmission line are significantly below field levels established by states with regulatory limits for such fields.

3. The Transmission Line Safety and Nuisance aspects of the amended project do not create significant direct or cumulative environmental effects.

The Energy Commission, therefore, concludes that with implementation of the revised Conditions of Certification, the project will conform with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance and will not cause any significant environmental effects relating to transmission line safety.

CONDITIONS OF CERTIFICATION

TLSN-1 The project transmission lines shall be constructed according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2. High Voltage Electrical Safety Orders, and Sections 2700 through 2974 of the California Code of Regulations.

Verification: At least thirty days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 Every reasonable effort shall be made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project-related lines and associated switchyards. Written records shall be maintained for a period of five years, of all complaints of radio or television interference attributable to plant operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained. The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

Verification: 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 A qualified consultant shall be hired to measure the strengths of the electric and magnetic fields from the proposed line segment before and after it is energized. The measurements shall be made according to the

American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures at the locations of maximum field strengths along the chosen route. These measurements shall be completed not later than six months after the start of operations.

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

TLSN-4 The rights-of-way of the proposed transmission line shall be kept free of combustible materials, 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 All permanent metallic objects within the right-of-way of the project-related lines shall be grounded according to industry standards regardless of ownership. In the event of a refusal by any property owner to permit such grounding, the project owner shall so notify the CPM. Such notification shall include, when possible, the owner's written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding the object involved.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this Condition.

V. PUBLIC HEALTH AND SAFETY ASSESSMENT

A. AIR QUALITY

Staff witnesses Tuan Ngo and Matt Layton testified that their analysis determines whether the amended projects' air emissions will either cause a violation or add to an existing violation of a Federal or State air quality standard. Those standards are health based, and "are set at levels to adequately protect the health of all members of the public, including those most sensitive to adverse air quality, such as the aged, people with existing illnesses, and infants and children, while providing a margin of safety." (Ex. 100, p. 4.1-3.) In either case, mitigation of the power plant's contribution to the violation is required.

In addition to review by the Staff, the project was reviewed by the Bay Area Air Quality Management District (District), which has issued its Final Determination of Compliance (FDOC) for the project. The District found the project to be in compliance will all District rules and regulations (Ex. 102, p. 39.) The bulk of the conditions of certification recommended by Staff are those recommended by the District in the FDOC.

The Applicant proposes the following project changes relevant to air quality:

1. Reducing the combustion turbines' oxides of nitrogen (NOx) emissions to conform to the District's Best Available Control Technology (BACT) emission limit.
2. Installing new oxidation catalyst systems to reduce the combustion turbine carbon monoxide (CO) emissions.
3. Revising the project's fuel use and emission limits for NOx, volatile organic compounds (VOCs, also called POC), CO, sulfur oxides (SOx), and PM10 and PM2.5 (particulate matter less than 10 and 2.5 microns, respectively) emissions.
4. Eliminating the previously approved emergency generator and engine.
5. Replacing the previously approved fire pump Cummins engine with a Clarke engine.

6. Deleting the requirement that restricts simultaneous start up of the combustion turbines.
7. Revising the project's PM10/PM2.5 mitigation plan to include the use of Emission Reduction Credits (ERCs) or interpollutant trading.
8. Administrative revisions to various air quality conditions of certification.

1. Construction Impacts

Staff reviewed the impacts from construction activities for the amended project and finds them to be no different than those analyzed in the 2002 Decision. It recommends, however, that the construction conditions in the 2002 Decision be updated to its current standard conditions, which reflect, among other things, current state and federal standards for construction engines. We have done so in Conditions **AQ-SC1** through **AQ-SC5**, below. With those mitigation measures in place, the impacts from construction emissions will be less than significant. (Ex. 100, p. 4.1-5.)

2. Operation Impacts

The Applicant's modeling analysis showed that the project does not cause any new violations of NO_2, CO or SO_2 air quality standards, even with recent worst-case ambient concentrations used as background. The project, however, would contribute to existing violations of the state 24-hour and annual PM10 standards, the state annual PM2.5 standard, and the state 1-hour and the federal 8-hour ozone standards. Staff recommends that mitigation, in the form of ERCs for particulate matter and its precursors and ozone and its precursors be provided. (Ex. 100, p. 4.1-6.)

The Applicant requested that its emissions limits be set on an annual basis only, without daily limitations. In effect, it desires no restrictions on its operations—the number of times the turbines are started and shut down periods—so long as its total emissions for the year do not exceed the limits. ERCs would be supplied to offset those emissions.

Staff does not believe that emission limits expressed only in annual terms will properly mitigate the emission impacts, however. For example, the Applicant proposes a NOx limit of 134.6 tons per year. Using the maximum operating scenario stated by the applicant—"24 hours per day, 7 days a week for a total of 8364 hours per year per turbine/HRSG" (Ex. 1, p. 3-5)—Staff calculates that the project's potential emissions would be 227.4 tpy. (Ex. 100, p. 4.1-6, Air Quality Table 2.) On a daily basis, Staff calculates the ERCs proposed by the Applicant to provide mitigation for 848 lbs of NOx emissions. The daily emissions projected by Staff, however, could be as much as 2,213 lbs. (Ex. 100, pp. 4.1-6 - 4.1-8.)

Staff proposed technological solutions (Siemens-Westinghouse Fast-Start and General Electric OpFlex) which it believes would significantly reduce emissions from start-up events, but they were rejected by the Applicant for economic reasons. (Ex. 100, pp. 4.1-8 – 4.1-9.)[14] To address Staff's concern, the Applicant has agreed to limit NOx emissions to 1,225 lbs per day during the June 1 through September 30 ozone season, with additional ERCs provided to make up the difference between 1,225 lbs and the already committed 848 lbs of mitigation and a general limitation on turbine hot or warm start-up NOx emissions to 125 lbs per event. (Ex. 100, pp. 4.1-7 – 4.1-8.) Those requirements are contained in Conditions **AQ-SC7** and **AQ-SC8**, below.

Due to the significant start-up emissions, Staff recommends that the prohibition of simultaneous start-up of both turbines (Condition **AQ-22** in the 2002 Decision, now **AQ-SC9**) be retained (unless fast start technology is incorporated into the project) because of the potential for the large ozone precursor emissions during a cold start-up (960 lbs of NOx and 192 lbs of POC) to contribute to violations of the 1 and 8-hour ozone air quality standards. (Ex. 100, p. 4.1-11.)

[14] Should the Applicant change its mind, Condition **AQ-SC10** holds open the option to use fast start technology, in which case the Applicant would be relieved from the restrictions of **AQ-SC7** and **AQ-SC8**, as well as the simultaneous start-up prohibition of **AQ-SC9**, discussed below.

Although not required by the District, the Applicant proposes to provide mitigation for the 86.8 tons of PM10 it would be permitted to emit with 43.4 tons of wintertime PM10 reductions. Those reductions would be obtained via a wood stove/fireplace improvement program. The program would be voluntary, initially open to Hayward residents and expanded to all Alameda County residents after 1 year. The precise design of the program is left to the Applicant but it would offer incentives for retrofitting or replacing wood stoves and fireplaces to burn natural gas instead of wood, or their permanent closure and improvement of an existing central heating and air conditioning unit, resulting in much lower PM10 emissions. Due to "uneven" results from similar past programs, Staff recommends that the program results be monitored and, if it fails to meet specified milestones and to ultimately provide the target reduction of 43.4 tons, the Applicant supply additional ERCs to make up the difference. See Conditions **AQ-SC12** and **AQ-SC13**. (Ex. 100, p. 4.1-12 – 4.1-13.)

3. Greenhouse Gases

The generation of electricity can produce air emissions known as greenhouse gases (GHGs) in addition to the criteria air pollutants. GHGs are known to contribute to the warming of the earth's atmosphere. These include primarily carbon dioxide, nitrous oxide (N_2O, not NO or NO_2, which are commonly know as NOx or oxides of nitrogen), and methane (unburned natural gas). Also included are sulfur hexafluoride (SF6) from transformers, and hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) from refrigeration/chillers.

The California Global Warming Solutions Act of 2006 (AB32) requires the California Air Resources Board (ARB) to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. By January 1, 2008, ARB is scheduled to adopt regulations requiring mandatory GHG emissions reporting and define the statewide GHG emissions cap for 2020. ARB would adopt a plan by January 1, 2009, that would indicate how emission reductions would be achieved from significant sources of GHGs

via regulations, market mechanisms, and other actions. Then, during 2009, ARB staff would draft rule language to implement its plan and hold public workshops on each measure including market mechanisms. Strategies that the state might pursue for managing GHG emissions in California are identified in the California Climate Action Team's Report to the Governor. Some strategies focus on reducing consumption of petroleum across all areas of the California economy. Improvements in transportation fuel economy and land use planning and alternatives to petroleum-based fuels are slated to provide substantial reductions by 2020.

The Electricity Greenhouse Gas Emission Standards Act (SB1368) was also enacted in 2006, requiring base load generation resources or contracts be subject to a GHG or Environmental Performance Standard. At its January 25, 2007 meeting, the California Public Utilities Commission adopted an Emissions Performance Standard for the state's Investor Owned Utilities of 1,100 pounds (or 0.5 metric tons) CO2 per megawatt-hour. The Emissions Performance Standard applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or more, including contracts with power plants located outside of California. A similar performance standard is undergoing rulemaking by the Energy Commission for the Publicly Owned Utilities, and it should be adopted by September 2007.

Staff recommends Condition of Certification **AQ-SC14**, which requires the project owner to report the quantities of relevant GHGs emitted as a result of electric power production. Staff believes that **AQ-SC14**, with the reporting GHG emissions, will enable the project to be consistent with the regulations and policies described above. (Ex. 100, pp. 4.1-13 – 4.1-15.)

With the adoption of the condtions of certification, Staff believes that the amended project will comply will all applicable LORS and will not cause significant air quality impacts.

Public Comment

Members of the public expressed concerns about the health effects of emissions from the power plant. As we note above, Staff's analysis found that the project would comply with applicable air quality laws, which implement health-based standards set at levels to adequately protect public health.

Several commenters suggested modifications to the availability of the wood stove/fireplace improvement program (**AQ-SC12**). Jesus Armas suggested that the period in which the program is limited to Hayward residents be lengthened beyond the proposed one-year and that it begin sooner than 90 days prior to the start of construction.[15] Robert Strauss suggested that the program, when expanded beyond Hayward, be limited to those areas in Alameda west of the Oakland/East Bay Hills, presumably to maximize the benefits to those living in the vicinity of the power plant. Mr. Strauss also recommended that the initial phase of the program include San Lorenzo and the unincorporated parts of Hayward and Alameda County west of Interstate 580. We find merit in the suggestion to limit participation to those who reside west of the hills and have modified condition **AQ-SC12** accordingly.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.

[15] As proposed, condition **AQ-SC12** requires only that a program plan be submitted at least 90 days before the start of construction. It is silent as to when the program itself must begin. As a practical matter, however, it appears that it must start as or shortly after construction starts in order to achieve the milestones in the Condition. We invite comments from the parties and public as to whether specification of a more precise start date is appropriate.

3. The air quality aspects of the amended project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with **AQ-SC3, AQ-SC4 and AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with **AQ-SC3, AQ-SC4 and AQ-SC5**.

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

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of **AQ-SC4**. The

frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.
c) The construction site entrances shall be posted with visible speed limit signs.
d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the District.
h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.
i) All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.
k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall provide to the CPM a MCR to include:

(1) a summary of all actions taken to maintain compliance with this condition;

(2) copies of any complaints filed with the District in relation to project construction; and
(3) any other documentation deemed necessary by the District and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.
Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.
Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the District any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the District before that time.

Verification: The project owner shall provide to the CPM a MCR to include:

(1) a summary of all actions taken to maintain compliance with this condition;
(2) copies of any complaints filed with the District in relation to project construction; and
(3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM in the MCR, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.
b) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.
c) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

    (1) There is no available soot filter that has been certified by either the California Air Resources Board (ARB) or U.S. Environmental Protection Agency (EPA) for the engine in question; or
    (2) The construction equipment is intended to be on-site for ten (10) days or less.
    (3) The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

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

    (1) The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.
    (2) The soot filter is causing or is reasonably expected to cause significant engine damage.

(3) The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.
(4) Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

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

f) All diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR:

(1) a summary of all actions taken to maintain compliance with this condition,
(2) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained, and
(3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) for the facility.

The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. EPA, and any revised permit issued by the District or U.S. EPA, for the project.

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

AQ-SC7 The facility's emissions shall not exceed 1,225 lbs of NOx per day during the June 1 to September 30 periods. In addition, NOx emissions in excess of 848 lbs per calendar day shall be mitigated through the surrender of emission reduction credits (ERCs). The amount of credits to be surrendered shall be the difference between 848 lbs per day and the actual daily emissions.

Verification: As part of the quarterly and annual compliance reports as required by **AQ-19**, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-SC8 Turbine hot/warm start-up NOx emissions shall not exceed 125 pounds per start-up event.

Verification: As part of the quarterly and annual compliance reports as required by AQ-SC19, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-SC9 The project owner shall not operate both gas turbines (S-1 and S-3) simultaneously in start-up mode.

Verification: As part of the quarterly and annual compliance reports as required by AQ-SC19, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-SC10 In lieu of complying with **AQ-SC7**, **AQ-SC8,** and **AQ-SC9**, the project's combustion turbine/HRSG units shall be designed and built with equipment and control systems to minimize start-up times and emissions. These could include the Fast-Start technology with an integrated control system and a once-through Benson boiler design, appropriate system configuration and equipment to facilitate operating chemistry during starting sequences, and an auxiliary boiler.

Verification: Ninety (90) days prior to start of construction, the project owner shall submit to the CPM, for approval, the type of turbine/HRSG design(s) and manufacturer's information that start-up time of the turbine/HRSG can be reduce to no more than 2 hours.

AQ-SC11 The project owner shall surrender 12.2 tons per year of SOx or SOx-equivalent emission reduction credits (ERCs) from certificate 989, 28.5 tons per year of POC ERCs, and 154.8 tons per year of NOx, or an equivalent combination of NOx and POC ERCs from certificates 602, 687, 688, and 855, prior to start of construction of the project.

Verification: The project owner shall submit to the CPM a copy of all ERCs to be surrendered to the District at least 30 days prior to start construction.

AQ-SC12 A fireplace retrofit/woodstove replacement program shall be made available to all Hayward residents on a first-come, first-serve basis to finance a voluntary woodstove replacement/fireplace retrofit. The program can also made available to all residents of the cities of Fremont, Newark, Union City, San Leandro, Oakland, Emeryville, Albany, Piedmont, Berkeley, Alameda and the unincorporated

communities of San Lorenzo and Castro Valley after twelve (12) months from the start date of the fireplace retrofit/woodstove replacement program. The program shall provide a minimum of 43.4 tons of winter-time (Oct 1 to Mar 31) PM10 ERCs per year. Each resident participating in the retrofit/replacement program would agree to replace their existing woodstove or fireplace with a natural gas-fired unit, or to permanently close the fireplace or woodstove chimney and apply the rebate toward the improvement or replacement of their homes' existing central heating and air conditioning unit. Quarterly status reports on the program meeting the following milestones shall be submitted to the CPM:

a. achieving 6.5 tons per year of winter-time PM10 six (6) months after start of construction,
b. achieving 13.0 tons per year of winter-time PM10 nine (9) months after start of construction.
c. achieving 21.7 tons per year of winter-time PM10 twelve (12) months after start of construction.
d. achieving 34.7 tons per year of winter-time PM10 eighteen (18) months after start of construction.
e. achieving 43.4 tons per year of winter-time PM10 twenty four (24) months after start of construction.

Verification: At least ninety (90) days before start of construction, the project owner shall submit to the CPM a plan detailing the fireplace/woodstove replacement program for approval. The plan shall include, at the minimum, the description of the program, the amount of rebate, the person (or agency) who oversees the program implementation, the responsible person who reports to the CPM on the progress of the program implementation, the target milestones, and procedures to be followed if the target milestones have not been met. The project owner shall submit documentation to show compliance with this condition in the quarterly and annual reports as required in **AQ-20**.

AQ-SC13 If complete compliance with **AQ-SC12** cannot be achieved by the condition milestones, the project owner shall make up the wintertime PM10 milestone shortfall by providing annual PM10 or PM10 equivalent (SOx for PM10) ERCs at a ratio of 2 tons of annual PM10 or PM10 equivalent ERCs to 1 ton of wintertime PM10. PM10 equivalent ERCs can be provided by SOx for PM10 interpollutant trading at a ratio of 5.3 to 1.

Verification: The project owner shall submit to the CPM a list of PM10 and/or SOx ERCs to be surrendered to the District at least 60 days prior to initial startup.

AQ-SC14 Until the California Global Warming Solutions Act of 2006 (AB32) is implemented, the project owner shall either participate in a climate

action registry approved by the CPM, or report on a annual basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production.

The project owner shall maintain a record of fuels types and carbon content used on-site for the purpose of power production. These fuels shall include but are not limited to each fuel type burned: (1) in combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), (3) internal combustion engines, (4) flares, and/or (5) for the purpose of startup, shutdown, operation or emission controls.

