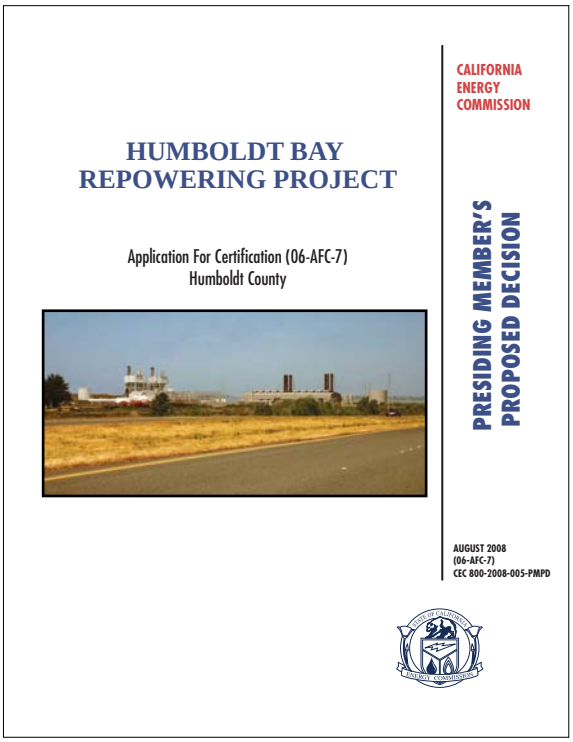
CALIFORNIA
ENERGY
COMMISSION

HUMBOLDT BAY REPOWERING PROJECT

Application For Certification (06-AFC-7)
Humboldt County

PRESIDING MEMBER'S PROPOSED DECISION

AUGUST 2008
(06-AFC-7)
CEC 800-2008-005-PMPD



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BEFORE THE STATE OF CALIFORNIA ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

HUMBOLDT BAY REPOWER PROJECT
(CEC Docket No. 06-AFC-7)

The Committee hereby submits the Presiding Member's Proposed Decision (PMPD) for the ***HUMBOLDT BAY REPOWER PROJECT***, to be located on 5.4 acres within a 143-acre parcel currently occupied by the existing PG&E Humboldt Bay Power Plant in Eureka, California, Humboldt County. We have prepared this PMPD pursuant to the requirements set forth in the Energy Commission's regulations. [Cal. Code Regs., tit. 20, § 1769.]

The Committee recommends that the Application for Certification be approved, subject to the Conditions of Certification set forth herein, and that the Energy Commission grant the Project Owner a license to construct and operate the Project.

Dated August 18, 2008, at Sacramento, California.

Original Signed By:

JEFFREY D. BYRON
Commissioner and Presiding Member
Humboldt Bay Repower Project AFC Committee

Original Signed By:

KAREN DOUGLAS
Commissioner and Associate Member
Humboldt Bay Repower Project AFC Committee

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INTRODUCTION

A. SUMMARY OF THE DECISION

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

On September 29, 2006, Pacific Gas and Electric Company ("Applicant or PG&E") filed an Application for Certification (AFC) with the California Energy Commission to construct and operate the HBRP, which has a combined nominal generating capacity of 163 megawatts (MW). This project will be located on 5.4 acres within a 143-acre parcel currently occupied by the existing PG&E Humboldt Bay Power Plant (HBPP) located in Eureka, California, in Humboldt County. The Energy Commission has exclusive jurisdiction to license this project and is considering the proposal under a review process established by Public Resources Code section 25540.6. The review process period began November 8, 2006.

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 6/17/08 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in Appendix B of this Decision.

The project will include ten (10) natural gas-fired Wärtsilä 18V50DF 16.3 megawatt (MW) reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW. The HBRP will also be capable of running on California Air Resources Board (CARB)-certified diesel fuel in order to ensure local area reliability during instances of natural gas curtailment in the region. This is required by the California Public Utilities Commission (CPUC) and PG&E's CPUC Gas Tariff Rule 14. The HBRP project is a replacement of the existing 105 MW Units 1 and 2 and the two 15 MW Mobile Emergency Power Plants (MEPP) at PG&E's HBPP.

The HBRP will use approximately 2,400 gallons of water per day (2.7 acre-feet/year) on average for cooling or other industrial purposes. This is a fraction of the water required for traditional combined-cycle turbine design. Raw water for industrial processes and site landscape irrigation will be supplied from PG&E's existing ground water well via a direct connection to an onsite 6-inch-diameter water pipeline. Domestic water required for non-process uses will be provided from a new 4- to 6-inch-diameter on-site pipeline.

The project would be connected from the generators to the existing switchyard via two 60 kilovolt (kV) tie lines and one 115-kV tie line. No new transmission lines will be required. Natural gas would be supplied to the HBRP via an onsite 10-inch-diameter, high-pressure, natural gas pipeline owned and operated by PG&E.

Construction of the HBRP power generation facility, including the natural gas pipeline, is expected to occur over an 18-month period. During the peak construction period, the project will provide a maximum of 236 construction jobs with an average of 101 workers present per month. Approximately 17 workers will be needed to maintain and operate the project. Applicant estimates capital costs associated with the project to be approximately $250 million.

Agencies, including the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Coastal Commission, State Water Resources Control Board/Regional Water Quality Control Board, California Department of Fish and Game, and the California Air Resources Board cooperated with the California Energy Commission staff in completing this review process. There were no formal Intervenors.

B. SITE CERTIFICATION PROCESS

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

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

Specifically, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally or on a formal level as intervenor parties who have the opportunity to present evidence and cross-examine witnesses. Public participation is encouraged at every stage of the process.

The process begins when an Applicant submits an AFC. Commission staff reviews the data submitted as part of the AFC and makes a recommendation to the Commission on whether the AFC contains adequate information to begin the certification process. After the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the formal licensing process. This process includes public conferences and evidentiary hearings, where the evidentiary record is developed and becomes the basis for the Presiding Member's Proposed Decision (PMPD). The PMPD determines a project's conformity with applicable laws, ordinances, regulations, and standards and provides recommendations to the full Commission.

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

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order to schedule formal evidentiary hearings. At the evidentiary hearings, all formal parties, including intervenors, may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public may offer oral or written comments at these

hearings. Evidence submitted at the hearings provides the basis for the Committee's analysis and recommendations to the full Commission.

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

Throughout the licensing process, members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal intervenors, function independently with equal legal status. An "ex parte" rule prohibits parties in the case, or other persons with an interest in the cae, from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications are made on the public record. The Office of the Public Adviser is available to assist the public in participating in all aspects of the certification proceeding.

C. PROCEDURAL HISTORY

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

On September 29, 2006, Pacific Gas and Electric Company (PG&E) submitted an Application for Certification (AFC) to construct and operate the Humboldt Bay

Repowering Project (HBRP) in the City of Eureka, Humboldt County. The HBRP will be a load following power plant consisting of ten (10) natural gas-fired Wärtsilä 18V50DF 16.3 megawatt (MW) reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW. On November 8, 2006, the Energy Commission deemed the AFC data adequate (sufficient data to proceed) and assigned a Committee of two Commissioners to conduct proceedings.

The formal parties included the Applicant, and the Energy Commission staff (Staff). There were no formal intervenors.

On November 17, 2006, the Committee issued a Notice of "Informational Hearing and Site Visit." The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the HBRP. The Notice of Hearing was also published in *The Eureka Times Standard*.

On Monday, December 18, 2006, the Committee conducted a Site Visit to tour the proposed HBRP site and then convened a public Informational Hearing in the City of Eureka at PG&E's Humboldt Bay Power Plant Assembly Building. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the HBRP, described the Commission's review process, and explained opportunities for public participation. On January 3, 2007, the Committee issued an initial Scheduling Order and on November 6, 2007, the Committee issued an Affirmation of Scheduling Order.

In the course of the review process, Staff conducted public workshops on February 1, 2007, March 12, 2007, December 14, 2007, January 16, 2008, and June 16, 2008, to discuss issues with the Applicant, governmental agencies, and interested members of the public.

On May 24, 2007, the Committee issued a Notice scheduling a public hearing on PG&E's *Petition for Bifurcation and Revised Scheduling Order,* for June 4, 2007, in Sacramento at the Energy Commission's headquarters.

Staff issued its Preliminary Staff Assessment (PSA) on November 29, 2007. Subsequently, on December 14, 2007, Staff conducted a public workshop in Eureka to discuss the topics of Air Quality, Biology, Cultural Resources, Land Use, and Public Health. Staff conducted a second workshop on January 16, 2008, to discuss outstanding issues that were identified in the PSA in the areas of Land Use, Air Quality, Cultural Resources, and Public Health. Staff issued its Final Staff Assessment (FSA) on May 15, 2008.

On May 2, 2008, the Committee issued a Notice of Prehearing Conference and Notice of Evidentiary Hearings. The Prehearing Conference was held at the Energy Commission headquarters in Sacramento, on May 28, 2008. The Evidentiary Hearing was conducted in the city of Eureka on June 17, 2008.

The Committee published the PMPD on August 18, 2008, and scheduled a Committee Conference in Sacramento at Commission Headquarters for September 16, 2008, to discuss the PMPD. The 30-day comment period on the PMPD will expire on September 17, 2008.

I. PROJECT DESCRIPTION AND PURPOSE

On September 29, 2006, PG&E filed an Application for Certification with the California Energy Commission to construct and operate the HBRP, which has a combined nominal generating capacity of 163 megawatts.