The project owner may perform annual source tests of CO_2 and CH_4 emissions from the exhaust stacks while firing the facility's primary fuel, using the following test methods or other test methods as approved by the CPM. The project owner shall produce fuel-based emission factors in units of lbs CO_2 equivalent per mmBtu of fuel burned from the annual source tests. If a secondary fuel is approved for the facility, the project owner may also perform these source tests while firing the secondary fuel.

Pollutant	Test Method
CO_2	EPA Method 3A
CH_4	EPA Method 18 (POC measured as CH_4)

As an alternative to performing annual source tests, the project owner may use the Intergovernmental Panel on Climate Change (IPCC) Methodologies for Estimating Greenhouse Gas Emissions (MEGGE). If MEGGE is chosen, the project owner shall calculate the CO_2, CH_4 and N_2O emissions using the appropriate fuel-based carbon content coefficient (for CO_2) and the appropriate fuel-based emission factors (for CH_4 and N_2O).

The project owner shall convert the N_2O and CH_4 emissions into CO_2 equivalent emissions using the current IPCC Global Warming Potentials (GWP). The project owner shall maintain a record of all SF_6 that is used for replenishing on-site high voltage electrical equipment. At the end of each reporting period, the project owner shall total the mass of SF_6 used and convert that to a CO_2 equivalent emission using the IPCC GWP for SF_6. The project owner shall maintain a record of all PFCs and HFCs that are used for replenishing on-site refrigeration and chillers directly related to electricity production. At the end of each reporting period, the project owner shall total the mass of PFCs and HFCs used and not recycled and convert that to a CO_2 equivalent emission using the IPCC GWP.

On an annual basis, the project owner shall report the CO_2 and CO_2 equivalent emissions from the described emissions of CO_2, N_2O, CH_4, SF_6, PFCs, and HFCs.

Verification: The project annual GHG emissions shall be reported, as a CO2 equivalent, by the project owner to a climate action registry approved by the CPM, or to the CPM as part of the fourth Quarterly or the annual Air Quality Report, until such time that GHG reporting requirements are adopted and in force for the project as part of the California Global Warming Solutions Act of 2006.

AIR DISTRICT CONDITIONS OF CERTIFICATION

Permit Conditions

(A) Definitions:

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.
Year:	Any consecutive twelve-month period of time
Heat Input:	All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in BTU/scf.
Rolling 3-hour period:	Any consecutive three-hour period, not including start-up or shutdown periods.
Firing Hours:	Period of time during which fuel is flowing to a unit, measured in minutes.
MM BTU:	million British thermal units
Gas Turbine Warm and Hot Start-up Mode:	The lesser of the first 180 minutes of continuous fuel flow to the gas turbine after fuel flow is initiated or the period of time from gas turbine fuel flow initiation until the gas turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of Conditions of Certification **AQ-20(b) and 20(d).**
Gas Turbine Cold Start-up Mode:	The lesser of the first 360 minutes of continuous fuel flow to the gas turbine after fuel flow is initiated or the period of time from gas turbine fuel flow initiation until the gas turbine achieves two consecutive CEM data points in compliance with the emission

concentration limits of Conditions of Certification **AQ-20(b) and 20(d)**.

Gas Turbine Shutdown Mode: The lesser of the 30 minute period immediately prior to the termination of fuel flow to the gas turbine or the period of time from non-compliance with any requirement listed in Conditions of Certification **AQ_20(b) through 20(d)** until termination of fuel flow to the gas turbine.

Gas Turbine Combustor Tuning Mode: The period of time, not to exceed 360 minutes, in which testing, adjustment, tuning, and calibration operations are performed, as recommended by the gas turbine manufacturer, to insure safe and reliable steady-state operation, and to minimize NO_x and CO emissions. The SCR and oxidation catalyst are not operating during the tuning operation.

Gas Turbine Cold Start-up: A gas turbine start-up that occurs more than 48 hours after a gas turbine shutdown.

Gas Turbine Hot Start-up: A gas turbine start-up that occurs within 8 hours of a gas turbine shutdown.

Gas Turbine Warm Start-up: A gas turbine start-up that occurs between 8 hours and 48 hours of a gas turbine shutdown.

Specified PAHs: The polycyclic aromatic hydrocarbons listed below shall be considered to be Specified PAHs for these permit conditions. Any emission limits for Specified PAHs refer to the sum of the emissions for all six of the following compounds:

Benzo[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[a]pyrene
Dibenzo[a,h]anthracene
Indeno[1,2,3-cd]pyrene

Corrected Concentration: The concentration of any pollutant (generally NO_x, CO, or NH_3) corrected to a standard stack gas oxygen concentration. For emission points P-1 (combined exhaust of S-1 gas turbine and S-3 HRSG duct burners), P-2 (combined exhaust of S-2

gas turbine and S-4 HRSG duct burners), the standard stack gas oxygen concentration is 15% O_2 by volume on a dry basis.

Commissioning Activities: All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the RCEC construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems during the commissioning period.

Commissioning Period: The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has completed performance testing, is available for commercial operation, and has initiated sales to the power exchange.

Precursor Organic Compounds (POCs): Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

CPM: California Energy Commission Compliance Program Manager

RCEC: Russell City Energy Center

(B) Applicability:

Conditions of Certification **AQ-1 through AQ-11** shall only apply during the commissioning period as defined above. Unless otherwise indicated, Conditions of Certification **AQ-12 through AQ-49** shall apply after the commissioning period has ended.

The RCEC will consist of the following permitted equipment:

S-1 Combustion Turbine Generator (CTG) #1, Westinghouse 501F, 2,038.6 MMBtu/hr maximum rated capacity, natural gas fired only; abated by A-1 Selective Catalytic Reduction System (SCR) and A-2 Oxidation Catalyst

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 and A-2 Oxidation Catalyst

S-3 Combustion Turbine Generator (CTG) #2, Westinghouse 501F, 2,038.6 MMBtu/hr maximum rated capacity, natural gas fired only; abated by A-3 Selective Catalytic Reduction System (SCR) and A-4 Oxidation Catalyst

S-4 Heat Recovery Steam Generator (HRSG) #2, with Duct Burner Supplemental Firing System, 200 MMBtu/hr maximum rated capacity; Abated by A-3 Selective Catalytic Reduction (SCR) System and A-4 Oxidation Catalyst

S-5 Cooling Tower, 9-Cell, 141,352 gallons per minute, with efficiency drift eliminators, make and model to be determined.

S-6 Fire Pump Diesel Engine, Clarke JW6H-UF40, 300 hp, 2.02 MMBtu/hr rated heat input.

CONDITIONS FOR THE COMMISSIONING PERIOD

AQ-1. The owner/operator of the RCEC shall minimize emissions of carbon monoxide and nitrogen oxides from S-1 & S-3 gas turbines and S-2 & S-4 Heat Recovery Steam Generators to the maximum extent possible during the commissioning period.

Verification: The project owner shall submit a Monthly Compliance Report (MCR) to the CPM specifying how this condition is being complied with.

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 turbines combustors and S-2 & S-4 HRSGs duct burners to minimize the emissions of carbon monoxide and nitrogen oxides.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-3. At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, owner/operator shall install, adjust, and operate the A-2 & A-4 Oxidation Catalysts and A-1 & A-3 SCR Systems, to minimize the emissions of carbon monoxide and nitrogen oxides from S-1 & S-3 gas turbines and S-2 & S-4 HRSGs.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-4. The owner/operator of the RCEC shall submit a plan to the District Engineering Division and the CPM at least four weeks prior to first firing of S-1 & S-3 gas turbines describing the procedures to be followed during the commissioning of the gas turbines, HRSGs, and steam turbines. 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-NO_x combustors, the installation and operation of the required emission control systems, the installation, calibration, and testing of the CO and NO_x 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 oxidation catalysts and/or SCR Systems. The owner/operator shall not fire any of the gas turbines (S-1 or S-3) sooner than 28 days after the District receives the commissioning plan.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-5. During the commissioning period, the owner/operator of the RCEC shall demonstrate compliance with **AQ-7**, **AQ-8**, **AQ-9**, and **AQ-10**, through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

- firing hours
- fuel flow rates
- stack gas nitrogen oxide emission concentrations,
- stack gas carbon monoxide emission concentrations
- stack gas oxygen concentrations.

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), HRSGs (S-2 & S-4). The owner/operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. The owner/operator shall retain records on site for at least five (5) years from the date of entry and make such records available to District personnel upon request.

Verification: The project owner shall submit a MCR report to the CPM specifying how this condition is being complied with.

AQ-6. The owner/operator shall install, calibrate, and operate the District-approved continuous monitors specified in **AQ-5** prior to first firing of the gas turbines (S-1 & S-3) and HRSGs (S-2 & S-4). After first firing of the

turbines, the owner/operator shall adjust the detection range of these continuous emission monitors as necessary to accurately measure the resulting range of CO and NO_x emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with. In addition, the project owner shall provide evidence of the District's approval of the emission monitoring system to the CPM prior to first firing of the gas turbines.

AQ-7. The owner/operator shall not fire the S-1 gas turbine and S-2 HRSG without abatement of nitrogen oxide emissions by A-1 SCR System and/or abatement of carbon monoxide emissions by A-2 Oxidation Catalyst for more than 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 system and/or oxidation catalyst in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Engineering and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-8. The owner/operator shall not fire the S-3 gas turbine and S-4 HRSG without abatement of nitrogen oxide emissions by A-3 SCR System and/or abatement of carbon monoxide emissions by A-4 Oxidation Catalyst for more than 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 system and/or oxidation catalyst in place. Upon completion of these activities, the owner/operator shall provide written notice to the District Engineering and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-9. The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM10, and sulfur dioxide that are emitted by the gas turbines (S-1 & S-3), HRSGs (S-2 & S-4) and S-6 Fire Pump Diesel Engine during the commissioning period shall accrue towards the consecutive twelve-month emission limitations specified in **AQ-23**.

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-10. The owner/operator shall not operate the gas turbines (S-1 & S-3) and HRSGs (S-2 & S-4) in a manner such that the combined pollutant emissions from these sources will 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).

NO_x (as NO_2)	4,805 pounds per calendar day	400 pounds per hour
CO	20,000 pounds per calendar day	5,000 pounds per hour
POC (as CH_4)	495 pounds per calendar day	
PM10	432 pounds per calendar day	
SO_2	298 pounds per calendar day	

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQ-11. No less than 90 days after start-up, the owner/operator shall conduct District and Energy Commission approved source tests using certified continuous emission monitors to determine compliance with the emission limitations specified in **AQ-19**. The source tests 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 and shall include at least one cold start, one warm start, and one hot start. 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 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. The owner/operator shall submit the source test results to the District and the CPM within 60 days of the source testing date.

Verification: No later than 30 working days before the commencement of the source tests, the project owner 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 project owner of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The project owner shall incorporate the District and CPM comments into the test plan. The project owner 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 60 days of the source testing date.

CONDITIONS FOR THE GAS TURBINES (S-1 & S-3) AND THE HRSGS (S-2 & S-4)

AQ-12. The owner/operator shall fire the gas turbines (S-1 & S-3) and HRSG duct burners (S-2 & S-4) exclusively on PUC-regulated natural gas with a maximum sulfur content of 1 grain per 100 standard cubic feet. To demonstrate compliance with this limit, the operator of S-1 through S-4 shall sample and analyze the gas from each supply source at least monthly to determine the sulfur content of the gas. PG&E monthly sulfur data may be used provided that such data can be demonstrated to be representative of the gas delivered to the RCEC. In the event that the average sulfur content exceeds 0.25 grain per 100 standard cubic feet, a reduced annual heat input rate may be utilized to calculate the maximum projected annual emissions. The reduced annual heat input rate shall be subject to District review and approval. (BACT for SO_2 and PM10)

Verification: The project owner shall complete, on a monthly basis, a laboratory analysis showing the sulfur content of natural gas being burned at the facility. The sulfur analysis reports shall be incorporated into the quarterly compliance reports.

AQ-13. The owner/operator shall not operate the units such that 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) exceeds 2,238.6 MM BTU (HHV) per hour. (PSD for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-14. The owner/operator shall not operate the units such that 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) exceeds 53,726 MM BTU (HHV) per day. (PSD for PM10)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-15. The owner/operator shall not operate the units such that the combined cumulative heat input rate for the gas turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) exceeds 35,708,858 MM BTU (HHV) per year. (Offsets)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-16. The owner/operator shall not fire the HRSG duct burners (S-2 & S-4) unless its associated gas turbine (S-1 & S-3, respectively) is in operation. (BACT for NO_x)

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQ-17. The owner/operator shall ensure that the S-1 gas turbine and S-2 HRSG are abated by the properly operated and properly maintained A-1 SCR system and A-2 oxidation catalyst system whenever fuel is combusted at those sources and the A-1 SCR catalyst bed has reached minimum operating temperature. (BACT for NO_x, POC and CO)

Verification: As part of the quarterly and annual compliance reports, the project owner shall provide information on any major problem in the operation of the oxidizing catalyst and SCR Systems for the gas turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-18. The owner/operator shall ensure that the S-3 gas turbine and S-4 HRSG are abated by the properly operated and properly maintained A-3 SCR System and A-4 oxidation catalyst system whenever fuel is combusted at those sources and the A-3 SCR catalyst bed has reached minimum operating temperature. (BACT for NO_x, POC and CO)

Verification: As part of the quarterly and annual compliance reports, the project owner shall provide information on any major problem in the operation of the oxidizing catalyst and SCR Systems for the gas turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQ-19. The owner/operator shall ensure that the gas turbines (S-1 & S-3) and HRSGs (S-2 & S-4) comply with requirements **(a) through (h)** under all operating scenarios, including duct burner firing mode. Requirements **(a) through (h)** do not apply during a gas turbine start-up, combustor tuning operation or shutdown. (BACT, PSD, and Regulation 2, Rule 5)

(a) Nitrogen oxide mass emissions (calculated as NO_2) at P-1 (the combined exhaust point for S-1 gas turbine and S-2 HRSG after abatement by A-1 SCR System) shall not exceed 16.5 pounds per

hour or 0.00735 lb/MM BTU (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated as NO_2) at P-2 (the combined exhaust point for S-3 gas turbine and S-4 HRSG after abatement by A-3 SCR System) shall not exceed 16.5 pounds per hour or 0.00735 lb/MM BTU (HHV) of natural gas fired

(b) The nitrogen oxide emission concentration at emission points P-1 and P-2 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15% O_2, averaged over any 1-hour period. (BACT for NO_x)

(c) *Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 20 pounds per hour or 0.009 lb/MM BTU of natural gas fired, 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 4.0 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. This ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate to A-2 and A-4 SCR Systems. The correlation between the gas turbine and HRSG heat input rates, A-2 and A-4 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 30. (Regulation 2-5)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at P-1 and P-2 each shall not exceed 2.86 pounds per hour or 0.00128 lb/MM BTU of natural gas fired. (BACT)

(g) Sulfur dioxide (SO_2) mass emissions at P-1 & P-2 each shall not exceed 6.21 pounds per hour or 0.0028 lb/MM BTU of natural gas fired. (BACT)

(h) Particulate matter (PM10) mass emissions at P-1 & P-2 each shall not exceed 8.64 pounds per hour or 0.0042 lb PM10/MM BTU of natural gas fired when the HRSG duct burners are not in operation. Particulate matter (PM10) mass emissions at P-1 & P-2 each shall not exceed 11.64 pounds per hour or 0.0052 lb PM10/MM BTU of natural gas fired when the HRSG duct burners are in operation. (BACT)

Verification: The project owner shall submit to the District and CPM, quarterly reports for the proceeding calendar quarter within 30 days from the end of the quarter. The report for the fourth quarter can be an annual compliance summary for the preceding year. The quarterly and annual compliance summary reports shall contain the following information:

(a) Operating parameters of emission control equipment, including but not limited to ammonia injection rate, NO_x emission rate and ammonia slip.

(b) Total plant operation time (hours), number of startups, hours in cold startup, hours in warm startup, hours in hot startup, and hours in shutdown.

(c) Date and time of the beginning and end of each startup and shutdown period.
(d) Average plant operation schedule (hours per day, days per week, weeks per year).
(e) All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol.
(f) Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NO_x, CO, PM10, POC and SO_x (including calculation protocol).
(g) Fuel sulfur content (monthly laboratory analyses, monthly natural gas sulfur content reports from the natural gas supplier(s), or the results of a custom fuel monitoring schedule approved by the District.
(h) A log of all excess emissions, including the information regarding malfunctions/breakdowns.
(i) Any permanent changes made in the plant process or production, which would affect air pollutant emissions, and indicate when changes were made.
(j) Any maintenance to any air pollutant control system (recorded on an as-performed basis).

In addition, this information shall be maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.

AQ-20. The owner/operator shall ensure that the regulated air pollutant mass emission rates from each of the gas turbines (S-1 & S-3) during a start-up does not exceed the limits established below. (PSD)

POLLUTANT	Cold Start-Up Combustor Tuning	Hot Start-Up	Warm Start-Up	Shutdown
	lb/start-up	lb/start-up	lb/start-up	lb/shutdown
NO_x (as NO_2)	480.0	125	125	40
CO	5,028	2514	2514	902
POC (as CH_4)	83	35.3	79	16

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-21. The owner/operator shall not perform combustor tuning on gas turbines more than once every rolling 365 day period for each S-1 and S-3. The owner/operator shall notify the District no later than 7 days prior to combustor tuning activity. (Offsets, Cumulative Emissions)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-22. The owner/operator shall not allow total combined emissions from the gas turbines and HRSGs (S-1, S-2, S-3 & S-4), S-5 Cooling Tower, and S-6 Fire Pump Diesel Engine, including emissions generated during gas

turbine start-ups, combustor tuning, and shutdowns to exceed the following limits during any calendar day:

(a) 1,553 pounds of NO_x (as NO_2) per day.	(Cumulative Emissions)
(b) 1,225 pounds of NO_x per day during ozone season from June 1 to September 30.	(CEC Condition of Certification)
(c) 10,774 pounds of CO per day	(PSD)
(d) 295 pounds of POC (as CH_4) per day	(Cumulative Emissions)
(e) 626 pounds of PM10 per day	(PSD)
(f) 292 pounds of SO_2 per day	(BACT)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-23. The owner/operator shall not allow cumulative combined emissions from the gas turbines and HRSGs (S-1, S-2, S-3 & S-4), S-5 Cooling Tower, and S-6 Fire Pump Diesel Engine, including emissions generated during gas turbine start-ups, combustor tuning, and shutdowns to exceed the following limits during any consecutive twelve-month period:

(a) 134.6 tons of NO_x (as NO_2) per year	(Offsets, PSD)
(b) 389.3 tons of CO per year	(Cumulative Increase, PSD)
(c) 28.5 tons of POC (as CH_4) per year	(Offsets)
(d) 86.8 tons of PM10 per year	(Cumulative Increase, PSD)
(e) 12.2 tons of SO_2 per year	(Cumulative Increase, PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19.**

AQ-24. The owner/operator shall not allow sulfuric acid emissions (SAM) from stacks P-1 and P-2 combined to exceed 7 tons in any consecutive 12 month period. (Basis: PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-25. The owner/operator shall not allow the maximum projected annual toxic air contaminant emissions (per **AQ-28**) from the gas turbines and HRSGs (S-1, S-2, S-3 & S-4) combined to exceed the following limits:

formaldehyde	10,912 pounds per year
benzene	226 pounds per year
specified polycyclic aromatic hydrocarbons (PAHs)	1.8 pounds per year

unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment to determine the total facility risk using the emission rates determined by source testing 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 shall submit the risk analysis to the District and the CPM within 60 days of the source test date. 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 not result in a significant cancer risk, the District and the CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (Regulation 2, Rule 5.)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-26. The owner/operator shall demonstrate compliance with **AQ-13 through AQ-16, AQ-19(a) through (d), AQ-20, AQ-22(a) and (b), AQ-23(a) and (b)** by using properly operated and maintained continuous monitors (during all hours of operation including gas turbine start-up, combustor tuning, 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, S-2 & S-4 combined.
(b) Oxygen (O_2) concentration, Nitrogen Oxides (NO_x) concentration, and Carbon Monoxide (CO) concentration at exhaust points P-1 and P-2.
(c) Ammonia injection rate at A-1 and A-3 SCR Systems
The owner/operator shall record all of the above parameters every 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 pollutant emission concentrations.

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

(d) Heat Input Rate for each of the following sources: S-1 & S-3 combined, S-2 & S-4 combined.
(e) Corrected NO_x concentration, NO_x mass emission rate (as NO_2), corrected CO concentration, and CO mass emission rate at each of the following exhaust points: P-1 and P-2.

For each source, source grouping, or exhaust point, the owner/operator shall record the parameters specified in **AQ-26(d) and (e)** at least once

every 15 minutes (excluding normal calibration periods). As specified below, the owner/operator shall calculate and record the following data:

(f) total heat input rate for every clock hour and the average hourly heat input rate for every rolling 3-hour period.
(g) 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.
(h) the average NO_x mass emission rate (as NO_2), CO mass emission rate, and corrected NO_x and CO emission concentrations for every clock hour and for every rolling 3-hour period.
(i) on an hourly basis, the cumulative total NO_x 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.
(j) For each calendar day, the average hourly heat input rates, corrected NO_x emission concentration, NO_x mass emission rate (as NO_2), corrected CO emission concentration, and CO mass emission rate for each gas turbine and associated HRSG combined and the auxiliary boiler.
(k) on a daily basis, the cumulative total NO_x mass emissions (as NO_2) 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: At least 30 days before first fire, the project owner shall submit to the CPM a plan on how the measurements and recordings required by this condition will be performed.

AQ-27. To demonstrate compliance with conditions **AQ-19(f) thru (h)**, **AQ-22(c) thru (e)**, and **AQ-23(c) thru (e)**, the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM10) mass emissions (including condensable particulate matter), and Sulfur Dioxide (SO_2) mass emissions from each power train. The owner/operator shall use the actual heat input rates measured pursuant to **AQ-26**, actual gas turbine start-up times, actual gas turbine shutdown times, and CEC and District-approved emission factors developed pursuant to source testing under **AQ-30** to calculate these emissions. The owner/operator shall present the calculated emissions in the following format:

(a) For each calendar day, POC, PM10, and SO_2 emissions, summarized for each power train (gas turbine and its respective HRSG combined) and all four sources (S-1, S-2, S-3 & S-4) combined

(b) on a daily basis, the cumulative total POC, PM10, and SO_2 mass emissions, for each year for all eight sources (S-1, S-2, S-3 & S-4) combined
(Offsets, PSD, Cumulative Increase)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-28. To demonstrate compliance with **AQ-25**, the owner/operator shall calculate and record on an annual basis the maximum projected annual emissions of: Formaldehyde, Benzene, and Specified PAH's. The owner/operator shall calculate the maximum projected annual emissions using the maximum annual heat input rate of 35,708,858 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 and S-3 gas turbines and/or S-2 and S-4 HRSGs. If the highest emission factor for a given pollutant occurs during minimum-load turbine operation, a reduced annual heat input rate may be utilized to calculate the maximum projected annual emissions to reflect the reduced heat input rates during gas turbine start-up and minimum-load operation. The reduced annual heat input rate shall be subject to District review and approval. (Regulation 2, Rule 5)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-29. Within 90 days of 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 **AQ-19(e)**. The source test shall determine the correlation between the heat input rates of the gas turbine and associated HRSG, A-2 or A-4 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 and full load modes) to establish the range of ammonia injection rates necessary to achieve NO_x emission reductions while maintaining ammonia slip levels. The owner/operator shall repeat the source testing on an annual basis thereafter. Ongoing compliance with **AQ-19(e)** shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. The owner/operator shall submit the source test results to the District and the CPM within 60 days of conducting the tests. (Regulation 2, Rule 5)

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this

condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-30. Within 90 days of 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 to determine compliance with **AQ-19(a),(b),(c),(d),(f),(g), and (h)** and while each gas turbine and associated Heat Recovery Steam Generator are operating at minimum load to determine compliance with **AQ-19(c) and (d)**, and to verify the accuracy of the continuous emission monitors required in **AQ-26**. 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 NO_2); carbon monoxide concentration and mass emissions; sulfur dioxide concentration and mass emissions; methane; ethane; and, particulate matter (PM10) emissions, including condensable particulate matter. The owner/operator shall submit the source test results to the District and the CPM within 60 days of conducting the tests. (BACT, offsets)

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-31. 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 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 PM10 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. The owner/operator shall submit the source test results to the District and the CPM within 60 days of conducting the tests. (BACT)

Verification: Approval of the source test procedures, as required in **AQ-31**, and the source test reports shall be deemed as verification for this condition. The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test

results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-32. Within 90 days of start-up of the RCEC and on a 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 **AQ-25**. The owner/operator shall also test the gas turbine while it is operating at minimum load. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to **AQ-25** for any of the compounds listed below are less than the BAAQMD trigger levels, pursuant to Regulation 2, Rule 5, shown, then the owner/operator may discontinue future testing for that pollutant:

Benzene	≤6.4 pounds/year and 2.9 pounds/hour
Formaldehyde	<30 pounds/year and 0.21 pounds/hour
Specified PAHs	≤0.011 pounds/year

(Regulation 2, Rule 5)

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-33. The owner/operator shall calculate the SAM emission rate using the total heat input for the sources and the highest results of any source testing conducted pursuant to **AQ-30**. If this SAM mass emission limit of **AQ-24** is exceeded, the owner/operator must utilize air dispersion modeling to determine the impact (in $\mu g/m^3$) of the sulfuric acid mist emissions pursuant to Regulation 2-2-306. (PSD)

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-34. Within 90 days of start-up of the RCEC and on a semi-annual basis (twice per year) thereafter, the owner/operator shall conduct a District-approved source test on exhaust points P-1 and P-2 while each gas turbine and HRSG duct burner is operating at maximum heat input rates to demonstrate compliance with the SAM emission rates specified in **AQ-24**. The owner/operator shall test for (as a minimum) SO_2, SO_3, and H_2SO_4. After acquiring one year of source test data on these sources, the owner/operator may petition the District to reduce the test frequency to an annual basis if test result variability is sufficiently low as determined by the

District. The owner/operator shall submit the source test results to the District and the CPM within 60 days of conducting the tests. (PSD)

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQ-35. 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 shall submit to the District and CPM the reports as required by procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual.

AQ-36. The owner/operator of the RCEC shall maintain all records and reports on site for a minimum of 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: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

AQ-37. 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: Submittal of these notifications as required by this condition is the verification of these permit conditions. In addition, as part of the quarterly and annual compliance reports of **AQ-19**, the project owner shall include information on the dates when these violations occurred and when the project owner notified the District and the CPM.

AQ-38. The owner/operator shall ensure that the stack height of emission points P-1 and P-2 is each at least 145 feet above grade level at the stack base. (PSD, Regulation 2-5)

Verification: At least 120 days prior to construction of the turbine stacks, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, EPA and CEC staff for inspection.

AQ-39. The owner/operator of 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 comply with the District Manual of Procedures, Volume IV, Source Test Policy and Procedures, and shall be subject to BAAQMD review and approval. (Regulation 1-501)

Verification: At least 120 days prior to construction of the turbine stacks, the project owner shall provide the District and CPM an "approved for construction" drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, EPA and CEC staff for inspection.

AQ-40. 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 emission monitors, sampling ports, platforms, and source tests required by **AQ-29, 30, 32, 34, and 43.** The owner/operator shall conduct all source testing and monitoring in accordance with the District approved procedures. (Regulation 1-501)

Verification: Compliance with this condition is the verification of this permit condition.

AQ-41. 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 completing construction as demonstrated by the first firing of any gas turbine or HRSG duct burner. (Regulation 2-6-404.1)

Verification: The project owner shall submit to the CPM copies of the Federal (Title IV) Acid Rain and (Title V) Operating Permit within 30 days after they are issued by the District.

AQ-42. Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the owner/operator of the Russell City Energy Center shall submit an application for a Title IV operating permit to the BAAQMD at

least 24 months before operation of any of the gas turbines (S-1, S-3, S-5, or S-7) or HRSGs (S-2, S-4, S-6, or S-8). (Regulation 2, Rule 7)

Verification: The project owner shall submit to the CPM copies of the Federal (Title IV) Acid Rain and (Title V) Operating Permit within 30 days after they are issued by the District.

AQ-43. The owner/operator shall ensure that the Russell City Energy Center complies with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

Verification: At least 60 days prior to the installation of the CEMS, the project owner shall seek approval from the District for an emission monitoring plan.

Permit Conditions for Cooling Towers

AQ-44. The owner/operator shall properly install and maintain the S-5 cooling tower to minimize drift losses. The owner/operator shall equip the cooling tower with high-efficiency mist eliminators with a maximum guaranteed drift rate of 0.0005%. 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 8,000 ppmw (mg/l). The owner/operator shall sample and test the cooling tower water at least once per day to verify compliance with this TDS limit. (PSD)

Verification: At least 120 days prior to construction of the cooling tower, the project owner shall provide the District and CPM an "approved for construction" drawing and specifications for the cooling tower and the high-efficiency mist eliminator.

AQ-45. 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 which 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 60 days of the initial operation of the cooling tower, the owner/operator shall perform an initial performance source test to determine the PM10 emission rate from the cooling tower to verify compliance with the vendor-guaranteed drift rate specified in **AQ-44**. The CPM may require the owner/operator to perform source tests to verify continued compliance with the vendor-guaranteed drift rate specified in **AQ-44**. (PSD)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

Permit Conditions for S-6 Fire Pump Diesel Engine

AQ-46. The owner/operator shall not operate S-6 Fire Pump Diesel Engine more than 50 hours per year for reliability-related activities. ("Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3)or (e)(2)(B)(3), offsets)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-47. The owner/operator shall operate S-6 Fire Pump Diesel Engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating hours while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited. ["Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection 9e)(2)(A)(3) or (e)(2)(B)(3)]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-48. The owner/operator shall operate S-6 Fire Pump Diesel Engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. ("Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(G)(1), cumulative increase)

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-19**.

AQ-49. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 60 months from the date of entry. Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.

a. Hours of operation for reliability-related activities (maintenance and testing).
b. Hours of operation for emission testing to show compliance with emission limits.
c. Hours of operation (emergency).
d. For each emergency, the nature of the emergency condition.
e. Fuel usage for each engine(s).

(Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(I), cumulative increase)

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA or CEC staff.

B. PUBLIC HEALTH

Staff's witness, Dr. Alvin J. Greenberg, testified that the amendments will not change the conclusions in the 2002 Decision. Staff reviewed the health risk assessment prepared by the Applicant and conducted its own independent screening assessment. It found that the predicted cancer risk and chronic and acute health impacts were below the levels considered to be significant. The maximum cancer risk would be approximately 4 in one million. (Ex. 100, pp. 4.7-3 – 4.7-4.) Compared with a lifetime cancer risk for the average person of 250,000 in one million (2002 Decision, p. 122) this is not a significant increase in cancer risk.

Staff also conducted a cumulative impact analysis, taking into specific account the proposed Eastshore Energy Center (06-AFC-6) located approximately one-half mile from the RCEC. Based on the results of a modeled assessment conducted for a similar situation in San Francisco, Staff concludes that the RCEC would "not add to a significant cumulative cancer or noncancer impact." (Ex. 100, p. 4.7-7.)

Dr. Greenberg notes one new regulation, adopted after the original approval of the RCEC, which applies to the project. Title 22, California Code of Regulations, section 60303 requires chlorine or other biocide treatment of cooling tower water. The purpose of the treatment is to protect workers and the public coming into contact with cooling tower mists from Legionella and other micro-organisms. To bring the project into compliance with that requirement, Dr. Greenberg proposes new Condition **PUBLIC HEALTH-1**, set forth below, which requires a Cooling Water Management Plan. With one minor modification, the Applicant accepts the Condition. (Ex. 10.) Staff accepts the Applicant's modification. (Ex. 101, p. 17.)

PUBLIC COMMENTS

During the Evidentiary Hearing, various members of the public expressed concerns about the public health impacts of the project, by itself and in conjunction with the proposed Eastshore Energy Center. While we understand that they are concerned, we do not find a basis for such concerns in the evidence, which demonstrates no significant health effects will result from the construction or operation of the project.

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The new Condition of Certification set forth below is appropriate and will ensure that the project is designed, constructed and operated 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 LORS.
3. The Public Health aspects of the proposed project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

The 2002 Decision did not impose any conditions under this topic. As Staff and the Applicant recommend, we add the following condition.

PUBLIC HEALTH-1 The project owner shall develop, implement, and submit to the CPM for review and approval a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is controlled. The Plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but in either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of power plant operations, the project owner may ask the Compliance Project

Manager (CPM) to re-evaluate and revise the Legionella bacteria testing requirement.

Verification: At least 60 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

C. HAZARDOUS MATERIALS MANAGEMENT

Staff's witness, Dr. Alvin J. Greenberg, testified that the amendments will not change the conclusions in the 2002 Decision regarding the construction of the project. The addition of the zero liquid discharge system and Title 22 recycled water facility, along with the elimination of the advanced water treatment facility, will change the inventory of chemicals stored and used on the site during operations. With the exception of aqueous ammonia storage, Dr. Greenberg found the changes to the inventory to be minor (Ex. 100, p. 4.4-2); the potential impacts from the project are mitigated to less than significant levels by proper design and the amended Conditions set forth below. (Ex. 100, p. 4.4-5.)

Dr. Greenberg believes that the Applicant's proposed aqueous ammonia storage facility could result in significant off-site impacts in the event of an ammonia spill. He therefore recommends that the storage tank and spill containment structure be designed similar to the design proposed for the original RCEC and proposes amendments to Condition **HAZ-4** and new Condition **HAZ-11** to reflect that requirement. (Ex. 100, p. 4.4-2.)

An April 9, 2007, Interim Final Rule of the U.S. Department of Homeland Security, (6 CFR Part 27, Section 27.100 et seq.) is now applicable to the project. It requires a Vulnerability Assessment and the implementation of specified security measures. We add Staff recommended Conditions **HAZ-12** and **HAZ-13** to require the appropriate assessments for construction and operations and security measures. (Ex. 100, pp. 4.4-4 – 4.4-5.)

Staff recommends other minor changes to the Conditions of Certification in order to conform with the amendment, which the Applicant accepts. (Ex. 7.)

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.

2. The amended Conditions of Certification set forth below are appropriate and will ensure that the project is designed, constructed and operated 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 LORS.

3. The Hazardous Materials Management aspects of the proposed project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material in any quantity or strength not listed in Tables 3.5-1 and 3.5-2 of the amendment unless reviewed in advance by the Hayward Fire Department and approved in advance by the CPM.