1. Project Site

The proposed HBRP site is located at 1000 King Salmon Avenue, approximately three miles south of the city of Eureka in an unincorporated area of Humboldt County. The project is within the sphere of influence of the city of Eureka and would be located on 5.4 acres within a 143-acre parcel currently occupied by the existing PG&E Humboldt Bay Power Plant (HBPP). The site is zoned Coastal-Dependent Industrial and is within the jurisdiction of the California Coastal Commission, as well as the city of Eureka and Humboldt County.

The HBRP site is located on Buhne Point, a small peninsula along Humboldt Bay, and currently contains industrial land, wetlands, Buhne Slough, and cooling water intake and discharge canals associated with the existing HBPP. The property is bounded on the north by Humboldt Bay, on the west by the King Salmon community, on the east by the Northwestern Pacific Railroad tracks, and on the south by King Salmon Avenue. East of the railroad property are Highway 101, some rural parcels, and commercial development. South of King Salmon Avenue are wetland areas and the Humboldt Hill residential development. Southwest of Humboldt Hill is the community of Fields Landing. West of the King Salmon community are Humboldt Bay, a sand spit known as South Spit, and beyond the spit, the Pacific Ocean. Within a one-mile radius of the project is the South Bay Elementary School and a senior home, the Sun Bridge Seaview Care Center. (Exs. 1, p. 2-5; 200, p. 3-1.)

A shoreline trail maintained by PG&E and the Humboldt Bay Harbor Recreation and Conservation District runs along the shoreline on the perimeter of the HBPP property to the northwest. This portion of the trail extends from the King Salmon community south to the wetlands along the bay.

Figure 1 shows the regional location of the HBRP, and **Figure 2** provides the local setting for the proposed project. **Figure 3** is an architectural rendering of the proposed project.

2. Power Plant

In order to construct the HBRP, it would be necessary to remove several structures associated with the existing HBPP, including the painting and sandblasting building, two storage sheds, 115-kV transmission tower, diesel fuel tanks, and related underground piping and infrastructure. (Ex. 1, p. 2-1.) The HBRP would consist of 10 dual-fuel Wärtsilä 18V50DF 16.3 MW reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW. The reciprocating engine is very similar to a conventional automobile engine, containing 18 cylinders in a V-formation.

During normal operation, the engines use natural gas as fuel, with a very small amount of diesel fuel injected through a micro-pilot system to ignite the natural gas in the cylinders. During times of natural gas disruption or curtailment, the engines use diesel fuel supplied through a separate, conventional injection system. The dual-fuel technology is capable of operating at up to 48 percent efficiency. (Ex. 1, p. 2-18.) Auxiliary equipment would include inlet air filters, oxidation filters, gas exhaust silencer stacks, air radiator cooling array, generator step-up and auxiliary transformers, and emergency diesel fuel storage tanks. The generator sets will be laid out in groups of five and installed within a single engine hall 283 feet long and 90 feet wide. The walls of the hall will be 33 feet high, with a roof peaking at 44.8 feet. (Ex. 1, p. 2-18.)