Verification: The project owner shall provide to the Compliance Project Manager (CPM), in the Annual Compliance Report, a list of all hazardous materials contained at the facility. If any changes are requested, the project owner shall do so in writing, with a copy to the Hayward Fire Department, at least 30 days before the change is needed, to the CPM for approval.

HAZ-2 The project owner shall provide a Risk Management Plan (RMP) and a Hazardous Materials Business Plan (HMBP), (that shall include the proposed 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 and other liquid hazardous materials. 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 incompatible hazardous materials including provisions to maintain lockout control by a power plant employee not involved in the delivery or transfer operation. This plan shall be applicable during construction, commissioning, and operation of the power plant and shall be submitted to the CPM for review and approval.

Verification: At least sixty (60) days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a SMP as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed and built 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 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm, and shall be covered so that only drain holes or spaces or vents are open to the atmosphere. The aqueous ammonia tanker truck transfer pad shall be designed so that any spill drains to the covered secondary containment structure. The final design drawings and specifications for the ammonia storage tank, the tanker truck transfer pad, and secondary containment basin shall be submitted to the CPM for review and approval.

Verification: At least sixty (60) days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank, the tanker truck transfer pad, and secondary containment basin(s) 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 50 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 Depot Road to the facility). If the route must be changed for any reason. the project owner shall obtain the review and approval of the CPM not later than ten (10) days before the next shipment of hazardous materials is due to arrive at the facility and shall notify the Hayward Fire Department at the same time a re°uest for route change is submitted to the CPM.

Verification: At least sixty (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. Anv chance to the route must be reviewed and approved by the CPM and must be made in writing not less than ten (10) days prior to the next shipment of hazardous materials to the facility.

HAZ-8 The project owner shall ensure that the portion of the natural gas pipeline owned by the project undergo a complete design review and detailed inspection 30 years after initial installation 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 portion owned by the project 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 inspection of that portion of the pipeline owned by the project 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 Deleted.

HAZ-11 Ammonia sensors shall be installed, operated, and maintained around the aqueous ammonia storage tank and tanker truck transfer pad. The

number, specific locations, and specifications of the ammonia sensors shall be submitted to the CPM for review and approval.

Verification: At least sixty (60) days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings showing the number, location, and specifications of the ammonia sensors to the CPM for review and approval.

HAZ-12 At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Site Security Plan shall include the following:

1. Perimeter security consisting of fencing enclosing the construction area;
2. Security guards;
3. Site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
5. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
6. Evacuation procedures.

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Site Security Plan is available for review and approval.

HAZ-13 In order to determine the level of security appropriate for this power plant, the project owner shall prepare a Vulnerability Assessment and submit that assessment as part of the Operations Security Plan to the CPM for review and approval. The Vulnerability Assessment shall be prepared according to guidelines issued by the North American Electrical Reliability Council (NERC 2002), the U.S. Department of Energy (DOE 2002), and the U.S. Department of Homeland Security regulations published in the Federal Register (Interim Final Rule 6 CFR Part 27).

Physical site security shall be consistent with the guidelines issued by the NERC (Version 1.0, June 14, 2002), the U. S. Department of Homeland Security (6 CFR Part 27), and the DOE (2002) and will also be based, in part, on the use, storage, and quantity of hazardous materials present at the facility.

The project owner shall also prepare a site-specific Security Plan for the operational phase that shall be made available on-site to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented will be determined by the results of the Vulnerability Assessment but in no case shall the level of security be less than that described as below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least 8 feet high;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for interfacing with local, state, and federal law enforcement, contacting law enforcement and the CPM in the event of suspicious activity or emergency, and participating in emergency response in the event of a terrorist attack upon the power plant;
5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
6. a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;

   b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site.
7. Site access controls for employees, contractors, vendors, and visitors;
8. A statement(s) (refer to sample, attachment "C") signed by the owners or authorized representative of hazardous materials transport vendors certifying that they have prepared and implemented security plans in conformity with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
9. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if

separate from the control room) capable of viewing, at a minimum, the main entrance gate and the ammonia storage tank; and

10. Additional measures to ensure adequate perimeter security consisting of either:

Security guards present 24 hours per day, 7 days per week.

or

Power plant personnel on-site 24 hours per day, 7 days per week and **all** of the following:

1. The CCTV monitoring system required in number 9 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100 percent of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **and**
2. Perimeter breach detectors **or** on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power pant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the project owner.

Verification: At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify the cpm that a site-specific vulnerability assessment and operations site security plan are available for review and approval.

(Attachment A)

SAMPLE CERTIFICATION
Affidavit Of Compliance for Proiect Owners

(Name of Person signing affidavit and title), do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of (Name of Company) for employment at (Project Name and Location) have been conducted as required by the California Energy Commission Decision for the above-named proiect.

_____
(Signature of Officer or Agent)

Dated on _____, 20__.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

(Attachment B)

SAMPLE CERTIFICATION
Affidavit Of Compliance for Contractors

(Name of Person signing affidavit and title), do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of (Name of Company) contract work at (Project Name and Location) have been conducted as required by the California Energy Commission Decision for the above-named project.

_____
(Signature of Officer or Agent)

Dated on _____, 20__.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

(Attachment C)

SAMPLE CERTIFICATION
Affidavit Of Compliance for Hazardous Materials Transport Vendors

____(Name of Person signing affidavit and title)_____, do hereby certify that the below named company has prepared and implemented security plans in conformity with 40 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B.

____(Name of Company)_____ for hazardous materials delivery to ____(Project Name and Location)_____ as required by the California Energy Commission Decision for the above-named proiect.

_____
(Signature of Officer or Agent)

Dated on _____, 20__.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

D. WORKER SAFETY/FIRE PROTECTION

The written testimony of Staff witness Dr. Alvin J. Greenberg (Ex. 100 pp. 4.14-1 – 4.14.7) indicates that the changes to the RCEC proposed by the Amendment Petition do not significantly change Staff's original analysis or conclusions that the project will not create any significant environmental effects and will comply with applicable LORS. Information obtained in the time between the 2002 approval of the project and the present, however, has led Staff to propose modifications and additions to the Conditions as follows:

Condition **WORKER SAFETY-2**'s requirement that the California Occupational Safety and Health Administration (Cal-OSHA) review and comment on several of the required plans and programs is proposed for elimination as Cal-OSHA has indicated that it no longer wishes to review those plans. (Ex. 100, p. 4.14-2.)

Based on its recent experience, including audits of Commission-approved power plants, Staff recommends that a Construction Safety Supervisor be designated to attend to issues of employee safety. (See Condition **WORKER SAFETY-3**.) In addition, Staff recommends that a Safety Monitor, selected by and reporting directly to the Chief Building Official, but paid by the Applicant, conduct periodic inspections to determine whether the CSS is properly performing his duties. See Condition **WORKER SAFETY-4**. (Ex. 100, pp. 4.14-2 – 4.14-3.)

Finally, in recognition of recent experience showing the importance and value of providing immediate attention to persons in cardiac arrest, Staff recommends Condition **WORKER SAFETY-5**, which requires that a portable automatic cardiac defibrillator be located on site and sufficient personnel trained in its use. (Ex. 100, p. 4.14-4.)

The Applicant agrees with Staff's proposed amendments to the Conditions. (Ex. 16.)

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.

2. The new and amended Conditions of Certification set forth below are appropriate and will ensure that the project is designed, constructed and operated 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 LORS.

3. The Worker Safety and Fire Protection aspects of the proposed project do not create significant direct or cumulative environmental effects.

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;
Fire Protection and Prevention Program (8 CCR § 3221); and;
Personal Protective Equipment Program (8 CCR §§ 3401-3411).

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.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) or, if a contractor is hired to oversee the construction of the power plant, ensure that one is provided who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

Have over-all authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
Assure that the safety program for the project complies with Cal/OSHA & federal regulations related to power plant projects;
Assure that all construction and commissioning workers and supervisors receive adequate safety training;
Complete accident and safety-related incident investigations, emergency response reports for injuries, and inform the CPM of safety-related incidents; and
Assure that all the plans identified in Worker Safety 1 and 2 are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement (CSS) shall be submitted to the CPM within one business day of replacement.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

Record of all employees trained for that month (all records shall be kept on site for the duration of the project);

Summary report of safety management actions and safety-related incidents that occurred during the month;
Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
Report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and will be responsible for verifying that the Construction Safety Supervisor, as required in Worker Safety 3, implements all appropriate Cal/OSHA and Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: Prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic cardiac defibrillator is located on site during construction and operations and shall implement a program to ensure that the recommended number of workers are properly trained in its use and that the equipment is properly maintained and functioning at all times, as per the manufacturer's instructions.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit to the CPM proof that a portable automatic cardiac defibrillator exists on site and a copy of the training and maintenance program for review and approval.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

Staff witness Marc Sazaki, in his written assessment, indicates that the amended project would comply with all LORS and would have "considerably less potential for impacts to biological resources" than the currently approved location. (Ex. 100, p. 4.2-1.) He recommends eliminating seven Conditions of Certification and making changes to five other Conditions. With the revised Conditions, he finds that the amended project would not cause any significant effects on biological resources. (Ex. 100, p. 4.2-5.)

The reduction in potential impacts results from 1) moving the project to a site that does not encroach on wetlands or directly impact sensitive species habitat; 2) eliminating the visual screening of the power plant structures (the "Wave," described in the **Visual Resources** section of this Decision) that could serve as perches for raptors who would prey on sensitive species nearby; and 3) the increased distance from the project site to sensitive species habitat that will reduce the impacts from construction and operations noise on those species. The new site is "nonexistent to marginal at best" wildlife habitat and no sensitive species are expected to be found there. Staff therefore recommends deletion of Conditions **BIO-6** requiring a Biological Opinion, **BIO-10** requiring habitat compensation and **BIO-15** requiring a Wetlands Mitigation Plan as no longer necessary. (Ex. 100, p. 4.2-2 – 4.2-4.)

Staff also recommends removing Condition **BIO-14** (Perch Management Plan) as no longer necessary due to the removal of the visual screening. (Ex. 100, p. 4.2-3.) Similarly, **BIO-8**, is no longer necessary as the substitution of a zero liquid discharge water treatment process for the previous Advance Water Treatment system eliminates the discharges into the Bay that required a Section 401 Clean Water Act certification from San Francisco Bay Regional Water Quality Control Board. (Ex. 100, p. 4.2-4 – 4.2-5.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.
3. The Biological Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

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 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. Inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity at the end of the construction day. Periodically inspect areas with high vehicle activity (parking lots) for animals in harms way. This inspection may be carried out by a person with qualifications in biological resources who is identified and selected by the Designated Biologist;
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 listing, including approval dates, of plans addressing storm water treatment at the project site including the Drainage, Erosion, and Sedimentation control Plan (DESCP) and the Storm Water Pollution Protection Plan (SWPP);
3. A list of all measures which will be implemented to mitigate the construction impacts caused by the proposed RCEC;

4. A list and a map of locations of all sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;
5. A list of all terms and conditions set forth by USACE Section 404 permits and state SFRWQCB 401 certifications, should these become necessary throughout the life of the project;
6. Detailed descriptions of all measures that will be implemented to avoid and/or minimize impacts to sensitive species and reduce habitat disturbance;
7. All locations, on a map of suitable scale, of areas requiring temporary protection and avoidance during construction;
8. 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;
9. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
11. All performance standards and remedial measures to be implemented if performance standards are not met;
12. A discussion of biological resource-related facility closure measures;
13. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval;
14. A copy of any State or USFWS Biological Opinion, and incorporation of all terms and conditions into the final BRMIMP, should a biological opinion become necessary any time throughout the life of the project;
15. A discussion of bird flight diverters and how they will be installed, replaced and maintained during the life of the project; and
16. A copy of the final construction noise mitigation plan

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 plans 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 training may be presented on electronic media in the form of a video recording.

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.

BIO-6 through BIO10, Deleted.

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 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. The final plan must be approved by the Energy Commission CPM in consultation with the USFWS, CDFG, and EBRPD.

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.

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. Energy Commission staff, in consultation with the USFWS and CDFG, 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.

B. SOIL AND WATER RESOURCES

Staff's testimony of Richard Latteri and Paul Richins concludes that the proposed amendment will continue to comply with all applicable LORS and will not cause any significant environmental effects. (Ex. 100, pp. 4.9-1 – 4.9-22; Ex. 101, pp. 18-21.) The Applicant has presented a draft Drainage, Erosion, and Sedimentation Control Plan which provides Best Management Practices (BMPs) for addressing soil erosion and treatment control methods for trapping eroded sediments during construction. Staff believes those BMPs satisfy stricter requirements adopted by the San Francisco Bay Regional Water Quality Control Board in 2003. (Ex. 100, p. 4.9-5 – 4-9.6.) A Storm Water Pollution Prevention Plan incorporating the provisions of the City of Hayward's NPDES permit will reduce all potential impacts from stormwater runoff during the plant's operation to less than significant levels. (Ex. 100, p. 4.9-9.)

Staff recommends various revisions to the Conditions of Certification to conform to the changes in the project's cooling water system, that Condition **SOIL & WATER-5** be deleted (Ex. 101, p. 18); characterization and remediation of potentially contaminated soils is now addressed by Conditions **WASTE-4**, **WASTE-8**, **WASTE-9** and **WASTE-10**. New Condition **SOIL & WATER-9** is recommended to enforce compliance with the City of Hayward's sanitary sewer discharge requirements. (Ex. 100, p. 4.9-12.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.

3. The Soil and Water Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

SOIL & WATER 1 Prior to beginning any site mobilization activities, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan (DESCP) that address all project elements. The DESCP shall include and be consistent with the standards normally required under the City of Hayward's Grading Permit. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and may incorporate by reference any Storm Water Pollution Prevention Plan (SWPPP) developed in conjunction with any state or municipal NPDES permit. The DESCP shall contain the following elements:

A. **Vicinity Map** – A map(s) at a minimum scale 1"=100' shall be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

B. **Site Delineation** – All areas subject to soil disturbance for the RCEC project (project site, lay down area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction area and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

C. **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. Indicate the proximity of those features to the RCEC project construction, lay down, and landscape areas and all transmission and pipeline construction corridors.

D. **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations and contours shall be extended off-site for a minimum distance of 100 feet.

E. **Drainage Narrative** – The DESCP shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres used in the calculation of drainage control measures. The

hydraulic analysis should be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the RCEC project construction and laydown areas.

F. **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. **Clearing and Grading Narrative** – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the RCEC project (project site, lay down areas, transmission corridors, and pipeline corridors) to include those materials removed from the site due to demolition, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported. The table shall distinguish whether such excavations or fill is temporary or permanent and the amount of material to be imported or exported.

H. **Best Management Practices** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading/demolition, excavation and construction, and final grading/stabilization). Treatment control BMPs used during construction should enable testing of stormwater runoff prior to discharge to the stormwater system. BMPs shall include measures designed to prevent wind and water erosion in areas with existing soil contamination. Treatment control BMPs used during construction should enable testing of groundwater and stormwater. If runoff has unacceptable levels of contaminants including petroleum hydrocarbons or PCBs, the runoff must be treated to acceptable levels prior to discharge.

I. **Best Management Practices Narrative** – The DESCP shall show the location (as identified in H above), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading/demolition, during project excavation and construction, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs, or a statement provided when such information will be available.

Verification: No later than 90 days prior to start of site mobilization, the project owner shall submit a copy of the DESCP to the City of Hayward (City) for review and comment. No later than 45 days prior to start of site mobilization, the project owner shall submit the DESCP and the City's comments to the CPM for review and approval. The CPM shall consider comments received from the City on the DESCP before issuing approval. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and relevant portions of the DESCP shall clearly show approval by the Chief Building Official. The DESCP shall be consistent with Stormwater Pollution Prevention Plan (SWPPP) developed in conjunction with the City's municipal NPDES Permit No. CAS0029831 for Construction Activity. The project owner shall provide in the monthly compliance report a narrative on the effectiveness of the drainage, erosion and sediment control measures; the results of monitoring and maintenance activities; and the dates of any dewatering activities.

SOIL & WATER 2: The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the construction of the RCEC site, laydown area, and all linear facilities. The Construction SWPPP shall abide by the City of Hayward's (City) Stormwater Management and Urban Runoff Control Ordinances (Chapter 11, Article 5) set forth in NPDES Permit No. CAS0029831.

Verification: The project owner shall submit to the CPM a copy of the Construction SWPPP that includes all requirements of Hayward Municipal Code Chapter 11, Article 5 for Stormwater Management and Urban Runoff Control prior to site mobilization and retain a copy on-site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the City about the City's Stormwater Management and Urban Runoff Control Ordinances and the General NPDES permit for the Discharge of Stormwater Associated with Construction Activities within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent for the project.

SOIL & WATER 3: The project owner shall comply with the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of the RCEC. The Industrial SWPPP shall abide by the City of Hayward's Stormwater Management and Urban Runoff Control Ordinances (Chapter 11, Article 5) set forth in NPDES Permit No. CA0029831.

Verification: The project owner shall submit to the CPM a copy of the Industrial SWPPP that includes all requirements of Hayward Municipal Code Chapter 11, Article 5 for Stormwater Management and Urban Runoff Control prior to commercial operation and retain a copy on-site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the City about the City's Stormwater Management and Urban Runoff Control Ordinances and the General NPDES permit for the Discharge of Stormwater Associated with Industrial Activity within 10 days of its receipt or submittal. The Industrial SWPPP shall include a copy of the Notice of Intent for the project.

SOIL & WATER 4: The project owner shall use tertiary-treated water supplied from the on-site Title 22 Recycled Water Facility (RWF) 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 on-site Title 22 RWF supply or secondary effluent from the City of Hayward, but not to exceed 45 days (1080 hours) in any one operational 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 Title 22 RWF supply is due to an Act of God, a natural disaster, an unforeseen emergency or other unforeseen circumstance outside the control of the project owner. If one of the aforementioned unavoidable interruptions should occur, the CPM, project owner and the City of Hayward shall confer and determine how best to restore the Title 22 RWF supply as soon as practicable. Potable water used for domestic purposes shall be metered separately from potable 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 RCEC will use tertiary recycled water for all non-potable uses including landscape irrigation. The RCEC will comply with requirements of Title 22 and Title 17 California Code of Regulations. Prior to the use of recycled water for any purpose, the owner shall submit a Title 22 Engineering Report that has been approved by the Department of Health Services (DHS) and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB).

The project owner shall prepare and submit to the CPM an annual summary that 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 revenue meters.

Verification: Prior to the use of recycled water for any purpose the project owner shall submit to the CPM the water supply and distribution system design and the Engineering Report for the Production, Distribution and Use of Recycled Water approved by DHS and the SFRWQCB demonstrating compliance with this condition. The recycled water supply and distribution system design shall be included in the final design drawings submitted to the CBO as required in Condition of Certification **Civil 1**.

The Engineering Report for the Production, Distribution and Use of Recycled Water shall be prepared in accordance with Title 22 and Title 17 of the California Code of Regulations, the Health and Safety Code, and the Water Code. The project owner shall comply with any reporting and inspection requirements set forth by DHS and the SFRWQCB to fulfill statutory requirements. The project owner shall submit copies to the CPM of all correspondence between themselves and DHS or the SFRWQCB within 10 days of receipt or submittal.

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: Deleted.

SOIL & WATER 6: Prior to site mobilization, the project owner shall provide the CPM with two (2) copies of an executed and final Water Supply Agreement in accordance with the City of Hayward (City) Municipal Code Section 11, Article 2 and any other service agreements with the City for obtaining potable water for the construction and operation of the Russell City Energy Center project. The project owner shall also provide the CPM with two (2) copies of an executed and final Recycled Water Supply Agreement that includes the Master Discharge Permit from the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for the production and delivery of recycled water by the City's Water Pollution Control Facility (WPCF).

The agreements shall detail any requirements, conditions, or restrictions on the project owner for the use of potable water and or secondary treated recycled water. The project owner shall not connect to the City's potable water or secondary effluent pipelines without final approval from the City. The project owner shall provide the CPM copies of the final approval from the City and all monitoring or other reports required by the agreements. The project owner shall notify the CPM of any violations of the agreements terms and conditions, the actions taken or planned to bring the project back into compliance with the agreements and the date compliance was reestablished.

Verification: At least 60 days prior to site mobilization, the project owner shall submit to the CPM two (2) copies of the executed Water Supply Agreement and any other service agreements between the project owner and the City for obtaining potable water for construction and operation of the RCEC in accordance with City Municipal Code Section 11, Article 2.

Prior to the use of recycled water (secondary or tertiary treated) for any purpose, the project owner shall submit to the CPM two (2) copies of an executed and final Recycled Water Supply Agreement between the project owner and the City for the supply of secondary effluent. The Recycled Water Supply Agreement will include the Master Discharge Permit from the SFBRWQCB for the production and delivery of recycled water by the WPCF.

During operations, the project owner shall submit any water quality monitoring reports for potable or recycled water use required by the City to the CPM in the annual compliance report. The project owner shall submit any notice of violations from the City to the CPM within ten (10) days of receipt and fully explain the corrective actions taken in the annual compliance report. The project owner shall submit any notice of violation of the agreements' terms and conditions to the CPM within ten (10) days of receipt and shall fully explain the corrective actions taken in the next monthly compliance report or annual compliance report, as appropriate.

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. The project owner shall also obtain a Section 401 Clean Water Act certification from the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) or provide a letter from the SFBRWQCB stating that 401certification is not required.

SOIL & WATER 9: Prior to commercial operation, the project owner shall provide the CPM and the City of Hayward (City) with all the information and data necessary to satisfy the City's pretreatment requirements for the discharge of industrial and sanitary wastewater to the City's sewer system. The project owner shall provide the CPM with two (2) copies of an executed and final discharge permit for industrial and sanitary wastewater discharge in accordance with Municipal Code Section 11, Article 3 and any other service agreements with the City for discharge to the City's sanitary sewer system. During operation, any monitoring reports provided to the City shall be provided to the CPM. The CPM shall be notified of any violations of discharge limits or amounts.

Verification: No later than sixty (60) days prior to commercial operation, the project owner shall submit the information and data required in accordance with Municipal Code Section 11, Article 3 and any other service agreements for wastewater discharge to the City's sanitary sewer system to the City for review and comment, and to the CPM for review and approval. During operations, the project owner shall submit any water quality monitoring required by the City to the CPM in the annual compliance report. The project owner shall submit any notice of violations from the City to the CPM within ten (10) days of receipt and fully explain the corrective actions taken in the annual compliance report.

C. CULTURAL RESOURCES

The Staff's testimony of Dorothy Torres describes surveys that have been conducted of the new project areas, including those of the transmission line and gas and water pipelines. Those surveys did not identify any cultural resources that would be affected by the amended project. Nonetheless, to assure that any unexpected cultural resources which are discovered during construction of the project are properly handled, Staff recommends that the previously adopted Conditions of Certification remain in place with amendments to account for the changes made by the amendment and to reflect current Conditions of Certification. With those amended Conditions, the project will comply with all applicable LORS and will not cause significant environmental effects to cultural resources. (Ex. 100, p. 4.3-1 – 4.3-16.)

The Applicant agrees with the proposed amended Conditions of Certification. (Ex. 5.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.
3. The Cultural Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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. Approval of a CRS may be denied or revoked for non-compliance on this or previous Energy Commission projects.

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).

No ground disturbance shall occur prior to CPM approval of the CRS, unless specifically approved by the CPM.

Verification: At least 45 days prior to the start of pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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 a termination or release of the CRS, or within 3 days after resignation of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. If there is no alternate CRS in place to conduct the duties of the CRS, a previously approved monitor may serve in place of a CRS so that construction may continue up to a maximum of 3 days without a CRS. If cultural resources are discovered, then construction will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

CUL-2 Prior to the start of pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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 quadrangle(s) 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. No ground disturbance

shall occur prior to CPM approval of maps and drawings, unless specifically approved by the CPM.

(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 provided 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 pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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 pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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. No pre-construction site mobilization; construction ground disturbance; construction grading, boring, and

trenching; and construction, shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

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. A prescriptive treatment plan may be included in the CRMMP for limited resource types. A refined research design will be prepared for any resource where data recovery is required.

b. The following statement must be included in the Introduction: "Any discussion, summary, or paraphrasing of the conditions in the CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Decision, shall supersede any summarization, description, or interpretation or the conditions in the CRMMP. The Cultural Resources conditions of certification from the Decision are contained in Appendix A."

c. 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.

d. 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.

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

f. 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.

g. 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.

h. 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, a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design and that 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. 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.

i. 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.

j. 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 pre-construction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, 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 The project owner shall ensure that a Worker Environmental Awareness Training for all new employees shall be conducted prior to beginning and during periods of pre-construction site mobilization, construction ground disturbance, construction grading, boring, and trenching, and construction. 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: At a minimum, training for new employees shall be conducted on a weekly basis. Copies of acknowledgement forms signed by trainees shall be provided in the MCR.

CUL-5 The project owner shall ensure that 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 discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation and any necessary data recovery and mitigation have been completed; and

(3) 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 project owner shall ensure that 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 or e-mail 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 email, of ~~any~~all incidents of non-compliance with any cultural resources conditions of certification within 24 hours 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 as identified by the CRS. 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 actions underway 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-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 Prior to any form of debris removal, ground clearing, or grading at the Aladdin Parcel, Transmission Line Route Alternative 2, and portions of Alternative 1 subject to ground disturbance, the CPM shall be informed via e-mail or other method acceptable to the CPM, that debris removal, ground clearing, or grading is about to occur. The project owner shall ensure that the CRS, alternate CRS, or CRM(s) monitors full time (one person monitoring each large piece of machinery) during the removal of old vehicles, storage containers, gravel, debris, and overburden and during grading at the Aladdin Parcel, at Transmission Line Route Alternative 1 locations where ground disturbance is likely, and along Transmission Line Route Alternative 2. If there is a discovery during the removal process, then the Cultural Resources conditions of certification shall apply.

After removal of the various kinds of debris obscuring the ground surface, the CRS shall examine cleared ground as it is revealed, or conduct or oversee an archaeological pedestrian survey of the project site and linear locations not previously surveyed. If there is a discovery during the examination or survey, then the Cultural Resources conditions of

certification shall apply. After completion of each examination or pedestrian archaeological survey, and prior to any grading or ground disturbance, a letter report from the CRS identifying monitoring and survey personnel and detailing the examination or survey methods, procedures, location, and results shall be provided to the CPM for review and approval.

Verification: One week prior to any form of debris removal, ground clearing or grading at the Aladdin Parcel, Alternative 2 transmission line route, and Alternative 1 Transmission Line Route where there may be ground disturbance, the project owner shall inform the CPM via e-mail, or another method acceptable to the CPM, that the debris removal, ground clearing, or grading will begin within one week and that the CRS, alternate CRS or CRM(s) are available to monitor. No later than one week after completion of each cleared earth examination or survey, and prior to any additional grading or ground disturbance, a letter report identifying survey personnel and detailing the methods, procedures, location, and results of the examinations or surveys shall be provided to the CPM for review and approval.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

Patrick Pilling, Ph.D., P.E., G.E., testified on behalf of the Staff that the relocation of the project 1300 feet to the northwest of the previously approved location does not change the conclusions in the 2002 Decision. The new site, as was the old site, is subject to geological hazards such as strong ground shaking and liquefaction. Those hazards can be mitigated through facility design as required by the California Building Code. Potential impacts to paleontological resources, if found during construction, can be mitigated by procedures specified in the previously adopted Conditions of Certification. (Ex 100, p. 5.2-1.) The only change proposed for the Conditions of Certification is to update the references to the CBC to refer to the now current 2001 version.[16]

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.
3. The Geological and Paleontological Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

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 2001 edition of the California Building

[16] In the Conditions recommended in the Staff Assessment (Ex. 100, pp. 5.2-4 – 5.2-9), not all references to the 1998 CBC were changed to 2001. We assume that was an oversight and have made the changes wherever the 1998 CBC is cited.

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 names(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 2001 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 2001 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 of 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 2001 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/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 the completion of the final grading, the project Owner shall submit copies of the Final Geologic Report required by the 2001 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 al 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 on 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 on contacts familiar with the specialist's work of these referenced projects.

If the CPM determined 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 the 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 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, trending, 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 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 Resource 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

The testimony of Staff witness Ellie Townsend-Hough indicates that the amended project will comply with applicable LORS and will not cause significant environmental effects. Phase I and Phase II investigations of the new site do, however, note the presence of contaminants in the soil; additional information must be obtained prior to the start of construction and appropriate remediation plans prepared to assure that the contaminants are properly treated. The Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board will be consulted during that process. The salt cake produced by the zero liquid discharge cooling water treatment system will be tested and disposed of in a proper facility; whether or not the cake is determined to be a hazardous waste, sufficient disposal facility capacity exists to handle it. Staff recommends new and revised Conditions of Certification to memorialize those requirements. (Ex. 100, pp. 4.13-1 – 4.13-17.)

At the Evidentiary Hearing, Staff and the Applicant requested additional time in which to review the amended Conditions of Certification proposed by Staff. They were to submit further jointly agreed upon revisions by July 27, 2007. On that date, Staff submitted jointly agreed to revisions to newly proposed Conditions **WASTE-8** through **WASTE-10**. (Ex. 105, Exhibit A.) We have incorporated those revisions into the Conditions of Certification, below.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.

3. The Waste Management aspects of the amended project do not create significant direct or cumulative environmental effects.

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 CEC 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 for approval. The Operation Waste Management Plan shall be submitted no less than 30 days prior to the start of project operation for approval. 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 and provide a comparison of the actual methods used to those proposed in the original Operation Waste Management Plan.

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 Bay Regional Water Quality Control Board, City of Hayward Fire Department Hazardous Materials Office, and the Berkeley 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 ensure that the ZLD salt cake is tested twice the first year of operation as per 22 CCR 66262.10 and report the findings to the CPM.

Verification: The project owner shall include the results of salt cake testing in annual report provided to the CPM. If two consecutive tests, taken six months apart, show that the sludge is non-hazardous, the project owner may apply to the CPM to discontinue testing.

WASTE-6 Prior to site mobilization, the project owner shall enter in to a cost recovery agreement with the Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board, These agreements will assist agencies' review of the clean-up, demolition, construction and operation of the Russell City Energy Center Project.

Verification: The project owner shall submit copies of cost recovery agreements to the CPM, at least 60 days prior to start of construction.

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.

WASTE-8 The project owner shall prepare in consultation with the CEC, City of Hayward Fire Department and the RWQCB a groundwater sampling plan to be part of the Soils Management Plan submitted in WASTE-9. The sampling locations and constituents to be sampled will be based on previous results from the site assessments already conducted, and will specifically consider the biosolids drying area, the wood treatment area and the metal Master's building to fill data gaps.

Verification: The Project shall submit the groundwater sampling report to the San Francisco Bay Regional Water Quality Control Board and Hayward Fire Department at least 60 days prior to start of construction. At least 30 days prior to the start of commercial operations, if the groundwater is found to be contaminated the project owner shall submit to the CPM documentation that the groundwater sampling report has been recorded as part of the environmental Restrictions required by Waste-11.

WASTE-9 Prior to any earthwork, the project owner shall prepare and submit to the City of Hayward Fire Department, San Francisco Bay Regional Quality Control Board, and the CPM for approval, a Soils Management Plan (SMP). The SMP must be prepared by a California Registered Geologist, a California Certified Engineering Geologist, or a California Registered Civil Engineer with sufficient experience in hazardous waste management. The SMP should include but is not limited to the following:

- Land use history, including description and locations of known contamination;
- An earthwork schedule;
- A SMP summary report, which includes all analytical data and other findings, must be submitted once the earthwork has been completed;
- The project owner shall describe methods which will be used to properly handle and/or dispose of soil which may be classified as hazardous or contain contaminants at levels of potential concern;

- The SMP will discuss, as necessary, the reuse of soil on site in accordance with applicable criteria to protect construction or future workers onsite; and
- This SMP may be submitted as part of the cleanup plan.

Verification: At least 60 days prior to any earthwork, including those earthwork activities associated with the site mobilization, ground disturbance, or grading as defined in the general conditions of certification the project owner shall submit the Soils Management Plan to the City of Hayward Fire Department and the San Francisco Bay Regional Quality Control Board for review and comment, and to the CPM for approval.

WASTE-10 The project owner shall ensure that the site is properly characterized and remediated. The project owner shall consult with the City of Hayward Fire Department and the San Francisco Bay Regional Quality Control Board in preparing a Site Cleanup Plan for soil and groundwater contamination present on the RCEC site in compliance with the Water Quality Control Plan for the San Francisco Bay Region prepared pursuant to the Porter-Cologne Water Quality Act, California Water Code Section 13240. The project owner shall submit this plan to both the City of Hayward Fire Department and the San Francisco Bay Regional Quality Control Board for review and comment to the CPM. The Site Cleanup Plan shall present cleanup goals, remediation alternatives considered, and measures selected to address human health risks. This Site Cleanup Plan shall include a schedule for the remediation of the site prior to the commencement of ground disturbance and shall also include a copy of all correspondence between the project owner and the Hayward Fire Department on matters regarding the RCEC Site Cleanup Plan.

Verification: At least 120 days prior to any ground disturbance, which include those activities associated with site mobilization, or grading as defined in the General conditions of certification the project owner shall submit the Site Cleanup Plan to the City of Hayward Fire Department, and the San Francisco Bay Regional Water Quality Control Board and the CPM. At least 30 days prior to any ground disturbance, the CPM, will discuss with the Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board, and shall determine whether the project owner has satisfactorily implemented the Site Cleanup Plan and, if so, allow grading/construction to begin.

WASTE-11 Following completion of the merger and/or lot line adjustment(s) associated with Condition of Certification **LAND -2**, the project owner shall execute and record a deed for the project site, as identified in the Certificate of Merger and/or Notice of Lot Line Adjustment, with the City of Hayward Recorders Office, which shall include a map and detailed description identifying any easements, restrictions, and

limitations on the use of the property, with regard to any hazardous materials, wastes, constituents, or substances remaining on-site following closure of the proposed power plant. The project owner shall also file a Covenant and Environmental Restriction on Property with the San Francisco Bay Regional Water Quality Control Board identifying any hazardous materials, wastes, constituents, or substances that would remain at the property after closure of the power plant at levels that are not suitable for unrestricted use of the land.

Verification: The project owner shall provide copies of the deed and any attachments, with proof of recordation, and the Covenant and Environmental Restriction on Property, with proof of submittal, to the CPM, as part of the compliance package at least 30 days prior to plant closure or sale of property.