PROJECT DESCRIPTION – FIGURE 1

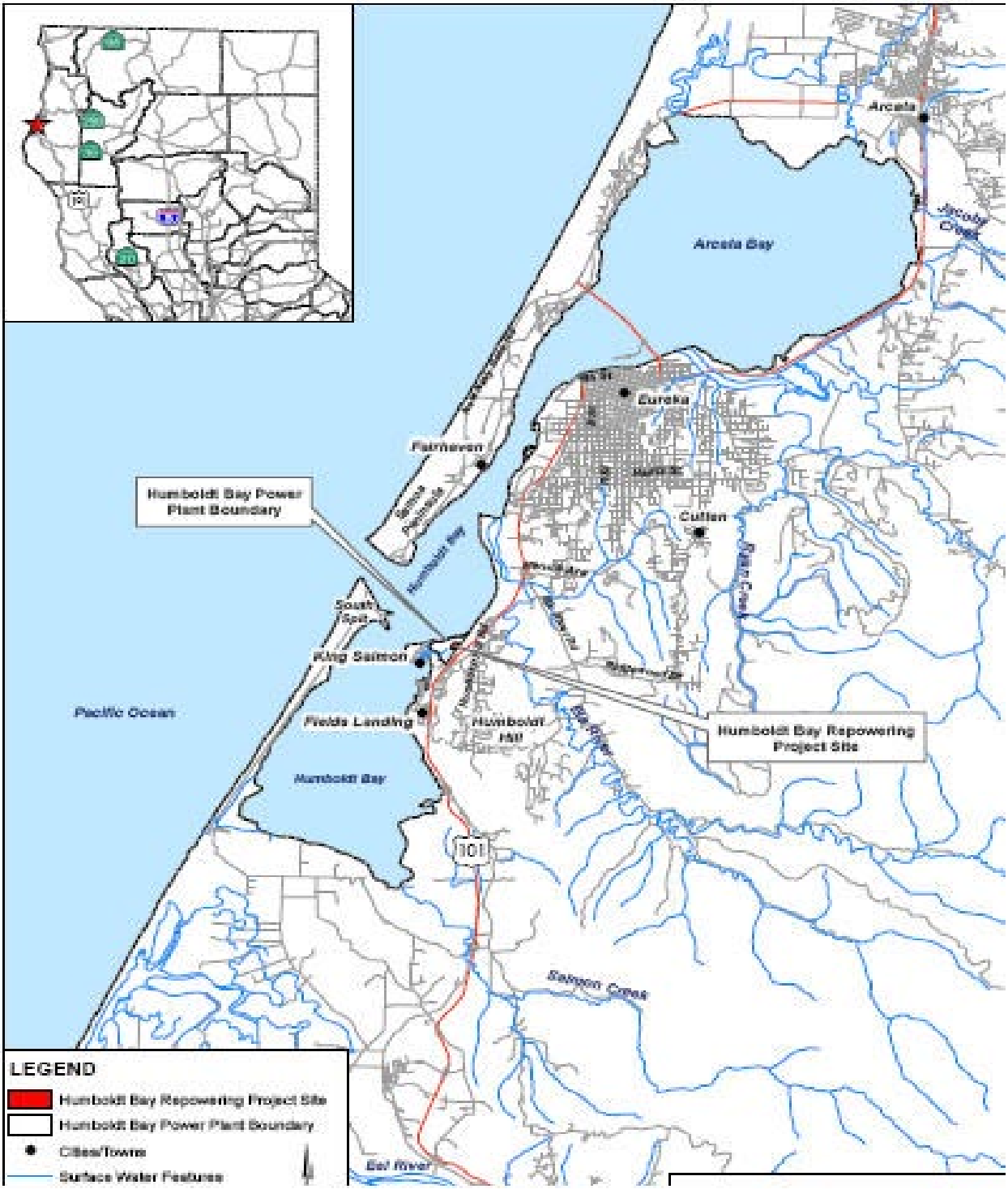

Exhibit 1

PROJECT DESCRIPTION – FIGURE 2

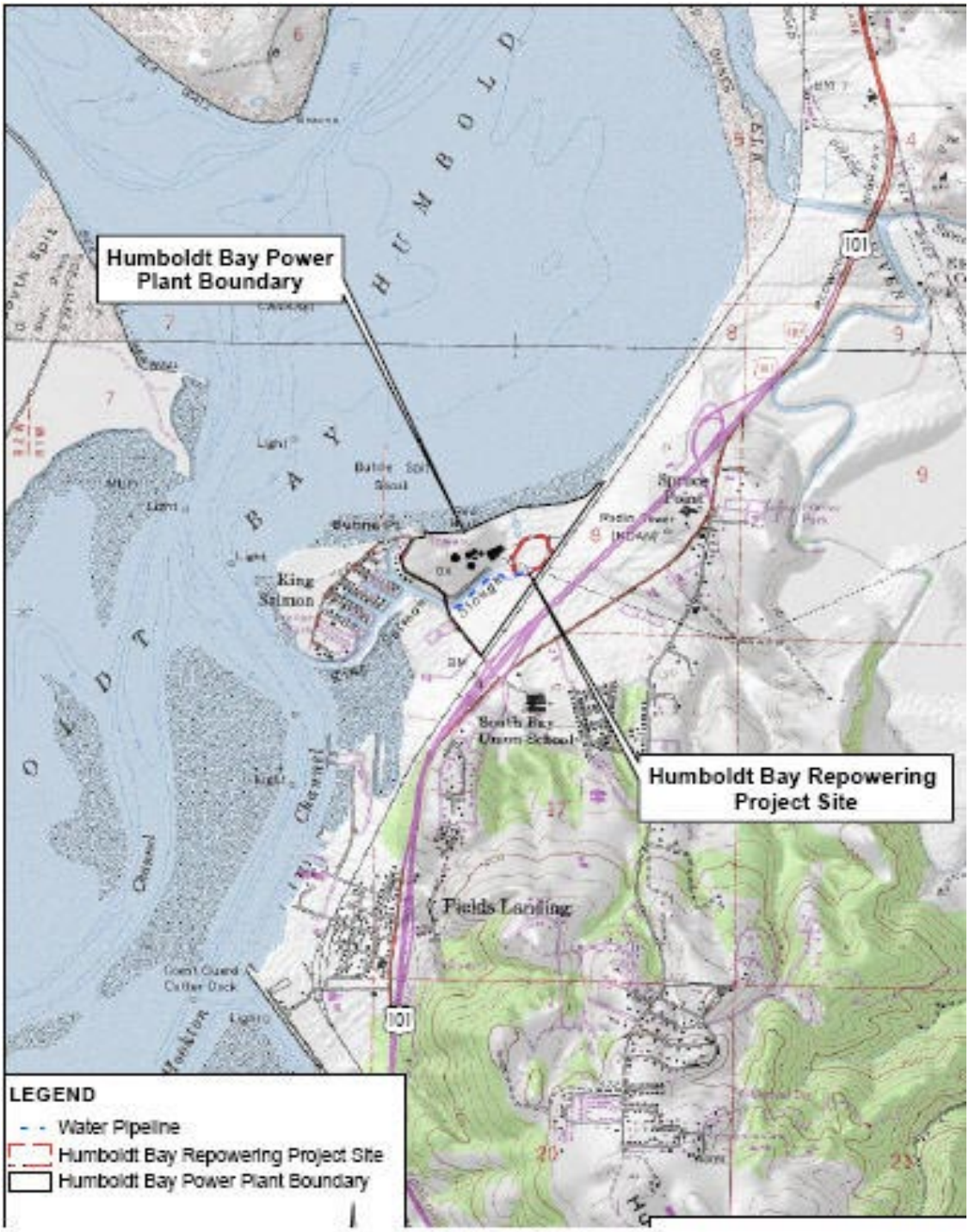

Exhibit 1

PROJECT DESCRIPTION – FIGURE 3

Oblique rendering of Proposed Project looking northwest, toward Humboldt Bay

Exhibit 1

Generators will be equipped with the following equipment:

- Natural gas and diesel fuel systems
- Lubricating oil system
- Compressed air systems
- Cooling system
- Intake air and exhaust gas systems
- Emission control system
- Fire detection and protection system
- Gas leakage detection system
- Oily water collection system
- Engine generators control and protection system

Air emissions from the proposed facility would be controlled using best available control technology applied to each engine's exhaust. Each system would consist of a selective catalytic reduction unit for oxides of nitrogen (NOx) control and an oxidation catalyst unit for carbon monoxide (CO) and volatile organic compounds (VOC) control. The tallest components of the project would be the 100-foot high exhaust stacks. (Exs. 1; 200, p. 3-2.)

3. Associated Facilities

For electric transmission, the HBRP would be connected to PG&E's existing HBPP switchyard via 13.8 kV cables and bus work from the generator circuit breakers to new step-up transformers and then via two 60-kV tie lines and one 115-kV tie line into the switchyard. Normally, four of the units would feed into the 115-kV line, and the remaining six units would feed into the 60-kV lines. Switchyard improvements would include replacement of the existing 60-kV and 115-kV circuit breakers and replacement of a 115-kV steel lattice tower with three steel poles. No new transmission facilities would be necessary beyond the switchyard. (Exs. 1, p. 2-19; 200 p. 3-3.)

Natural gas would be supplied to the HBRP via an onsite 10-inch-diameter, high-pressure, natural gas pipeline owned and operated by PG&E. The natural gas would flow through gas scrubber/filter equipment, a gas pressure control station, and a flow-regulating station prior to entering the reciprocating engines. (Ex. 1, p. 2-20.)

The HBRP proposes using approximately 2,400 gallons of water per day (2.7 acre-feet/year) on average for cooling or other industrial purposes. The engines would use an air radiator cooling system in a closed loop system (similar to the cooling systems on automobiles). Raw water for industrial processes and site landscape irrigation would be supplied from PG&E's existing ground water well via a direct connection to an onsite 6-inch-diameter water pipeline.

Potable water demands would average about 160 gallons per day (0.2 acre-feet/year) as required for non-process uses (i.e., sinks, toilets, showers, drinking fountains, eye wash/safety showers, etc.). Potable water would be supplied from a new 4- to 6-inch-diameter on-site pipeline running 1,200 feet to a connection with the existing Humboldt Community Services District (HCSD) line that runs along King Salmon Avenue. (Ex. 1, pp. 2-20 and 7-1.)

The HBRP would discharge process and sanitary wastewater into the HCSD sanitary sewer system at an average rate of about 860 gallons per day. Process wastewater would collect from area washdown, sample drains, and drainage from facility equipment areas. Sanitary wastewater would collect from sinks, toilets, showers, and other sanitary facilities. Both process and sanitary wastewater would be conveyed to HBPP's existing 4-inch-diameter wastewater pipeline, which already interconnects to the HCSD sewer system. The new storm water collection system and outfall would route non-contaminated storm water to the southeast corner of the HBRP site, discharging over land that ultimately would drain into Buhne Slough. (Ex. 1, Section 2.5.9.1 and Appendix 7B; Ex. 200 p. 3-3.)

4. Construction and Operation

PG&E proposes to initiate construction of the HBRP in Fall 2008. The project is expected to take about 18 months for construction and startup testing and could begin commercial operation as early as the second quarter of 2010, if there are no delays. The construction workforce would average 101 workers per month and would peak during months 11 and 12, with up to 236 workers onsite. Construction costs are estimated to be $250 million. (Ex. 1, p. 8.10-15.)

Primary construction access would be from King Salmon Avenue via a new temporary construction access road south of the existing HBPP cooling water intake channel. Storage of construction materials and equipment would occur within the project site boundaries north of the HBRP site adjacent to Humboldt Bay and east of the cooling water discharge channel. Construction worker parking would occur in two locations. Within the project site boundaries, parking would occur south of the existing HBPP cooling water intake channel and west of the adjacent HBRP site. Additional parking would occur adjacent to the northwest corner of the HBPP boundaries in a currently abandoned parking lot offsite along King Salmon Avenue. (Ex. 1, p. 2-26 and Figure 2.3-1.)

After completion, the HBRP would be operated by a full-time staff of 17 employees of PG&E. The power plant would be capable of operating both in load following mode to meet local system demand and reliability requirements and in Daily Cycling mode, where the plant could operate up to maximum capacity during the day and totally shut down at night or on weekends. Applicant expects the plant to be available for 90 to 97 percent of the time on an annual basis. The planned life of the generating facility is 30 years, but it could be operated longer if it is still economically viable. (Ex. 1, p. 2-27.)

The facility's several operating modes may be summarized as follows:

Load following: which could range from a single unit operating at 70 percent load to all 10 units operating at full load.

Daily cycling: with operations up to the maximum during the day and shut down at night or weekends.

Full shutdown which would occur due to forced or scheduled maintenance, or fuel supply interruption.

a. Site Activities Not Part of the Project

The construction of the HBRP would take place within the boundaries of an active power plant (Units 1 and 2 and the Mobile Emergency Power Plants (MEPPs)) and concurrent with decommissioning activities associated with the 63 MW Unit 3 nuclear reactor. Several other activities associated with ongoing operations and nuclear decommissioning actions at the HBPP site, but which are not part of the HBRP project include the following:

- Construction of the Independent Spent Fuel Storage Installation (ISFSI) Project which began construction in 2007 and is substantially complete. The ISFSI will store spent fuel rods from Unit 3 on site in an underground dry-cask storage facility beginning in late 2008 for an indefinite period;
- Decommissioning of Unit 3 and associated environmental studies necessary to define the scope of decommissioning, leading to the ultimate removal of the nuclear unit that has been shutdown since 1976;
- Demolition of the currently operating HBPP Units 1 and 2 and the MEPPs sometime following commercial operation of the HBRP (Ex. 1, p. 2-2 through 2-4);
- Removal of the fuel oil supply pipeline from Olson's Wharf to HBPP consisting of 4,200-feet of retired fuel oil pipeline. The pipeline removal project site is along the east margin of Humboldt Bay at King Salmon Slough near the HBPP. The removal of the retired fuel oil pipeline would be conducted in July through September 2008 and last for approximately 10 weeks; and

- Removal of one of the two oil storage tanks at the HBPP during 2008/2009.

The Energy Commission has no permitting authority related to the nuclear decommissioning activities, as construction of the ISFSI and decommissioning of Unit 3 are under the jurisdiction of the Nuclear Regulatory Commission, and its licensing preceded the Energy Commission. Similarly, demolition of Units 1 and 2, the MEPPs and other associated facilities of the HBPP such as the fuel oil pipeline and storage tank, are not subject to Energy Commission permitting, as their licensing and commercial operation also preceded the Energy Commission. However, Staff, in its Cumulative Impacts analysis, considered the combined effects of the proposed HBRP with the individual activities noted above as well as the continued operation of HBPP during the construction and commissioning of HBRP.

5. Purpose of the Project

The 163 MW nominal capacity HBRP is designed as a load-following and daily cycling facility to meet electric generation load and reliability requirements in PG&E's Humboldt Service Area. The project is a replacement of existing Units 1 and 2 (105 MW combined capacity) consisting of natural gas-fired and oil-fired steam turbine-generating units and of the two diesel-fired MEPPs rated at 15 MW each for HBPP. Units 1 and 2 are about 50 years old and operate less efficiently than modern power plant technologies. The new plant will consist of 10 Wartsila 18V50DF 16 MW dual-fuel reciprocating engine-generators and create a total repowering capacity of 163 MW. The HBRP would provide a 33 percent increase in efficiency compared to existing Units 1 and 2. HBRP would also be capable of running on California Air Resources Board (CARB) certified diesel fuel in order to ensure local area reliability during instances of natural gas curtailment in the region, which can occur frequently during winter. (Ex. 74, p. 4.) Applicant's witness testified that the new plant will only run on liquid fuel in the event of a natural gas curtailment or interruption in supply required to assure local area reliability. Applicant made clear that PG&E will not operate on liquid fuels under economic dispatch conditions. (Ex. 55, p. 3.) Humboldt Bay Service Area relies extensively on local generation resources due to

power import constraints and service interruptions in the 115 kV transmission system. (Ex. 200, p. 3-1.)