WASTE-12 The project owner shall properly destroy groundwater monitoring wells not in use as required by Alameda County Public Works, the City of Hayward Fire Department, the San Francisco Bay Regional Water Quality Control Board, and the Alameda County Water District.

Verification: The project owner shall provide evidence to the CPM that the wells have been destroyed in accordance with Alameda County Public Works, the City of Hayward Fire Department, the San Francisco Bay Regional Water Quality Control Board, and the Alameda County Water District requirements.

VII. LOCAL IMPACT ASSESSMENT

A. LAND USE

Staff's witness Shaelyn Strattan testified that the amended project would conform to all LORS except those relating to avoidance of hazards to aviation traffic at the nearby Hayward Executive Airport. The aviation issues are discussed in depth in the **Traffic and Transportation** topic, below. In brief, the Staff's concern is that thermal plumes—rising columns of air—from the power plant HRSGs and cooling towers may adversely affect aircraft flying over the HRSGs or cooling towers.

The new project site proposed in the amendment is designated Industrial Corridor in the City of Hayward General Plan and is zoned Industrial. The site consists of three separate parcels and part of a fourth parcel.[17] (Ex. 100, p. 4.5-6.) The General Plan and zoning designations are the same as those for the original project site. Staff reviewed the amended project against the goals and policies of the City's General Plan and found it to be consistent with those goals and policies. (Ex. 100, pp. 4.5-9 – 4.5-12.) Similarly, it found the power plant conditionally permitted in the Industrial zone on the basis of its similarity to expressly named allowed uses such as manufacturing. (Ex. 100, p. 4.5-12 – 4.5-13.)

The aviation issue arises in the context of making the above determination of use similarity and in reviewing the findings required in order to approve a conditional use permit (CUP). Hayward Municipal Code Section 10-1.140 provides:

> When a use is not specifically listed in the sections devoted to "Uses Permitted," it shall be assumed that such uses are prohibited unless it is determined by the Planning Director or on appeal to the Planning Commission that the use is similar to and not more objectionable or

[17] Though parts of the new project site were located in the unincorporated area at the time the amendment petition was filed, as of March 5, 2007, following an annexation proceeding, all of the project site was within the incorporated area of the City of Hayward. (Ex. 100, p. 4.5-6.)

intensive than the uses listed. Further, uses are permitted and conditions to use are established within each district as set forth herein.

Staff believes that, because of the potential hazard that it presents to aircraft, the power plant cannot be said to be "not more objectionable" than the uses to which it is called similar and therefore is not allowed in the Industrial zone at the proposed location. (Ex. 100, p. 4.5-12 – 4.5-13.) Similarly, the Staff does not believe that the CUP finding that "[t]he proposed use will not be detrimental to the public health, safety, or general welfare" (Hayward Municipal Code Section 10-1.3225.c.) can be made in light of the thermal plume concerns.

As we conclude in the **Traffic and Transportation** section, below, the RCEC will not be a hazard to aircraft, even less so with the additional protective measure of a notice to pilots to avoid overflight of its thermal plumes. It will also comply with all applicable LORS, including the Municipal Code Sections cited above.

Staff proposes modifications to Condition **LAND-1** to more precisely describe the post-approval process for assuring the Applicant's detailed design plans' conformity with City of Hayward development standards.

Staff recommends the adoption of Condition **LAND-2** to cause the merger and adjustment of parcel lines so that the project site consists of a single parcel.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below, along with Condition **TRANS-10** are appropriate and 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 LORS.
3. The Land Use aspects of the amended project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall ensure that the project and its associated facilities are in compliance with the City of Hayward's Industrial Zoning District, including the lot and yard requirements, height limits, and minimum design and performance standards, and other applicable municipal code requirements.

The project owner shall submit a development plan to the City of Hayward Planning Department in sufficient time to allow for an advisory review of the project and its associated facilities for compliance with the jurisdiction's site development and permitting requirements and to provide comments to the project owner and Energy Commission's Compliance Project Manager (CPM). The development plan shall include all elements normally required for review and permitting of a similar project, including site plan, structural dimensions, design and exterior elevation(s), and proof of any required permits.

Verification: At least 90 calendar days prior to the start of construction, including any grading or site remediation on the power plant project site and its associated facilities, the project owner shall submit the proposed development plan to the City of Hayward Planning Department for review and comment and to the CPM for review and approval. The project owner shall also provide a copy of the transmittal letter to the City of Hayward.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the local jurisdiction, along with any changes to the proposed development plan, to the CPM for review and approval.

LAND-2 The project owner shall adjust the boundaries of all parcels to which the project owner holds fee title that constitute the RCEC and Zero Liquid Discharge Facility project sites as necessary to merge all properties into a single parcel, under single ownership, within the City of Hayward jurisdiction, in accordance with provisions and procedures set forth in the City of Hayward's Municipal Code, Chapter 10 - Article 3 (Subdivision Ordinance). Prior to the start of construction, the project owner shall provide a copy of its executed lease for the Aladdin parcel on the terms it described at the September 5, 2007, Evidentiary Hearing (40-year initial term with two 10-year extension options); the economic terms of the lease may be redacted at the project owner's option.

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 merger 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 certificate of merger and/or notice of lot line adjustment by the city. If all parcels or portions of parcels are not owned by the project owner at the time of the merger, a separate deed shall be executed and recorded with the County Recorder. A copy of the recorded deed shall be submitted to the CPM, as part of the compliance package. A copy of the executed Aladdin parcel lease shall be provided to the CPM no later than 20 days prior to the start of construction.

B. NOISE

The testimony of Staff witness Steve Baker indicates that the conclusions in the 2002 Decision would not be changed by the proposed amendment. Changes proposed in the amendment that are taken into account in the noise analysis include the moving of the project site 1300 feet to the northwest of the original location; replacing the Advanced Water Treatment plant with a Zero Liquid Discharge facility, eliminating the standby generator, and constructing a sound wall along the southern edge of the project site. The relocation of the site increases the distance to the nearest sensitive receptor from .82 miles to .96 miles.

The Staff's noise analysis predicts increases in noise levels at each of the proposed noise monitoring sites of 1 to 3 dBA. As the 2002 Decision notes, increases in noise levels of 5 dBA or less are not considered to be significant impacts. (Ex. 100, p. 4.6-3.) The predicted noise levels at the project site boundaries are 75 dBA or less (Ex. 1, Figure 3.7-1, p. 3-111) which is within the limits established in the Hayward General Plan Noise Element. (Ex. 100, p. 4.6-3.)

Staff recommends minor changes to the Conditions of Certification to change one of the noise monitoring sites to reflect the new project site boundaries and to memorialize the sound wall the Applicant proposes to construct on the project's southern boundary.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.

3. The Noise aspects of the amended project do not create significant direct or cumulative environmental effects.

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 Exhibit 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. Included shall be a sound wall along the southern edge of the project site.

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 the eastern boundary of the project site, and at monitoring sites 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 the eastern boundary of the project site or at monitoring sites 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

Staff witness Amanda Stennick testified that the amended project will not cause significant socioeconomic effects. The original estimates of project benefits, updated for increased costs, now show a total construction cost of $600 million (previously it was $300 to $400 million), construction wages of $74.7 million ($58.2 million), sales taxes during construction of $1,050,000 ($412,500 to $825,000). Property tax revenues to the City and County would be approximately $6.17 million annually ($3.47 million to $4.63 million). Project labor will peak at 650 persons (485) with a monthly average of 324 persons (277). (Ex. 100, p. 4.8-3; 2002 Decision, p. 209.)

Staff recommends deleting Condition **SOCIO-1** requiring recruitment of employees and sourcing of supplies and materials locally because it has found the Condition creates additional work for the project developers and Staff and yields little useful information. It also recommends amending Condition **SOCIO-2** to remove its reference to a non-existent permit as the trigger for the obligation to pay school impact fees. (Ex. 100, p. 4.8-5.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Condition of Certification set forth below is appropriate and will ensure that the project is designed, constructed and operated in accordance with applicable law.
3. The Socioeconomics aspects of the amended project do not create significant direct or cumulative environmental effects.

CONDITIONS OF CERTIFICATION

SOCIO-1: Deleted.

SOCIO-2 The project owner shall pay the one-time statutory school facility development fee to the Hayward Unified School District as required by Education Code Section 17620.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide proof of payment of the statutory development fee.

D. TRAFFIC AND TRANSPORTATION

The testimony of Staff witness James Adams identifies three changes in baseline information relevant to the proposed amendment: 1) primary site access during operation will change from Enterprise Avenue to Depot Road; 2) construction workforce (650 versus 510 at the peak) and vehicle traffic estimates are increased from the original project; and 3) new worker parking areas are available that may eliminate the need to bus workers to the construction site. In addition, the reconstruction of the Interstate 880/State Route (SR) 92 interchange and associated on and off-ramps will occur during the construction time period potentially affecting traffic in the project area. (Ex. 100, pp. 4.10-1, 4.10-6.)

To avoid a potential service level deterioration on Clawiter Road from Industrial Blvd. to SR-92, Staff recommends retention of Condition **TRANS-1** to prevent construction traffic from using Clawiter Road or other local roads during peak AM/PM traffic periods. Staff also recommends the deletion of Condition **TRANS-2** as it no longer appears necessary to bus workers from parking sites to the construction site. (Ex. 100, pp. 4.10-7 – 4.10-8.)

Condition **TRANS-3**, which requires compliance with all federal, state, and local regulations relating to the transportation of hazardous materials, is also recommended for deletion without explanation. (Ex. 100, p. 4.10-20.) The regulations will apply to the project whether or not mentioned in a Condition; the contribution of the Condition is to require monthly reporting of permits and licenses acquired by the Applicant and its contractors. Given the less inclusive but more focused and specific Conditions in the **Hazardous Materials** section, we see no harm in deleting this Condition as Staff requests.

The Applicant requested the deletion of Conditions **TRANS-4** and **TRANS-5**, requiring street improvements on Enterprise Avenue and Whitesell Street, respectively, as no longer necessary because the project has moved away from

those streets. (Ex. 1, pp. 3-163 – 3-164.) Staff agreed to delete **TRANS-5** but asserts that **TRANS-4** should be retained as still potentially necessary for improving Enterprise Avenue prior to its use as the point of access to the project site during construction. (Ex. 100, pp. 4.10-3, 4.10-20.)

The Applicant agrees with the above modifications to the Conditions proposed by Staff. (Ex. 13, p. 3.)

Aviation Safety Issue

The only significant point of disagreement between the Staff and Applicant is over the potential effects of the project on aviation. This issue has overlapping **LAND USE** and **TRAFFIC and TRANSPORTATION** aspects; for convenience we discuss both aspects in this section. They can be summarized by the following questions:

1. Do the thermal plumes from the HRSGs and cooling towers create a potentially significant public safety impact (hazard) to aircraft flying over the power plant?

2. If there is a potential impact, is it mitigated by advising pilots not to fly over the power plant at elevations below 1,000 feet?

3. Does the removal of the airspace above the power plant from the navigable airspace in the vicinity of the Hayward Executive Airport create either significant public safety impacts or violate applicable LORS?

At the Evidentiary Hearing, extensive oral and written testimony was received from the Applicant (Douglas Davy, Christine Killip, Gregory Darvin, and Marshall Graves), Staff (Eric Knight, Shaelyn Strattan, James Adams, and William Walters) and Intervenor (Carol Ford) on these issues.

The amended RCEC project site is located approximately 1.5 miles to the southwest of the Hayward Executive Airport. It lies off the side of the airport's two parallel runways. Aircraft do not need to fly over the project site in order to

land at, or depart from, the airport. The prescribed traffic pattern for the airport is an oval area surrounding the airport perimeter; the project site is one-half mile outside that area. (See **FIGURE 4 - TRAFFIC AND TRANSPORTATION**.) Aircraft tracking diagrams provided by the City for April, 2007 show that, of approximately 10,000 flights in the area, only 40 aircraft flew over or within 480 feet of the project site at elevations at or below 1,000 feet. (Ex. 100, p. 4.10-10, RT, 158.) Over 80 percent of the air traffic at the airport is single engine, general aviation aircraft. (Ex. 100, p. 4.5-17.) Four existing, 228-foot-tall KFAX AM 1100 radio towers, are on the previously approved project site, approximately 1,300 feet (300 feet boundary to boundary) to the southeast of the amended project site. (2002 Decision, p. 221.)

The Applicant commissioned an analysis of vertical plume velocities from Katestone Environmental of Brisbane, Australia.[18] Ms. Killip, an atmospheric scientist and Managing Director of Katestone, explained that the analysis concluded that under calm-wind conditions, the plumes from the RCEC will have a vertical velocity below 4.3 meters per second at about 1,000 feet above ground. (RT, 146.) Taking into account actual wind measurement data for the project area, the average plume vertical velocity is below 4.3 meters per second at 305 feet for the nine cooling towers and 600 feet for the two HRSGs, 99.95 and 99.8 percent of the time, respectively. (Ex. 28, p. 18.)

Mr. Darvin testified that the 4.3 meters per second vertical velocity figure is an Australian screening standard, not an absolute standard.[19] If it appears that the

[18] The Australians appear to be among the first to consider aviation impacts from industrial plumes.

[19] And no witness was able to explain the origin of this standard. Ms. Killip said it is the guideline she has used in the over ten years her firm has been conducting plume assessments. (RT, 144.) Dennis O'Leary, a representative of the Australian Civil Aviation Safety Authority, in an email to Dr. Davy, describes it as "somewhat loss [sic] in antiquity". Mr. O'Leary also refers to it as a "4.3 m/s trigger for plume rise assessment," which is consistent with Mr. Darvin's characterization of it as a screening standard. (Ex. 28, Attachment 8.)

vertical velocity of a project's plume will not exceed that rate, no further analysis is required. If the rate will exceed it, a site specific analysis is undertaken. He faults Staff's analysis as stopping at the screening stage, using calm winds, failing to take into account site-specific wind data. A calm wind analysis is overly conservative. In the last seven years, only nine calm hours were recorded in Union City; Fremont recorded no calm wind hours in a five year period.[20] (RT 147-8.)

Mr. Graves, a former Naval pilot and instructor, licensed airline transport pilot (multi-engine rating) and helicopter pilot, testified about the effects of the predicted thermal plumes on small aircraft. He calculated the 4.3 meters per second rate to equate to 840 feet per minute. The definition for aviation weather forecasting purposes of "light turbulence" is vertical gusts and wind shears from 300 to 1200 feet per minute. "Moderate turbulence" is defined as from 1200 to 2100 feet per minute. The Federal Aviation Administration (FAA) certifies small aircraft to encounter gusts of 3000 feet per minute and helicopters for gusts of 1800 feet per minute (RT 155) and expects that any pilot at any skill level could maintain control of the aircraft under those circumstances (RT, 156). Pilots are trained to respond to unusual disruptions that are far beyond any likely to result from encountering a thermal plume. (RT, 158-9.) A pilot encountering one of the plumes in a typical small plane (Cessna 172) would find his nose tilted up by the updraft, but not to a degree that would bring the plane close to the angle at which it might stall. (RT, 154-5.)

The Applicant also offered in support of its assertion that the thermal plumes will not be a hazard to air navigation a 2006 FAA study entitled "Safety Risk Analysis of Aircraft Overflight of Industrial Exhaust Plumes" (FAA Study). (Ex. 20, Attachment DR55-1.)

[20] Several public comments and letters submitted by the public during this proceeding also note the prevalence of winds in the area.

The study's conclusions, summarized in its Executive Summary, are as follows:

> The safety risk analysis team performed their analysis of the predictive risks associated with the plumes and determined the effects of the hazards as low, or in the green section of the risk matrix. As a result of this assessment, the risk associated with plumes is deemed acceptable without restriction, limitation, or further mitigation.
>
> However, to further lower the already acceptable risk associated with the overflight of vertical plumes, the team recommended the continuance of training and awareness programs that have been successful with similar hazards of acceptable risk levels. The safety risk assessment team recommended the following:
>
> - Amend the Aeronautical Information Manual (AIM) Chapter 7, Section 5 with wording to the effect that overflight at less than 1,000 feet vertically above plume generating industrial sites should be avoided.
> - Publish (as appropriate) the position and nature of the present power plants located near public airports in the Airport/Facility Directory (A/FD) and issue a Notice to Airmen (NOTAM) when operationally necessary.
> - Where operationally feasible, make the temporary f[l]light restriction (TFR) that includes the overflight of power plants a permanent flight restriction.[21]
> - Amend FAA Order 7400.2 to consider a plume generating facility as a hazard to navigation when expected flight paths pass less than 1,000 feet above the top of the object. Flight Standards Service will be required to provide comment for any facility not meeting this criterion.
> - Amend Advisory Circular 70.7460-2K Proposed Construction of Objects that May affect the Navigable Airspace – Change Instructions for Completing FAA Form 7460-1 – Notice of Proposed Construction or Alteration Item # 21, add:
>
>> *"For structures such as power plants or any industrial facility where exhaust plume discharge could reasonably be expected and reportable under the provisions of Part 77, thoroughly explain the nature of the discharge."*
>
> These actions will serve to further enhance safety within the National Airspace System. (Ex. 20, Attachment DR55-1, pp. iv-v.)

[21] October 8, 2004 NOTAM No. FDC 4/0811: "In the interest of national security and to the extent practicable, pilots are strongly advised to avoid the airspace above, or in proximity, to such sites as power plants . . . industrial complexes, military facilities and other similar facilities." (Ex. 28, Attachment 3.)