Applicant's witness testified regarding additional objectives of the HBRP to achieve environmental and other benefits over the current configuration of older generators including:

- Reducing NOx emissions by an average of over 25 tons per month over existing Units 1 and 2;
- Reducing CO2 by over 30 percent;
- Reducing the use of ocean water for cooling by almost 2 billion gallons per month over the existing Units 1 and 2;
- Freeing up additional natural gas capacity for local residential use during times when the natural gas system is constrained. This is possible because the HBRP will use approximately two-thirds the fuel of the existing plant to generate the same amount of electricity. Thus, HBRP should reduce the frequency of gas curtailments in the region;
- Provide a lower profile, design when compared to the old plant;
- Make use of an existing industrial site that is suited for power generation, thus eliminating the need for offsite transmission, gas and water lines; and
- Provide high reliability and be able to quickly respond to changes in load. (Exs. 55, p. 4; 74, p. 4; 6/17/08 RT 11-15.)

6. Facility Closure

The HBRP is designed for an operating life of 30 years. At an appropriate point beyond that, the project would cease operation and close down in such a way that public health and safety and the environment are protected from adverse impacts.

Although the setting for this project does not appear to present any special or unusual closure problems, it is impossible to foresee what the situation would be in 30 years or more when the project ceases operation. Therefore, we have adopted

Conditions of Certification which will ensure that plant closure will be consistent with laws, ordinances, regulations and standards (LORS) in effect at the time of closure. These conditions are found in the Compliance and Closure section of this Decision.

FINDINGS AND CONCLUSIONS

Based on the undisputed evidentiary record, we find as follows:

1. PG&E will construct, own, and operate the HBRP.

2. The HBRP involves the construction and operation of a nominal 163 MW project consisting of 10 Wartsila 18V50DF 16 MW dual-fuel reciprocating engine-generators.

3. The HBRP will be located on the 143-acre Humboldt Bay Power Plant site in Humboldt County, California.

4. The project will replace the existing plant which is 50 years old.

5. The HBRP will include associated electric transmission, gas supply, and water supply lines, which will make use of the existing utility infrastructure at the HBPP site.

6. The project will serve as a load-following and daily cycling facility to meet electric generation load and reliability requirements in PG&E's Humboldt Service Area.

7. Applicant has described additional environmental benefits as objectives of the HBRP.

8. The project and its objectives are adequately described in the relevant documents contained in the record.

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

II. PROJECT ALTERNATIVES

As a general rule, the California Environmental Quality Act (CEQA), its Guidelines, and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which meet the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.[2] (Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e); *see also*, tit. 20, § 1765.) In these instances, the range of alternatives, including the "No Project" alternative, is governed by the "rule of reason" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f).] Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project." (*Id.*)

The evidence of record in this case is uncontradicted in that the project, as mitigated, will not create any significant adverse impacts. There is thus little to be gained by examining alternatives to an environmentally acceptable project. Nevertheless, because of the project's location in the Coastal Zone, we include

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[2] Public Resources Code section 25540.6(b) requires an Applicant for a power plant which is otherwise exempt from the notice of intention process to include information on the site selection criteria, alternative sites, and the reasons for choosing the proposed site. Section 1765 of the Commission's regulations further requires the parties to present evidence on alternative sites and facilities.

Public Resources Code section 25540.6(b) also specifically states, in part:

> The commission may also accept an application for a noncogeneration project at an existing industrial site without requiring discussion of site alternatives if the commission finds that the project has a strong relationship to the existing industrial site and that it is therefore reasonable not to analyze alternative sites for the project.

We note that this provision contemplates information needed at the time a project is filed. We note further that it has been essentially rendered moot since the application contains an analysis of alternative sites and technologies. (Ex. 1, § 9.0.) We agree that the HBRP has a strong relationship to the existing power plant site. (Exs. 1, pp. 9.1 to 9.2; 200, p. 6-3.)

the following summary of evidence contained in the record in order to fully ensure compliance with all relevant statutory provisions. (Exs. 1, § 9.1.2; 200, pp. 6-3 to 6.4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Applicant and Staff were the only parties to submit substantive evidence on this topic. (6/17/08 RT 25-26.)

1. Project Objectives

The evidence (Exs. 1, pp. 9.3 to 9.4; 200, pp. 6-4 to 6-5) characterizes the project objectives as:

- Replacing the existing Humboldt Bay Power Plant Units 1 and 2, which are about 50 years old and nearing the end of their useful lives, and two Mobile Emergency Power Plants (MEPP), with a more efficient generation technology;
- Locating the proposed project near an existing substation and/or key interconnections to both the existing 60-kilovolt (kV) and 115-kV transmission lines and infrastructure for natural gas, water supply, and wastewater disposal;
- Providing a reliable load-following and daily cycling source of generation within the Humboldt Load Pocket (greater Humboldt County area), where imported power is normally constrained to supply only about half of the existing 196-MW peak load; and
- Maintaining capability for rapid-response loading of the proposed project in order to maintain service during transmission interruptions and natural gas curtailments.

To achieve these objectives, the evidence indicates without contradiction that any alternative site should be: adjacent to or near an existing substation to minimize or avoid constructing additional transmission lines; adjacent to or near high-pressure natural gas lines; on a parcel zoned for industrial use and large

enough to accommodate the project; and at a location where potential environmental impacts can be minimized. (Exs. 1, p. 9.4; 200, p. 6-11.)

2. Alternative Sites

The evidence identifies and describes the eight alternative sites considered. (Exs. 1, pp. 9.6 to 9.12; 200, pp. 6-11 to 6-12.) The evidence also establishes that none of these alternative sites is located as near to electrical transmission and natural gas infrastructure as is the HBRP at the existing PG&E site. While all of the alternative sites are served by 60-kV transmission, the existing service is not designed for loads that would be required to export power from the HBRP. Moreover, each of the alternative sites considered is located more than 13 miles from the nearest 115-kV transmission line (the nearest is 13.3 miles; the farthest, 21.2 miles). In order to supply the Humboldt load pocket in the manner that is required, a new 115-kV transmission line would likely need to interconnect at either the Humboldt Substation located in Eureka or at the existing HBPP substation. Construction of a new generation tie-line to serve any of the alternative sites with 115-kV transmission would require several miles of new right-of-way, much of it in the Coastal Zone. The cost of building this line would be very high and potential environmental impacts include loss of wetlands and endangered species habitat, as well as visual resources impacts.

In addition to requiring the construction of a tie-line, two of the alternative sites would require construction of more than seven miles of natural gas pipeline. While much of this construction would be placed in existing roadway utility corridors, connection with the existing natural gas trunk line near US-101 in Arcata would require horizontal directional drilling under several major waterways that drain into the north end of Arcata Bay, running the risk of damaging sensitive fish and invertebrate habitat.

The costs of transmission right-of-way acquisition, design, construction, and environmental mitigation would likely range from about $10 to $30 million depending on the alternative (based on a typical transmission line unit cost of about $1 million per mile). These costs, coupled with undetermined environmental effects that would likely include loss of wetlands and endangered species habitat, as well as visual resources impacts, would create impacts which are otherwise avoided at the proposed site. (Exs. 1, p. 9.12; 200, pp. 6-12 to 6-13.)

Therefore, we conclude that none of the alternative sites considered are superior to the proposed site. Constructing the HBRP at the location of the existing power plant is preferable to constructing it at an available alternative site since construction at an alternative location would require construction of associated infrastructure such as transmission and natural-gas lines. Moreover, location of the HBRP within the existing power plant site appears consistent with relevant statutory provisions regarding siting a thermal power plant in the Coastal Zone. (Ex. 200, pp. 6-14 to 6-15.)

3. Alternative Fuels and Technologies

The record also examines various generation alternatives, as well as alternative fuels and emission control alternatives. (Exs. 1, pp. 9.13 to 9.17; 200, pp. 6-7 to 6-10.) Generation alternatives include a conventional boiler and steam turbine; simple cycle combustion turbine; conventional combined cycle; Kalina combined-cycle; and advanced combustion turbine engines. (Exs. 1, pp. 9.13 to 9.14; 200, pp. 6-8 to 6-10 and 6-17 to 6-18.) The evidence convincingly establishes that these are either less efficient (*e.g.,* conventional boiler and steam turbine simple-cycle turbine) than the proposed technology, unable to meet rapidly changing electricity loads (conventional combined cycle), or as yet not commercially available (Kalina combined cycle, advanced combustion turbine engines). (Exs. 1, p. 9.14; 200, pp. 6-17 to 6-18.)

Similarly, the evidence establishes that alternative fuel sources such as oil, natural gas, coal, nuclear, geothermal, hydroelectric, biomass, solar, and wind are also unsuitable for a variety of reasons. These range from greater emissions (oil/coal/biomass) to the need for a much larger site (solar/wind) to the difficulties and costs associated with routing a larger gas pipeline in a seismically active area. (6/17/08 RT 61-63.) The evidence establishes that any alternative fuel source is accompanied by its own potentially severe impacts. (Ex. 200, pp. 6-18 to 6-21.) No evidence suggests that an alternative fuel source would be superior to that proposed.

4. No Project Alternative

The "no project" alternative assumes that the project is not constructed. The purpose of describing and analyzing this situation is to provide a comparison of the impacts of approving the proposed project with the impacts of not approving it. [14 Cal. Code Regs., § 15126.6(i).]

If the proposed HBRP were not built, the existing Humboldt Bay Power Plant Units 1 and 2 and the MEPPs would continue operation in order to support the electrical demand in the Humboldt load pocket. The existing units would continue to convert fuel to electricity at a 13,981 British Thermal Units per kilowatt (Btu/kWh) heat rate, 33 percent less efficiently than the proposed HBRP and, as a result, significant fuel reduction savings would not be realized. In addition, the proposed HBRP's 83 percent reduction in ozone precursors, 77 percent reduction in PM10 precursors, and 34 percent reduction in CO_2 air emissions, compared with the existing units, would not be realized. The existing ocean water once-through cooling system would continue to operate, using 52,000 gallons per minute (gpm) of ocean water from Humboldt Bay.

Finally, the no project alternative would not meet the proposed project objectives. It would not serve the growing needs for economical, reliable, and environmentally sound generation resources. (Ex. 200, p. 6-13.)

FINDINGS AND CONCLUSIONS

Based upon the uncontroverted evidence of record, including that presented on each subject area described in other portions of this Decision, we find and conclude as follows:

1. The evidence of record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.
2. The evidentiary record contains an adequate review of alternative sites, linear routings, fuels, technologies, and the “no project” alternative.
3. Alternative fuels and technologies are not capable of meeting project objectives.
4. No site alternative identified is capable of meeting the stated project objectives and applicable siting criteria.
5. No feasible alternative site has been identified which would lessen project impacts.
6. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been identified.
7. The proposed HBRP project has a close relationship with the uses of the proposed site.
8. Constructing the HBRP at the proposed site is environmentally preferable to constructing it at an available alternative site.
9. The provisions of the Coastal Act were specifically considered in the analysis contained in the evidentiary record.
10. Implementation of the Conditions of Certification contained in this Decision will ensure that the HBRP does not create any significant direct, indirect, or cumulative adverse environmental impacts.

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

III. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

The evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the Humboldt Bay Repowering Project is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the Project Owner and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.

Compliance with the Conditions of Certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Plan also contains requirements governing the planned closure, as well as the unexpected temporary and unexpected permanent closure, of the Project.

The Compliance Plan is composed of two broad elements. The first element establishes the "General Conditions," which:

- set forth the duties and responsibilities of the CPM, the Project Owner, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- set forth procedures for settling disputes and making post-certification changes;

- set forth the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed Conditions; and

- set forth requirements for facility closure.

The second general element of the Plan contains the specific "Conditions of Certification." These are found following the summary and discussion of each individual topic area in this Decision. The individual Conditions contain the measures required to mitigate potentially adverse Project impacts associated with construction, operation, and closure to levels of insignificance. Each Condition also includes a verification provision describing the method of assuring that the Condition has been satisfied.

The contents of the Compliance Plan are intended to be implemented in conjunction with any additional requirements contained in the individual Conditions of Certification.

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Humboldt Bay Repowering Project will be designed, constructed, operated, and closed in conformity with applicable law.

2. Requirements contained in the Compliance Plan and in the specific Conditions of Certification are intended to be implemented in conjunction with one another.

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

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 to 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. At the start of commercial

operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER 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 and the project owner's technical staff to review the status of all pre-construction or pre-operation requirements contained in the Energy Commission 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):

1. all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;
2. all monthly and annual compliance reports filed by the project owner;

3. all complaints of noncompliance filed with the Energy Commission; and

4. all petitions for project or Condition 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 this 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 (COM-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 (COM-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 (COM-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
Attn: Humboldt Repower, Docket No. 06-AFC-7(C)
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 (COM-4)

Prior to commencing construction, a compliance matrix addressing <u>only</u> those Conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix shall 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 (COM-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 (COM-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 which 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 (COM-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 (COM-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 (COM-9)

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual compliance fee, which is adjusted annually. The amount of the fee for FY2007-2008 was $17,676. The initial payment is due on the date the Energy Commission adopts the Final Decision. The Project Owner will be notified of the amount due. 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 MS-2, California Energy Commission, 1516 Ninth Street, Sacramento, CA 95814.

Reporting of Complaints, Notices, and Citations (COM-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, including noise and lighting complaints, 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 implements the on-site contingency plan. It can also include unplanned closure where the project owner fails to implement the contingency plan, and the project is essentially abandoned.

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

Planned Closure (COM-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 adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;

2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;

3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; 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 (COM-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 (COM-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 (COM-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 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 to not comply with any applicable laws, ordinances, regulations, or standards, the petition will be processed as a formal amendment to the Final Decision. A formal amendment requires public notice and review by 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, and that are compliant with laws, ordinances, regulations, and standards may be authorized by the CPM as an insignificant project change pursuant to section 1769(a)(2). This process usually takes less than one month to complete, and it requires a 14-day public review of the Notice of Insignificant Project Change that includes Staff's intention to approve the modification unless substantive objections are filed.

Verification Change

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

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.

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint (a copy of the complaint form is included in this section as Attachment A) 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 1237.

FORMAL DISPUTE RESOLUTION PROCEDURE-COMPLAINTS AND INVESTIGATIONS

Any person may file a complaint with the Energy Commission's Dockets Unit alleging noncompliance with a Commission Decision adopted pursuant to Public Resources Code section 25500. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations section 1237.

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 Startup of Reciprocating Engines	
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	

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

COMPLIANCE CONDITION NUMBER	SUBJECT	DESCRIPTION
COM-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	Compliance Verification Submittals	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 his agent.
COM-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until all of the following activities/submittals have been completed: ▪ property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns, ▪ a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction, ▪ all pre-construction conditions have been complied with, ▪ the CPM has issued a letter to the project owner authorizing construction.
COM-5	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance Conditions of Certification.
COM-6	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Energy Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.

COMPLIANCE CONDITION NUMBER	SUBJECT	DESCRIPTION
COM-7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COM-8	Confidential Information	Any information the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit with a request for confidentiality.
COM-9	Annual fees	Payment of Annual Energy Facility Compliance Fee
COM-10	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COM-11	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure.
COM-12	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-13	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-14	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.

ATTACHMENT A

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

The broad engineering assessment conducted for the Humboldt Bay Repowering Project consists of separate analyses that examine facility design, engineering, efficiency, and reliability of the project. These analyses include the on-site power generating equipment and project-related facilities.

A. FACILITY DESIGN

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

The evidence presented on this topic was undisputed. (6/17/08 RT 27-28; Ex. 1; Ex. 200, Chapter 5.1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Application for Certification (AFC) describes the preliminary facility design for the project. In considering the adequacy of the design plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes the identification of special design features that are necessary to deal with unique site conditions, which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 200.)

Staff proposed several Conditions of Certification, which we have adopted, that establish a design review and construction inspection process to verify

compliance with applicable design standards and special design requirements.[3] (Ex. 200, p. 5.1-4.) The project shall be designed and constructed to the 2007 California Building Standards Code (CBSC), and other applicable codes and standards in effect at the time design approval and construction actually begin. Condition of Certification **GEN-1** incorporates this requirement.

Staff considered potential geological hazards and reviewed the preliminary project design with respect to site preparation and development; major project structures, systems and equipment; mechanical systems; electrical systems; and related facilities.

The project will implement site preparation and development criteria consistent with accepted industry standards. This includes design practices and construction methods for grading, flood protection, erosion control, site drainage, and site access. (Ex. 200.) Conditions **CIVIL-1** through **CIVIL-4** ensures that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production and facilities used for storage of hazardous or toxic materials. (Ex. 200.) Condition **GEN-2** lists the major structures and equipment included in the initial engineering design for the project.

The power plant site is located in Seismic Zone 4, the highest level of potential ground shaking in California. (Ex. 1, Appendix 10; Ex. 200, p. 5.1-2.) The 2007 CBC requires specific "lateral force" procedures for different types of structures to determine their seismic design. (*Ibid*.) To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the

[3] Conditions of Certification **GEN-1** through **GEN-8**.

Chief Building Official (CBO)[4] for review and approval prior to the start of construction. (Ex. 200, p. 5.1-3.)

According to Staff, the mechanical systems for the project are designed to the specifications of applicable LORS. (Ex. 200, p. 5.1-3.) Conditions **MECH-1** through **MECH-3** ensures the project will comply with these standards.

Major electrical features other than the transmission system include generators, power control wiring, protective relaying, grounding system, cathodic protection system and site lighting. Condition **ELEC-1** ensures that design and construction of these electrical features will comply with applicable LORS.