In support of its assertion that the amended project would comply with Hayward Municipal Code Section 10-6.35,[22] the Applicant offers a June 27, 2007 letter from City Manager Jesus Armas indicating that the City currently interprets the Code Section by use of a map contained in the 2002 Airport Master Plan. In that map, which is reproduced above as **FIGURE 4 - TRAFFIC AND TRANSPORTATION** with the addition of an outline of the project site, the relevant zones are the Traffic Pattern Zone and the zones contained within in it. The project site is approximately one-half mile[23] outside of the Traffic Pattern Zone. (Ex. 28, Attachment 5.)

Ms. Strattan and Mr. Adams testified that Staff first became aware of and concerned about the effects of thermal plumes on aviation during and following the review of the Application for Certification for the Blythe Energy Power Plant Project (99-AFC-8). That project was permitted in 2001 and began commercial operation in 2003. It is located on the extended centerline of a runway of the Blythe airport, near the City of Blythe in eastern Riverside County. Several pilots reported encountering turbulence as they flew over the power plant while on landing approach. At least one of those pilots characterized the turbulence as severe turbulence. (Ex. 100, p. 4.10-9; RT 181, 189.)

Staff believes the FAA Study is flawed for failing to consider the reports of the Blythe pilots relayed to FAA staff by Mr. Adams and for relying on a database of

[22] "Sec. 10-6.35 USE RESTRICTIONS. Notwithstanding any other provisions of this Article, no use may be made of land within any airport approach zone, airport turning zone or airport transition zone in such a manner as to create harmful electrical interference with radio communications between the airport and aircraft, make it difficult for flyers to distinguish between airport lights and other lights, result in harmful glare in the eyes of the flyers using the airport, impair visibility in the vicinity of the airport or otherwise endanger the landing, take off or maneuvering of aircraft."

[23] Mr. Armas' letter describes the distance as 700 feet but, according to the map's scale, it is greater than 2000 feet from the Traffic Pattern Zone to the closest project boundary. The Applicant indicates that the cooling tower is more than 2,900 feet from the Traffic Pattern Zone boundary and the HRSG stacks are more than 3,000 feet from the boundary. (Ex. 28, p. 9 [A24].)

commercial, rather than general aviation, pilot reports. (RT, 189.)[24] It emphasizes statements in the study to the effect that vertical plumes "could" result in aircraft accidents and fatalities and the recommendations that attention be paid to plumes in the review of project notices submitted to the FAA. (Ex. 100, p. 4.5-17.) Staff also faults the FAA for considering only the height of physical structures, not the thermal plumes they generate in its review of Form 7460 filings. (RT, p. 195.)

If the amendment is approved, Staff recommends that a Condition of Certification require notice to pilots that they should not fly over the power plant. See Condition **TRANS-10**. Staff believes, however, that such a restriction will create its own impacts by reducing the navigable airspace around the Hayward airport and violate Hayward Municipal Code Section 10-6.35's prohibition against uses that would endanger aircraft maneuvering. The restriction would increase the workload of pilots and air traffic controllers who would no longer have the option of flying in the removed area. (Ex. 100, pp. 4.5-16 – 4.5-18; RT, 171 – 173.) Helicopter traffic leaving the airport is directed in a cone shaped pattern generally headed toward the RCEC site. The cone ends just before reaching the project site. (RT, 166.)

Applicant's witness Mr. Graves testified that he reviewed the published approach paths for the Hayward and Oakland airports and found no flight paths that would be affected by restricting the airspace above the RCEC. Hayward traffic control tower and FAA officials told him that the southwest area where the RCEC would be located is designated as a low traffic area. (RT, 157-158.)

Ms. Ford, President of the San Carlos Airport Pilots Association, Vice President of the California Pilots Association for Region 3, and an airport

[24] Mr. Graves disputes this assertion, pointing out that the FAA Study itself indicates that it is concerned with general aviation aircraft. See, for example, Table 1 of the Study, which tabulates flight hours and accidents for "U.S. General Aviation. (Ex. 20, Atachment 5, p. 9.)

consultant, testified that FAA grant assurances applicable to the City of Hayward prevented it from allowing hazards to aircraft in the vicinity of the airport. (RT, 203 – 204; Ex. 208.) Ms. Ford was of the opinion that further restrictions on the navigable airspace would adversely affect pilots using the Hayward airport. She characterized the airspace in the Bay Area as "one of the most complicated in the world." (RT, 204.)

The Evidentiary Record was left open following the hearing for the submission of additional agency comments, including that of the Alameda County Airport Land Use Commission (ALUC). On August 15, 2007, the ALUC adopted a resolution recommending that the project find an alternate site or, if approved at the proposed site, that a Condition like Staff's proposed **TRANS-10** be adopted. (Ex. 108.)

Commission Discussion

We recognize Staff's diligent pursuit of this aviation safety issue. It appears to be based, as was the FAA Study,[25] on a concern about the *potential* for harm. The evidence does not show that potential to be a significant risk, however. The FAA Study, finds that risk to be "extremely remote"—one in a billion[26]—at best, and well within the FAA's acceptable range of risk.[27] Pilots are trained to properly respond to expected and unexpected turbulence and to avoid potential

[25] The statement that plumes "could" negatively affect aircraft is found in the initial presumption portion of the study characterized as "brainstorming" by the Abstract. It is not borne out by the remainder of the report. The study's conclusions did not support that hypothesis.

[26] Ex. 20, DR55-1, pp. 11 - 14.

[27] We do not find Staff's criticisms of the study persuasive. The Study was based on reported accidents and incidents, of which none relating to power plants were found in its databases. Had it found one incident, the incident rate would be 1.2×10^{-9} per flight hour. Two incidents would be 2.4×10^{-9}. (Ex. 20, Attachment 5, p. 11.) Even if ten incidents had been identified, the rate would be 1.2×10^{-8}, which is still less than the FAA's target level of safety of 1×10^{-7} per flight hour.

hazards.[28] We agree with the FAA, Staff, the Applicant, and the Alameda County ALUC that an advisory warning pilots not to overfly the power plant at low altitudes provides an additional measure of safety. With or without the advisory, though, the impact is less than significant.

While the overflight restriction will have the effect of removing a portion of the navigable airspace around the Hayward Executive Airport, it does not appear to be a significant reduction. The space is one-half mile outside of the airport's defined traffic pattern and is very lightly (.4%) traversed. The radio towers 1000 feet to the south already call for caution. Sufficient unencumbered airspace will remain for the operation of the airport and its users. While Staff believes that the FAA has agreed with its position that the project should not be approved as proposed due to potential aviation hazards, all we find in the FAA's letter is agreement that pilots should be advised to avoid overflying the plumes at low altitudes. The FAA does not complain about the loss of navigable airspace; as the agency responsible for the designation of air routes and air traffic control, its lack of concern in this regard is telling.

We respectfully disagree with the recommendation of the ALUC that an alternative site be chosen for the power plant. Its resolution states that the RCEC airspace restriction would "alter the flight pattern[29]" but cites no evidence to support that conclusion.

We accept the City's interpretation of its own ordinance that the project site is outside of the zones subject to Municipal Code Section 10-6.35.

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[28] In addition to Mr. Graves' testimony to this effect, the FAA Study speaks of "rules and regulations restricting the altitude for overflight of power plant facilities coupled with pilot training, alerting, and the common sense aviator aptitude" as factors in the scarcity of reported incidents relating to power plants. (Ex. 20, Attachment 5, p. 15.)

[29] August 16, 2007 ALUC resolution, p. 2, fourth "Whereas" clause.

If the proposed Eastshore Energy Center is approved, it is possible that the navigable airspace above that facility would be similarly restricted. That project appears to be located just outside the Traffic Pattern Zone, approximately one-half mile closer than the RCEC. On the record before us, we can only note the possibility of cumulative effects from restricting the airspace above both projects. We also note that the Eastshore project is undergoing Energy Commission review; during that review the Commission can and should consider whether there are any significant direct or cumulative effects of any airspace restrictions over that project and impose proper mitigation or, if mitigation is not feasible, deny the project or override unmitigated effects. We do not intend this Decision to determine in any way the conclusions or outcome of the Commission's review of the Eastshore Energy Center, which must be judged on its merits and the evidence presented in that proceeding.

To answer the questions we pose above, 1) the proposed location presents no aviation hazard that rises to the level of a significant environmental effect; 2) though no significant effect requiring mitigation is presented, an additional measure of pilot safety will be afforded by advising pilots not to fly over the facility as Staff, the Applicant, the FAA, and the Alameda County ALUC recommend;[30] and 3) the removal of the navigable airspace above the power plant will not cause a significant environmental effect as it is not within any established traffic pattern and sufficient navigable airspace remains after its removal.

This decision is, of necessity, specific to this proposed project location; each power plant must be evaluated in the context of its local setting and aviation environment.

[30] We have incorporated additional pilot awareness/notification methods recommended by the ALUC and FAA as the last three bullets of **TRANS-10**.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.
3. The Traffic and Transportation aspects of the amended project do not create significant direct or cumulative environmental effects. To the extent that a possible cumulative effect on aircraft safety exists by virtue of the restriction of navigable airspace for the proposed Eastshore Energy Center project in addition to that set aside for this project, there is insufficient information to fully evaluate the impact at this time but the Energy Commission can and should fully consider that possible cumulative impact in its consideration of the Eastshore project.

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 Deleted.

TRANS-3 Deleted.

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 Deleted.

TRANS-6 The project owner shall resurface Enterprise Avenue and Clawiter Road, 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.

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 and Clawiter Road in accordance with City of Hayward standards.

TRANS-7 Deleted.

TRANS-8 Deleted.

TRANS-9 The project owner or its contractor shall comply with the City of Hayward Planning Department limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from the City of Hayward Public Works Department.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during that month's reporting period to the Compliance Project Manager (CPM). In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-10 The project owner shall ensure that the following mitigation measures are implemented to discourage pilots from flying over or in the proximity to the RCEC. These would include:

1. Request that a Notice to Airman (NOTAM), Category D, be issued advising pilots of the location of the RCEC and maintained in active status until all navigation charts and the Airport Facilities Directory (AFD) have been updated;

2. Request that the Hayward Executive Airport Air Traffic Control Tower (ATCT) coordinate with the Northern California Terminal Radar Approach Control to ensure that local missed approach instructions preclude the vectoring of aircraft over the RCEC;

3. Request that the FAA insert a power plant depiction symbol at the RCEC site location on the San Francisco VFR Terminal Area Chart (scale: 1:250,000);

4. Request that the Hayward ATCT add a new remark to the Automatic Terminal Information Service (ATIS) advising pilots of the location of the RCEC and to avoid overflight below 1,000 feet;

5. Deleted.

6. Request that the Hayward Executive Airport submit aerodrome remarks describing the general location of the RCEC plant and advising against direct overflight of the RCEC plant to:

    - the FAA National Aeronautical Charting Office (Airport/Facility Directory, Southwest United States);
    - Jeppesen Sanderson Inc. (JeppGuide Airport Directory, Western Region); and
    - Airguide Publications (Flight Guide, Western States);

7. Modify the Hayward Executive Airport "fly friendly" pilot guides at the project owner's expense to include: a graphical/pictorial depiction of the RCEC site, bearing and distance to the site from airport center and the OAKLAND VORTAC, latitude and longitude of the RCEC center point and the recommendation to avoid overflight of the site below 1,000 feet to avoid potentially unstable flight conditions;

8. Install obstruction lighting and marking on each RCEC exhaust stack and cooling tower. Reference FAA Advisory Circular 70/7460-I for guidance. Install lighting at each corner of the facility fence line that would be visible to an aircraft in flight, to be operated 24 hours a day, 7 days a week; and

9. Provide the Hayward Executive Airport and the Metropolitan Oakland International Airport Air Traffic Control Towers written notice at least 10 days in advance of the first test or commissioning procedure that would produce a thermal plume, provide verbal notification 2 hours in advance of any subsequent test or commissioning procedure, and 10 days written notice prior to the start of commercial operations.

Verification: At least sixty days prior to the start of construction, the project owner shall submit to the CPM for approval final design plans for the power plant that depict the required air traffic hazard lighting. The lighting shall be inspected

and declared operational by the CPM (or designate inspector) prior to the start of operations.

At least six months prior to the first test or commissioning procedure, the project owner shall demonstrate to the CPM that it has coordinated with the Hayward Executive Airport manager and changes to the San Francisco VFR Terminal Area Chart have been submitted.

At least sixty days prior to the first test or commissioning procedure, the project owner shall demonstrate to the CPM that it has coordinated with the Hayward Executive Airport manager and changes to the AFD have been submitted.

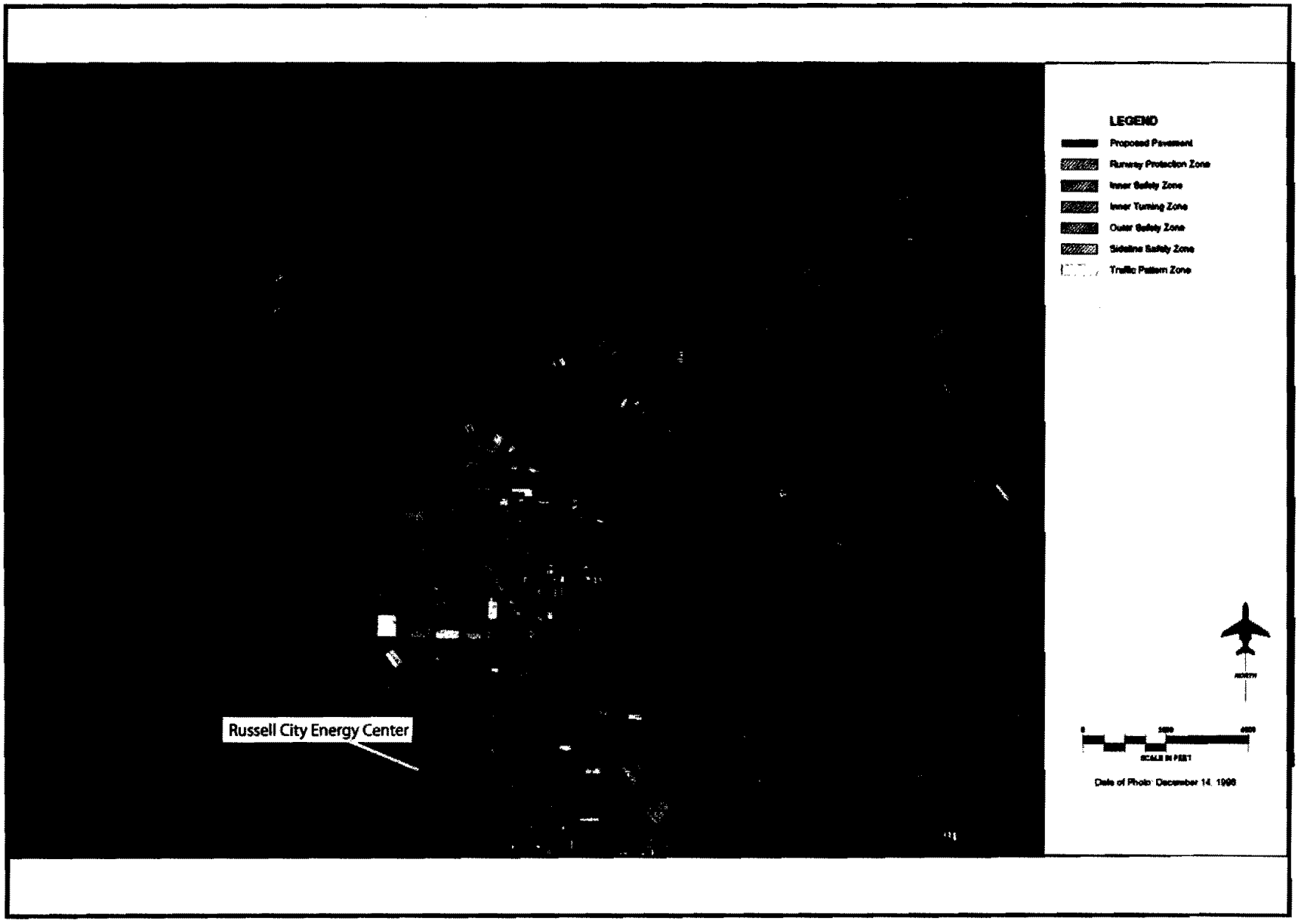
At least sixty days prior to the first test or commissioning procedure, the project owner shall provide verification to the CPM from the Hayward Executive Airport ATCT that any necessary modifications to local missed approach procedures have been coordinated with Northern California Terminal Radar Approach Control.

At least thirty days prior to the first test or commissioning procedure, the project owner shall provide verification to the CPM from the Hayward Executive Airport manager that he has an adequate supply, as determined by him, of the "fly friendly" brochure used for pilot education.

At least thirty days prior to the first test or commissioning procedure, the project owner shall provide verification to the CPM from the Hayward Executive Airport and Oakland International ATCT that the proposed language for the ATIS accurately describes the location of the RCEC and recommendation to avoid overflight below 1,000 feet.

The project owner shall provide simultaneously to the CPM copies of all advisories sent to the Hayward and Oakland Air Traffic Control Towers.