The HBRP would be connected to PG&E's existing HBPP switchyard via 13.8-kV cables and bus work from the generator circuit breakers to new step-up transformers and then via two 60-kV tie lines and one 115-kV tie line into the switchyard. Normally, four of the units would feed into the 115-kV line, and the remaining 6 units would feed into the 60-kV lines. Switchyard improvements would include replacement of the existing 60-kV and 115-kV circuit breakers and replacement of a 115-kV steel lattice tower with three steel poles. No new transmission facilities would be necessary beyond the switchyard. (Ex. 1, p. 2-19 and Figure 5.2-1).

The design and construction of these facilities are described in the **Transmission System Engineering** section of this Decision. Implementation of Conditions **TSE-1** through **TSE-8** will ensure the project's transmission facilities comply with applicable LORS.

[4] The Energy Commission is the CBO for energy facilities certified by the Commission. We may delegate CBO authority to local building officials to carry out design review and construction inspections. When CBO duties are delegated to local authorities, the Commission requires a Memorandum of Understanding with the delegated CBO to assign the roles and responsibilities described in Conditions of Certification **GEN-1** through **GEN-8**. (Ex. 200, p. 5.1-3.)

The evidentiary record also addresses project closure. (Ex. 200, p. 5.1-5.) To ensure that decommissioning of the facility will conform to applicable LORS to protect the environment and public health and safety, the project owner is required to submit a decommissioning plan, which is described in the general closure provisions of the Compliance Monitoring and Closure plan. *See* **General Conditions** in this Decision, *ante*.

Finally, the Conditions of Certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. These Conditions require approval of the CBO after appropriate inspections by qualified engineers. No element of construction may proceed without approval of the CBO. (Ex. 200, p. 5.1-4.)

FINDINGS AND CONCLUSIONS

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

1. The evidence of record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portions of **Appendix A** of this Decision.
2. The Conditions of Certification set forth below are necessary to 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.
3. The Conditions of Certification below and the **General Conditions,** included in a separate section of this Decision, establish requirements to be followed in the event of facility closure.

We therefore conclude that implementation of the Conditions of Certification listed below ensure that the Humboldt Bay Repowering Project can be designed and constructed in conformance with applicable laws.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the 2007 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval, except that the CBSC applicable to the Wärtsilä supplied equipment shall be the 2001 CBSC. (The CBSC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) The project owner shall ensure that all the provisions of the above applicable codes be enforced during any construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility [2007 CBC, § 101.3, Scope]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this Decision. In the event that the initial engineering designs are submitted to the CBO when a successor to the 2007 CBSC is in effect, the 2007 CBSC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers shall clearly specify that all work performed and materials supplied on this project comply with the codes listed above.

Verification: Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2007 CBC, § 109 – Certificate of Occupancy]. Once the Certificate of Occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility which may require CBO

approval for the purpose of complying with the above stated codes. The CPM will then determine the necessity of CBO approval on the work to be performed.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawing and master specifications lists. 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 upon request.

Verification: At least 60 days (or a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 2,** 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.

Facility Design Table 2
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Engine Generator Set Foundations and Connections	10
Engine Housing Structure, Foundations and Connections	1
Crankcase Ventilation Foundations and Connections	10
Stack Structure, Foundations and Connections	10
Radiator Set Structure, Foundations and Connections	40
Station Transformer Foundations and Connections	3
Exhaust Gas Silencer Structure, Foundations and Connections	10
Rupture Disc Foundations and Connections	24
DeNox SCR Structure, Foundations and Connections	10
Black Start Unit Foundations and Connections	1
LV Room Structure, Foundations and Connections	1
MV Building/Control Structure, Foundations and Connections	1
Control Room/Office/Work Shop Building Structure, Foundations and Connections	1
Clean LO Tank Structure, Foundations and Connections	1
Used LO Tank Structure, Foundations and Connections	1
Lube Oil Service Tank Structure, Foundations and Connections	1

Equipment/System	Quantity (Plant)
Fire Fighting Container Structure, Foundations and Connections	1
Fire/Raw Water Tank Structure, Foundations and Connections	1
Diesel Tank Structure, Foundations and Connections	1
Sludge Tank Structure, Foundations and Connections	1
Pump Shelter Structure, Foundations and Connections	1
Oily Water Separator Foundation and Connections	1
Ammonia Storage Tank Structure, Foundations and Connections	2
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, 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 2007 CBC [2007 CBC, Appendix Chapter 1 § 108, Fees; Chapter 1, Section 108.4, Permits, Fees, Applications and Inspections], 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 otherwise agreed upon 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 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 the resident engineer (RE) in charge of the project [2007 California Administrative Code, Section 4-209, Designation of Responsibilities]. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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 that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;

2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;

3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;

4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets 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 when they do not conform to 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 meet requirements.

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

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

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has 5 days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within 5 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 civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: 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; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require 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 the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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 (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project [2007 CBC, Appendix Chapter 1, Section 104, Duties and Powers of Building Official].

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

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

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

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

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

1. Review all the engineering geology reports;

2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load [2007 CBC, Appendix J, Section J104.3, Soils Report; Chapter 18, Section 1802.2, Foundation and Soils Investigations]

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2007 CBC, Appendix J, Section J105, Inspections, and the 2007 California Administrative Code, Section 4-211, Observation and Inspection of Construction (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and

4. Recommend field changes to the civil engineer and RE.

   This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations [2007 CBC, Appendix Chapter 1, Section 114, Stop Orders].

C. The engineering geologist shall:

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

2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2007 California Administrative Code, Section 4-211, Observation and Inspection of Construction (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. 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.

E. 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 to all of the mechanical engineering design requirements set forth in this Decision.

F. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

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

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

The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within 5 days of the approval.

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

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2007 CBC, Chapter 17, Section 1704, Special Inspections, Chapter 17A, Section 1704A, Special Inspections, and Appendix Chapter 1, Section 109, Inspections. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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).

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 [2007 CBC, Chapter 17, Section 1704.1.2, Report Requirements]; and

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

Verification: At least 15 days (or project owner- and CBO-approved alternative time frame) 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 5 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 5 days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions [2007 CBC, Appendix Chapter 1, Section 109.6, Approval Required; Chapter 17, Section 1704.1.2, Report Requirements]. 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, 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 5 days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at an alternative site approved by the CPM during the operating life of the project [2007 CBC, Appendix Chapter 1, Section 106.3.1, Approval of Construction Documents]. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the CBO for retention by the CPM.

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 the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe .pdf 6.0) files, with restricted (password-protected) printing privileges, on archive quality compact discs.

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils, geotechnical, or foundation investigations reports required by the 2007 CBC, Appendix J, Section J104.3, Soils Report, and Chapter 18, Section 1802.2, Foundation and Soils Investigation.

Verification: At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area [2007 CBC, Appendix Chapter 1, Section 114, Stop Work Orders].

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

CIVIL-3 The project owner shall perform inspections in accordance with the 2007 CBC, Appendix Chapter 1, Section 109, Inspections, and Chapter 17, Section 1704, Special Inspections. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM [2007 CBC, Chapter 17, Section 1704.1.2, Report Requirements]. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within 5 days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following monthly compliance report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans [2007 CBC, Chapter 17, Section 1703.2, Written Approval].

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

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** 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 2**, above):

1. Major project structures;

2. Major foundations, equipment supports, and anchorage; and

3. Large field-fabricated tanks.

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, 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 [2007 CBC, Appendix Chapter 1, Section 109.6, Approval Required];

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [2007 California Administrative Code, Section 4-210, Plans, Specifications, Computations and Other Data];

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 [2007 CBC, Appendix Chapter 1, Section 106.3.4, Design Professional in Responsible Charge]; and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS [2007 CBC, Appendix Chapter 1, Section 106.3.4, Design Professional in Responsible Charge].

Verification: At least 60 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans,

specifications, and calculations have been approved and comply with the requirements set forth in 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 2007 CBC, Chapter 17, Section 1704, Special Inspections, and Section 1709.1, Structural Observations.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM [2007 CBC, Chapter 17, Section 1704.1.2, Report Requirements]. 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 2007 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing [2007 CBC, Appendix Chapter 1, Section 106.1, Submittal Documents; Section 106.4, Amended

Construction Documents; 2007 California Administrative Code, Section 4-215, Changes in Approved Drawings and Specifications].

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 the 2007 CBC, Chapter 3, Table 307.1(2), shall, at a minimum, be designed to comply with the requirements of that chapter.

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 2**, 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 that construction [2007 CBC, Appendix Chapter 1, Section 106.1, Submittal Documents; Section 109.5, Inspection Requests; Section 109.6, Approval Required; 2007 California Plumbing Code, Section 301.1.1, Approvals].

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to CBO design review and approval, and submit a signed statement to the CBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [2007 CBC, Appendix Chapter 1, Section 106.3.4, Design

Professional in Responsible Charge], which may include, but are not 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
- Humboldt County codes.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [2007 CBC, Appendix Chapter 1, Section 103.3, Deputies].

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 2**, 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 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 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 that installation [2007 CBC, Appendix Chapter 1, Section 109.5, Inspection Requests].

The project owner shall:

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

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

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

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

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

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that 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 [2007 CBC, Appendix Chapter 1, Section 109.3.7, Energy Efficiency Inspections; Section 106.3.4, Design Professionals in Responsible Charge].

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) 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 all electrical equipment and systems 480 Volts or higher (see a representative list, 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 [2007 CBC, Appendix Chapter 1, Section 106.1, 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 [2007 CBC, Appendix Chapter 1, Section 109.6, Approval Required; Section 109.5, 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 Decision.

A. Final plant design plans shall 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 must establish:

1. short-circuit ratings of plant equipment;

2. ampacity of feeder cables;

3. voltage drop in feeder cables;

4. system grounding requirements;

5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;

6. system grounding requirements; and

7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the monthly compliance report:

1. Receipt or delay of major electrical equipment;

2. Testing or energization of major electrical equipment; and

3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) 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

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

Pursuant to CEQA, Staff analyzed whether the HBRP's use of natural gas would result in: 1) adverse impacts on local and regional energy supplies and resources; 2) whether any adverse impacts are significant; and 3) whether mitigation measures exist to reduce or eliminate the significant impacts. (Ex. 200, p. 5.3-1.)

Under normal conditions, HBRP will burn natural gas at a nominal rate between 125 and 130 million Btu (British thermal units) per hour, LHV (lower heating value). This is a substantial rate of energy consumption that could impact energy supplies.

Natural gas fuel will be supplied to the project by an existing high pressure PG&E pipeline serving the existing Humboldt Bay Power Plant (HBPP). This line, in turn, is supplied by a 145-mile extension from a PG&E backbone pipeline to the east. The PG&E natural gas system has access to gas from the Rocky Mountains, Canada, and the Southwest. Additional gas supplies are obtained from wells at nearby Tompkins Hill (14 miles south of the project site, near the City of Fortuna). These represent resources of considerable capacity; adequate sources for a project of this size. Therefore, it appears unlikely that the project

could cause a substantial increase in demand for natural gas in California. (Ex. 200, p. 5.3-3.)

A unique feature of the HBPP, and of the HBRP proposed to replace it, is the need for a backup fuel supply in the event of curtailment or emergency interruption of the natural gas fuel supply. The natural gas supply system that serves Humboldt County and the Eureka area stretches 145 miles across the Coast Range Mountains. In the winter, when residential heating consumes large quantities of gas, supplies to industrial users must typically be curtailed. The HBPP, and the proposed HBRP, tend to experience gas curtailment whenever ambient temperatures drop below 50°F. Additionally, landslides and adverse weather conditions occasionally cause loss of service.

In order for the plant to continue to operate, it must be able to switch to an alternate supply of fuel. The HBRP will rely on low-sulfur diesel fuel when gas supplies are inadequate. This fuel is readily available from local suppliers; a four-day supply (634,000 gallons) would be stored in tanks on-site. With this backup fuel supply, there is no real likelihood that the HBRP will require the development of additional energy supply capacity. (Ex. 200, pp. 5.3-3 to 5.3-4.)

The Wärtsilä 18V50DF dual fuel engine generator sets proposed for the HBRP are the largest and most efficient such machines now available. They are nominally rated at 16.6 MW gross and 47 percent efficiency LHV at ISO[5] conditions. While the fuel efficiency of a gas turbine generator drops off rapidly when the machine is operated at less than full load, the efficiency of a reciprocating engine such as the Wärtsilä suffers much less at lower output. From 75 percent load to full load, the Wärtsilä's efficiency is nearly constant; at 50 percent load, it drops only to about 90 percent of full-load efficiency. Further, the machines can go from a cold start to full load in ten minutes. Such operating

[5] International Standards Organization (ISO) standard conditions are 15°C (59°F), 60 percent relative humidity, and one atmosphere of pressure (equivalent to sea level).

flexibility makes these the most capable machines available in their size range for providing the required load following and daily cycling service for which the HBRP is intended.

Consideration of various alternative power plant equipment selections showed that none could achieve nearly the efficiency or flexibility of the Wärtsilä machines. The efficiency of gas turbines of appropriate size varies from 37 to 45 percent. The most efficient gas turbine, the GE LMS100, generates 99 MW but its output cannot be reduced as efficiently as can the Wärtsiläs. (Ex. 200, pp. 5.3-5 to 5.3-6.)

The only nearby power plant that could, in conjunction with HBRP, create cumulative energy consumption impacts, is the existing HBPP. That facility will be shut down, however, once the HBRP is completed. The record shows there are sufficient fuel supplies to supply both facilities during the HBRP's commissioning phase. No other projects that could contribute to cumulative energy impacts have been identified. (Ex. 200, p. 5.3-7.) The HBRP will provide a 30 percent increase in efficiency over the current HBPP. (Ex. 200, p. 3-1.)

FINDINGS AND CONCLUSIONS

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

1. The HBRP project will consist of 10 reciprocating Wärtsilä engine generators.

2. Existing natural gas resources, supplemented by a back up diesel fuel supply, exceed the fuel requirements of the project.

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

4. The project configuration and choice of generating equipment represent an acceptable combination to achieve project objectives.

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

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

The Commission therefore concludes that HBRP will not cause any significant direct or indirect impacts on energy resources.

No Conditions of Certification are required for this topic.

C. POWER PLANT RELIABILITY

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

A power plant is considered reliable if it does not degrade the reliability of the utility system to which it is connected, that is, it exhibits reliability at least equal to that of other power plants on the system. Reliable operation is a combination of factors, i.e., the power plant should be available when called upon to operate and be able to operate for extended periods without shutdown for maintenance or repairs. Project safety and reliability are achieved by ensuring equipment availability, plant maintainability with scheduled maintenance outages, fuel and water availability, and adequate resistance to natural hazards. (Ex. 200, pp. 5.4-2 to 5.4-3.)

The project owner will ensure equipment availability by use of quality assurance/quality control programs (QA/QC) typical of the power industry. Equipment will be purchased from qualified suppliers, based on technical and commercial evaluations. Suppliers' personnel, production capability, past performance, QA programs and quality history will be evaluated. The project owner will perform receipt inspections, test components, and administer independent testing contracts. Staff expects implementation of this program to yield typical reliability of design and construction. To ensure implementation of the QA/QC programs, the **Facility Design** portion of this Decision contains appropriate Conditions of Certification. (Ex. 200, p. 5.4-3.)

The project's design includes appropriate redundancy of functions. The project's 10 generators are configured as independent, parallel equipment trains. This allows the facility to continue to operate at reduced output in the event that a non-redundant component in one train fails. All plant ancillary systems are also designed with adequate redundancy to ensure continued operation in the face of equipment failure. Project maintenance will be typical of the industry, including preventative and predictive techniques. Any necessary maintenance outages will be planned for periods of relatively low electricity demand. (Ex. 200, pp. 5.4-3 to 5.4-4.)

Reasonable long-term availability of fuel and water is also necessary to ensure project reliability. The project will be supplied natural gas through a short 10-inch diameter connection from the existing PG&E high pressure gas line on the HBPP site. This line, in turn, is supplied by a 145-mile extension spur from a PG&E backbone pipeline to the east. The PG&E natural gas system offers access to adequate supplies of gas from the Rocky Mountains, Canada, and the Southwest. Additional gas supplies are obtained from wells at nearby Tompkins Hill. This natural gas system therefore offers adequate supply and pipeline capacity to meet project needs. In addition, a back-up diesel fuel supply will provide fuel during times in which natural gas is curtailed during winter peak periods or due to damage to the backbone supply line. (Ex. 200, p. 5.4-4.)

HBRP will use raw water from the existing PG&E well No. 2 on the HBPP site for industrial uses, including the engine cooling systems, auxiliary equipment closed cooling water system, fire water tank replenishment, and landscape irrigation. Potable water from the Humboldt Community Services District water system, supplied via a new 4-inch to 6-inch diameter, 1,200 foot long connection to the existing water line along King Salmon Avenue, will serve sanitary uses (drinking water, sinks, and toilets, emergency eyewashes and safety showers) and act as a backup source of fire water. Since the generators and auxiliaries are air cooled, plant water consumption is minimal. (Ex. 200, p. 5.4-5.)

The site is located in Seismic Zone 4. HBRP will be designed and constructed to comply with current applicable LORS for seismic design. These standards improve seismic stability compared with older power plants, and ensure that the project will perform at least as well as existing plants in the electrical system. (Ex. 200, p. 5.4-6.) The Conditions of Certification in the **Facility Design** section of this Decision ensure that the project will conform with seismic design LORS.

Due to its location across from the mouth of Humboldt Bay, the HBRP could be subject to inundation in the event of a tsunami. PG&E estimates that a tsunami occurring at high tide could cause water to inundate the site to a height of 28 to 43 feet, and up to 50 feet during a storm. Though this would surely impact the power plant, PG&E proposes to design the plant so that all structures and equipment are anchored to prevent flotation, collapse, or lateral displacement. We find this is a reasonable approach. Any tsunami damage would likely be quickly repairable. The evidence gives rise to no special concern regarding the HBRP's functional reliability in turn affecting the electric system's reliability due to tsunami.

While the site lies within a special flood hazard area, PG&E plans to follow Humboldt County guidelines and design the HBRP to an elevation of one foot above existing site elevation. The record establishes that this should provide adequate protection from flooding. (Ex. 200, p. 5.4-7.)

The Applicant predicts the project will have an annual availability factor of 90 to 97 percent. Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council (NERC), show an equivalent availability factor of 94.50 percent for diesel engine units of all sizes. The project's predicted availability factor is reasonable. The procedures for design, procurement, and construction are in keeping with industry norms and will likely result in an adequately reliable plant. (Ex. 200, pp. 5.4-7 to 5.4-8.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings:

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

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

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

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

D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant…to a point of junction with an interconnected transmission system." (Pub. Res. Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The Commission also conducts an environmental review of the "whole of the action" related to the power plant proposal. This may include examining the environmental effects of facilities made necessary by the construction and operation of the proposed power plant but not licensed by the Commission.