FIGURE 4 - TRAFFIC AND TRANSPORTATION
SOURCE: Exhibit 28. Attachment 5



E. VISUAL RESOURCES

The written testimony of the Applicant's witness, Thomas Priestly, provided existing and simulated views of the constructed project from five Key Observation Points (KOPs):

KOP 1—Office/Industrial Facility in Whitesell Business Park
KOP 2—Hayward Shoreline Interpretive Center
KOP 3—Hayward Shoreline Footbridge at Cogswell Marsh
KOP 4—State Route 92 at Toll Plaza
KOP 5—Cabot Boulevard at Depot Road

Mr. Priestly concludes that the visual impacts of constructing the project at each KOP would either be less than significant (KOPs 1, 4, and 5) or, though potentially significant, mitigated to less than significant levels with the installation of screening vegetation (KOPs 2 and 3) and "a color scheme involving a color palette of varying tones of neutral colors that can be applied to the major project structures in a way that will break up the facility's apparent mass and better integrate it into the view." (Ex. 1, pp. 3-168 – 3-170.)

Staff's witnesses, Mark R. Hamblin and Eric Knight analyzed KOPs corresponding to the Applicant's KOPs 1 through 4. They draw conclusions similar to those of Mr. Priestly except that they find mitigation is also necessary to reduce the visual impacts at KOP 4 to less than significant levels. (Ex. 100, pp. 4.12-7 – 4.12-10.)

Staff and the Applicant disagree about the location of the vegetative screening. Mr. Priestly recommends that it be planted in the marsh and between the marsh and the power plant structures. (Ex. 1, pp. 3-169 – 3-170.) He recommends deletion of Condition **VIS-10**, which, among other things, requires the installation of "trees along the west side of the warehouse and industrial park complexes that line the eastern edge of the shoreline wetlands." (Ex. 1, pp. 3-173 – 3-174.)

Staff asserts that the requirement remains necessary both to mitigate the impacts at KOPs 2 and 3 and to mitigate impacts at KOP 4.[31] Placing trees in the marsh could cause biological resources impacts by providing perching sites for raptors. (Ex. 100, pp. 4.12-8 – 4.12-10.) In the absence of any evidence that the screening could be successfully provided in the marsh and mindful of the potential biological resources issues, we find that the requirement should remain in place.

The Applicant requests that Condition **VIS-7**, requiring visual treatment of the Advanced Water Treatment facility, administrative offices, control room, warehouse, and water treatment laboratory structures consistent with City architectural guidelines be deleted. It asserts that such treatment is no longer necessary because the relocation of the project and the provision of a sound wall on the southern boundary sufficiently buffers those structures from view by motorists on public streets. (Ex. 1, p. 3-172.) Staff agrees. (Ex. 100, pp. 4.12-7 – 4.12-8.)

At its original location, the project would block views of Mt. Diablo from KOP 2, the Hayward Regional Shoreline Interpretive Center. To mitigate the impact, Condition **VIS-9** required the project owner to install benches, an information kiosk, information panels, and free-of-charge viewscopes at two nearby locations on a Shoreline trail where views toward Mt. Diablo would not be affected by the project. At its new location, the amended project will no longer create the visual impact. The Applicant remains willing to provide the amenities, however, and proposes clarifying amendments to Condition **VIS-9**. Staff agrees with the proposal. (Ex. 100, p. 4.12-8.)

The Applicant also requests the removal of that portion of Condition **VIS-8** which requires an economizer bypass and automated control system to reduce visual

[31] Staff does agree with the Applicant's proposal to delete the other planting requirements from

plumes from the HRSG, arguing that the plant's plumes will be less visible to the public due to the project's relocation, that plumes are projected to occur infrequently and that the required equipment will be an inefficient use of natural gas resources. (Ex. 1, p. 3-172.) Staff, in recognition of the predicted low plume frequency (3.4% of daylight clear hours) and that the cooling towers will be plume-abated, supports the Applicant's request. (Ex. 100, p. 4.12-11.)

A key feature of the amendment is the removal of what is generally called the "Wave." It consisted of tubular space frames around the HRSG units, HRSG stacks, and the cooling towers, spanned by stainless steel mesh and contoured to give the impression of a wave in the bay. It was intended to simplify the complexity of the plant's equipment and serve as a distinctive landmark at the State Route 92 gateway to Hayward. (2002 Decision, pp. 221-222.) The Staff Assessment indicates that the treatment was included at the behest of the City of Hayward in order to achieve consistency with City General Plan provision encouraging enhancement of entrances to the City with "distinctive planting, signing or architecture." The Staff Assessment also reports a subsequent change of position on the City's part. "In an agenda report to the City Council in October 2005, City staff supported Calpine's request to eliminate the "Wave" structure. The City did not make a general plan consistency finding in the agenda report for this action. The City Council took no formal action on the "Wave" during the meeting." (Ex. 100, p. 4.12-14.) A July 18, 2007 letter from Acting City Manager Fran David to Eric Knight confirms the City's opinion that the Wave is no longer necessary. (Ex. 35.)

Another feature of the original project that is eliminated by the amendment is the relocation of the KFAX radio towers. If moved as originally proposed, they would be located nearer to the Hayward Regional Shoreline Park parking area and trailhead. During the original proceeding Staff argued that the towers would

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Condition **VIS-10**.

cause significant visual impacts that could not be mitigated. (2002 Decision, pp. 225-233.) Although the 2002 Decision concluded that the impact would not be significant, avoiding the relocation as is now proposed eliminates the impact altogether.

Public Comment

Audrey LePell commented that she did not find the power plant visually acceptable with or without the "Wave." Joanne Gross felt the simulated photographs were misleading. She frequently used the shoreline area and did not want to see the power plant in her views. Wafaa Avorashed, representing the Healthy San Leandro Environmental Collaborative, commented that the power plant would affect the public's ability to enjoy the shoreline.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The project as amended will continue to comply with all applicable LORS.
2. The revised Conditions of Certification set forth below are appropriate and 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 LORS.
3. The Visual Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

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 along the Hayward Regional Shoreline. Erect a 12-foot-tall fence with opaque, solid slats along the west property boundary of the 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 would be replaced on a 1-to-1 in-kind basis. Such replacement planting would 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 from views from the Hayward Regional Shoreline 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 would 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 onsite landscape plan to screen the power plant from view to the greatest extent possible. Suitable irrigation shall be installed to ensure survival of the plantings. Landscaping shall be installed consistent with the City of Hayward zoning ordinance and with the U.S. Fish and Wildlife Service's recommendations, if applicable, that plants not provide opportunities for perching by birds of prey.

Protocol: The project owner shall submit a 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) An installation schedule. The project owner shall not implement the landscape plan until the project owner receives approval of the plan from the CPM. The planting must be completed by the start of commercial operation, and the planting must occur during the optimal planting season.

3) Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project; and

4) 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 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 would 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 would 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 would not create glare;

6) Documentation that non-specular conductors, and nonreflective and nonrefractive insulators would 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 onsite 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 (including sound 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 would 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 would 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: Deleted.

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 would be used to ensure that plumes are abated to the maximum extent possible for 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 would be used to ensure maximum plume abatement for the wet/dry cooling tower plume abatement systems.

VIS-9 Prior to commercial operation, the project owner shall install new trailside amenities in the Hayward Regional Shoreline that may include, 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 would 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 after 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 would 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. 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 and the U.S. Fish and Wildlife Service, if applicable, 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) An installation schedule. The project owner shall not implement the landscape plan until the project owner receives approval of the plan from the CPM. The planting must be completed by the start of commercial operation, and the planting must occur during the optimal planting season.

3) Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project; and

4) 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 offsite 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 would 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, of the Amendment No. 1 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 would 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.

RUSSELL CITY ENERGY CENTER POWER PLANT PROJECT

APPENDICES

Appendix A: *Proof of Service List*

Appendix B: *Exhibit List*

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

IN THE MATTER OF:

MODIFICATION OF THE APPLICATION FOR CERTIFICATION FOR THE RUSSELL CITY ENERGY CENTER

DOCKET NO. 01-AFC-7C

EXHIBIT LIST

Applicant Exhibits

Exhibit 1	Amendment Petition No.1, dated November 2006. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 2	Engineering, Transmission System Engineering, Transmission Safety and Nuisance, Compliance Testimony of Mike Argentine, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 3	Air Quality Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 4	Biological Resources Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 5	Cultural Resources Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 6	Geology and Paleontology Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.

Exhibit 7	Hazardous Materials Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 8	Land Use Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 9	Noise Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 10	Public Health Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 11	Socioeconomics Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 12	Soil and Water Resources Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 13	Traffic and Transportation Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 14	Visual Resources Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 15	Waste Management Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 16	Worker Safety and Fire Protection Testimony, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.

Exhibit 17	Applicant's Responses to CEC Staff data Requests 1-52, dated January 17, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 18	Applicant's Response to CEC Staff Data Request #28, Final Geotechnical Report , dated February 12, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 19	Applicant's Response to CEC Staff Data Request #53 and #54, dated March 2, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 20	Applicant's Responses to CEC Staff Data Requests 16 and 55 through 72, dated March 23, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 21	March 27, 2007 LFR letter to Jeri Scott responding to the Department of Toxic Substances Control comments. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 22	Responses to CEC Staff Data Requests 73 through 96 and Workshop Queries 1 through 3, dated April 13, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 23	Applicant's Comments on Preliminary Staff Assessment, Part 1, dated April 13, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 24	Draft report by Katestone Environmental, Toowong, Australia, titled "Plume Vertical Velocity Assessment of a Proposed Gas-Fired Power Station at Russell City Energy Center" dated June 8, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.

Exhibit 25	Revised Report by Katestone Environmental, Toowong, Australia, titled "Plume Vertical Velocity Assessment of a Proposed Gas-Fired Power Station at Russell City Energy Center" dated June 20, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 26	Final Revised Report by Katestone Environmental, Toowong, Australia, titled "Plume Vertical Velocity Assessment of a Proposed Gas-Fired Power Station at Russell City Energy Center" dated July 10, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 27	Plume Vertical Velocity Assessment of a Proposed Gas-Fired Power Station at Russell City Energy Center ATMOSPHERIC DYNAMICS Addendum, dated July 10, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 28	Testimony of RCEC, LLC, Regarding Thermal Plumes and Aviation, dated July 16, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 29	Plume Vertical Velocity Assessment of a Proposed Gas-Fired Power Station at Russell City Energy Center ATMOSPHERIC DYNAMICS, Addendum 2, dated July 13, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 30	Declarations of Project Owner's Witnesses. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 31	Supplemental testimony regarding Thermal Plumes and Aviation – Cumulative Impacts in response to the CEC Staff's Late Filed Addendum to the Staff Assessment re: Cumulative Impacts and Mitigation dated July 19, 2007. Sponsored by Applicant and received into evidence on July 19, 2007.
Exhibit 32	Letter dated May 30, 2007 from Barbara McBride, Calpine Corporation, to Brian Bateman, Bay Area Air Quality

Management District regarding emission reduction credits swap. Sponsored by Applicant and received into evidence on September 5, 2007.

Exhibit 33 Figure 2.1-2—General Arrangement—with Aladdin parcel boundaries highlighted. Sponsored by Applicant and received into evidence on September 5, 2007.

Exhibit 34 Undated Option to Lease Agreement between Aladdin Depot Partnership and Anacapa Land Company, LLC. Sponsored by Applicant and received into evidence on September 5, 2007.

Exhibit 35 Letter dated July 18, 2007 from Acting Hayward City Manager Fran David to Eric Knight explaining the City's opinion that the "Wave" is no longer necessary. Sponsored by Applicant and received into evidence on September 5, 2007.

Staff Exhibits

Exhibit 100 Staff Assessment, Part 1 and Part 2 combined dated June 29, 2007. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 101 Staff Assessment Errata, dated July 18, 2007. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 101A Declaration of Paul Richens dated July 27, 2007. Sponsored by Staff and received into evidence on September 5, 2007.

Exhibit 102 Bay Area Air Quality Management District Final Determination of Compliance [FDOC], dated June 19, 2007. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 103 Three letters to Jim Adams, CEC Environmental Planner III, Letter #1 from Mr. Joseph Rodriguez of the Federal Aviation Administration, dated July 18, 2007. Letter #2 from Mr. Bill Dunn of the Aircraft Owners and Pilots Association, dated July 17, 2007. Letter #3 from California Dept. of

Transportation Division of Aeronautics. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 104 Additional staff errata on amended and proposed conditions of certification re: Hazardous Materials Management by Dr. Alvin Greenberg, dated July 19, 2007. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 105 Report of conversation between Kevin W. Bell and Gregg Wheatland, Applicant's counsel and CEC Staff and Agreement Regarding WASTE-8, WASTE-9 and WASTE-10, dated July 25, 2007. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 106 [Reserved for possible revised Transmission System Engineering conditions; not used]

Exhibit 107 Alameda County Airport Land Use Policy Plan, dated July 16, 1986. Sponsored by Staff and received into evidence on July 19, 2007.

Exhibit 108 Alameda County Airport Land Use Commission Resolution 01-2007 dated August 16, 2007. Sponsored by Staff and received into evidence on September 5, 2007.

Exhibit 109 Letter from the Federal Aviation Administration, dated September 18, 2007, regarding written response re Hayward Power Plant Issues. Sponsored by Staff and received into evidence on September 26, 2007.

Exhibit 110 Letter from Mr. William Withycombe, the Federal Aviation Administration, dated September 25, 2007. Sponsored by Staff and received into evidence on September 26, 2007.

Intervenor Exhibits

Exhibit 200 2006 Air Monitoring Network Plan-Bay Area Air Quality Management District, dated July 1, 2007. Sponsored by Intervenor Haavik and received into evidence on July 19, 2007.

Exhibit 201 Staff Assessment Part 1-2 Air Quality page 4.1-12. Not received into evidence; already included as part of Exhibit 100.

Exhibit 202 Staff Assessment Part 1-2 Air Quality page 4.1-13. Not received into evidence; already included as part of Exhibit 100.

Exhibit 203 Staff Assessment Part 1-2 Public Health pages 4.7-6 & 7. Not received into evidence; already included as part of Exhibit 100.

Exhibit 204 Staff Assessment Part 1-2 Hazardous Materials Management page 4.4-6. Not received into evidence; already included as part of Exhibit 100.

Exhibit 205 Staff Assessment Part 1-2 Visual Resources page 4.12-37. Not received into evidence; already included as part of Exhibit 100.

Exhibit 206 Staff Assessment Part 1-2 Land Use page 4.5-1. Not received into evidence; already included as part of Exhibit 100.

Exhibit 207 Intervener's Prehearing Conference Testimony of Carol Ford and David Stark, dated July 17, 2007. Sponsored by Intervenor Haavik and received into evidence on July 19, 2007.

Exhibit 208 Assurances Airport Sponsors, dated March 2005. Sponsored by Intervenor Haavik and received into evidence on July 19, 2007.

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

Amendment to the APPLICATION FOR CERTIFICATION OF THE RUSSELL ENERGY CENTER POWER PLANT PROJECT	**Docket No. 01-AFC-7C**

PROOF OF SERVICE

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 01-AFC-7C
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Michael A. Argentine, PE
Director, Project Development
Calpine Corporation
104 Woodmere Road
Folsom, CA 95630
margentine@calpine.com

Marianna Isaacs,
Administrative Manager
Calpine Corporation
3875 Hopyard Road, Suite. 345
Pleasanton, CA 94588
misaacs@calpine.com

COUNSEL FOR APPLICANT

Gregg L. Wheatland, Esq.
Ellison, Schneider & Harris L.L.P.
2015 H Street
Sacramento, CA 95814-3109
glw@eslawfirm.com

CONSULTANT TO APPLICANT

Doug Davy, Senior Project Manager
CH2M HILL
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833
ddavy@ch2m.com

INTERESTED AGENCIES

Larry Tong
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605-0381
Ltong@ebparks.org

Weyman Lee, PE
Bay Area AQMD
939 Ellis Street
San Francisco, CA 94109
weyman@baaqmd.gov

Mark Taylor, Field Supervisor
East Bay Regional Park District
3050 West Winton Avenue.
Hayward, CA 94545
hayward@ebparks.org

Alex Ameri, P.E.
Deputy Director of Public Works
777 B Street
Hayward, CA 94541-5007
Alex.Ameri@hayward-ca.gov

CA. Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630

Bob Nishimura
Bay Area AQMD.
939 Ellis Street
San Francisco, CA 94109
bnishimura@baaqmd.gov

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
esaltmarsh@eob.ca.gov

INTERESTED PARTICIPANTS

CURE c/o Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
mdjoseph@adamsbroadwell.com

Paul N. Haavik
25087 Eden Avenue
Hayward, CA 94545
lindampaulh@msn.com

Parker Ventures, LLC
c/o Reneon & Roberts
Ten Almaden Boulevard, Suite 550
San Jose , CA 95113

ENERGY COMMISSION

JEFFREY D. BYRON
Associate Member
jbyron@energy.state.ca.us

JOHN L. GEESMAN
Presiding Member
jgeesman@energy.state.ca.us

Paul Kramer
Hearing Officer
pkramer@energy.state.ca.us

Lance Shaw
Project Manager
lshaw@energy.state.ca.us

Dick Ratliff
Staff Counsel
dratliff@energy.state.ca.us

Public Adviser's Office
pao@energy.state.ca.us

DECLARATION OF SERVICE

I, _____, declare that on _____, I deposited copies of the attached _____ in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

_____

Signature