The California Independent System Operator (CAISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. The Commission works in conjunction with the CAISO in assessing a project's potential impacts of connecting to the electricity grid. The CAISO has reviewed a utility System Impact Study (SIS), and provided its analysis, conclusions and recommendations, in a preliminary approval letter dated April 13, 2006, to PG&E, the local system utility. (Ex. 4, Attachment DA5-4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Description

The Applicant proposes to interconnect the 163 MW HBRP project to the electrical grid in two ways. Approximately 98 MW of power will be connected to the 60-kV network through an existing substation on the larger HBPP site on which the project is proposed and approximately 65 MW will be connected to an existing 115-kV transmission line that currently serves the HBPP site.

The HBRP's switchgear will be housed in a new building adjacent to the existing HBPP substation. It will include a four-section 13.8-kV bus with three 4,000-ampere 13.8-kV sectionalizing circuit breakers. Three generators would be connected to the right section, a second set of three new generators to the left section, and a third set consisting of the remaining four new generators to the two middle sections of the bus. Each generator would connect to its respective bus section through a 1,200-ampere circuit breaker.

The first and second sets of generators would connect from their bus sections to step-up transformers and then to the existing 60-kV double bus of the HBPP substation by using the existing two switch bays for the HBPP units 1 and 2. Two 60-KV overhead tie lines of 82-feet and 117-feet in length on a 75-90 foot high tubular steel pole will connect the HBRP bus to the HBPP substation. The third set of four generators would connect from the HBRP bus via a step-up transformer directly to the existing Humboldt Bay-Humboldt 115-kV line via a new 496-foot long overhead tie line on a 50-foot high tubular steel pole.

Substation improvements would include replacement of the existing 60-kV circuit breakers and disconnect switches, and replacement of the existing 115-kV line steel lattice tower with a tubular steel pole. No new transmission facilities are proposed beyond the fence line of the HBPP complex. On completion of the proposed HBRP, the existing 60-kV circuit breakers for the HBPP units 1 & 2 and 115-kV circuit breakers for the two MEPP units would be removed from the substation along with retirement of those generating units.

Commission Staff testified that the configuration of the HBRP switchgear and the interconnection facilities is in accordance with good utility practices. (Ex. 200, pp. 5.5-5 to 5.5-6.)

2. Study Results

The January 20, 2006, PG&E system impact study (SIS) was conducted with 2008 winter peak, 2008 summer peak, and 2008 summer off-peak full loop cases. The study included CAISO-approved PG&E transmission system reliability upgrades that would be operational by winter 2008, and generation and transmission projects in the PG&E transmission system higher than HBRP's queue position. The 2008 base cases were developed from PG&E's 2004 base cases using 1-in-10 year extreme weather conditions. The study included a Power Flow analysis, a Dynamic stability analysis, a Short Circuit analysis and Substation Evaluation, and a Reactive Power Deficiency analysis. The Power Flow Study was conducted before and after the addition of the HBRP with a winter peak load of 197 MW, a summer peak load of 159 MW and a summer off peak load of 81 MW for the Humboldt area. The PG&E total system load was considered as 18,261 MW for the winter peak case, 22,745 MW for the summer peak case and 12,759 MW for the summer off peak case.

Although the SIS was prepared under the assumption that HBRP would be on-line in August 2009 and the Applicant now projects that event to occur a year later, the parties and CAISO agree that the delay does not affect the SIS's analysis or conclusions. (Ex. 200, pp. 5.5-7 to 5.5-8.)

a. Power Flow Study Results

The SIS found no normal (N-0) overloads in the PG&E system due to the interconnection of the HBRP under 2008 winter peak, summer peak, and summer off peak system conditions. However, under certain contingencies and 2008 winter peak and summer off peak system conditions, the study identified the following overloads and corresponding mitigation measures:

- Humboldt-Trinity 115-kV Line. The addition of the HBRP would cause new overloads on this line under 2008 summer off peak system conditions for the Category B outage of the Bridgeville-Cottonwood 115-kV line and the Category C outage of the Bridgeville substation 115-kV bus. Two options for mitigation of the line overloads were considered by PG&E – either dropping one of the HBRP generating units via a special protection system (SPS) at the Humboldt Bay and Humboldt substations or reconductoring 49-miles of the Humboldt-Trinity 115-kV line. The Applicant preferred the SPS mitigation option and the CAISO agrees with that choice. Staff considers the mitigation measure acceptable.

- Humboldt-Eureka 60-kV Line. Pre-project overloads would remain unchanged due to the addition of the HBRP for selected Category B outages under 2008 summer peak and winter peak system conditions. PG&E's planned Project T958, previously approved by the CAISO, will mitigate the existing and post-HBRP overloads by reconductoring the 1-mile Humboldt-Harris section of the 4.5-mile Humboldt-Eureka 115-kV line. Completion of that project is expected by December 2008.

- Humboldt Bay-Eureka 60-kV Line. A pre-project overload would increase marginally due to the addition of the HBRP for the Category C outage of the Humboldt substation 60-kV bus under 2008 summer peak and winter peak system conditions. Mitigation measures include PG&E operational procedures for dropping loads and/or transferring more HBRP units from the 60-kV HBPP substation to the Humboldt Bay-Humboldt 115-kV line and turning on the proposed 100 MVAR Static Voltage Ampere Reactive Compensator (SVC) at the Humboldt substation.

- Humboldt Substation 115/60-kV Transformer Banks No. 1 & 2. Pre-project overloads would be exacerbated due to the addition of the HBRP for the Category C outage of the Humboldt Bay substation 60-kV bus under 2008 winter peak system conditions. These overloads are mitigated by the PG&E operational procedures described for the Humboldt Bay-Eureka 60-kV line, above.

- Bridgeville Substation 115/60-kV Transformer Bank No. 1. A pre-project overload would be exacerbated due to the addition of the HBRP for the Category C outage of the Humboldt substation 115-kV bus under 2008 winter peak system conditions. These overloads are also mitigated by the PG&E operational procedures described for the Humboldt Bay-Eureka 60-kV line, above. (Ex. 200, pp. 5.5-8 to 5.5-9; Ex. 16, Attachment DR-84-1.)

b. Short Circuit Study Results

The Short Circuit Study identified that fault currents at the selected substations electrically adjacent to the HBRP in the PG&E system would increase by 1 to 40 percent from the pre-project case due to the addition of the HBRP. The study is used to determine if any equipment in the selected substations would be overstressed by the addition of the HBRP. No overstressed breakers or other equipment were identified. (Ex. 200, pp. 5.5-9 to 5.5-10.)

c. Dynamic Stability Study Results

The study indicates that the HBRP would cause the transmission system to be unstable for the contingency of the Humboldt substation 115-kV bus or the Humboldt-Rio Dell 60-kV line. The study also determined that during the contingency of the Humboldt Bay-Humboldt # 1 60-kV line or the Humboldt Bay-Eureka 60-kV line, the system frequency at about fourteen 60-kV buses in the Humboldt area, including the HBPP substation, would fall below 59.6 Hertz for more than 6 cycles, a violation of CAISO reliability criteria.

As a mitigation plan, the SIS identified the need for installation of an SPS at the Humboldt Bay and Humboldt substations for curtailing some or all of the HBRP generating units. The CAISO approved the SPS. SPS specifications would be prepared once the design of PG&E Project T945, a 100 MVAR SVC at the Humboldt substation, is completed, because the SVC has the potential to reduce or eliminate the need to curtail HBRP generation due to dynamic instability. (Ex. 200, p. 5.5-10.)

d. Reactive Power Deficiency Analysis

The Power Flow studies indicate that the addition of the HBRP would cause applicable low voltage criteria violations on four 60-kV load buses in the

Humboldt area under normal 2008 summer peak load conditions and on one 60-kV load bus during normal 2008 winter peak conditions. Under contingency conditions the study could not identify any low voltage violations. The post-project voltages are marginally below the 0.95 per unit voltage requirement and less than 0.2 percent. Because the substations with low voltage violations are far away from the HBRP site and the low voltages are forecasted to occur without the HBRP, PG&E decided that the HBRP is not responsible for mitigation of these minor violations. In addition, PG&E's Project T945 described above will improve the supply voltage in the area. (Ex. 200, pp. 5.5-10 to 5.5-11.)

With implementation of the above mitigation measures, the project interconnection would comply with NERC/WECC planning standards and CAISO reliability criteria. (Ex. 200, p. 5.5-12.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings and conclusions:

1. The record includes a System Impact Study (SIS) which analyzes potential reliability and congestion impacts that would occur when HBRP interconnects to the grid.

2. The SIS identified pre-project overloads in the transmission system which the addition of HBRP will exacerbate.

3. Transmission system impacts can be mitigated by installation of special protection systems, operating procedures, and disconnect switches.

4. The project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria and applicable LORS.

5. The Conditions of Certification below are adequate to ensure HBRP does not adversely impact the transmission grid.

6. The CAISO has approved HBRP to interconnect to the CAISO Controlled Grid after making the required system upgrades.

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

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 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 to 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", California ISO standards, National Electric Code (NEC) and related industry standards.

B. Breakers and busses in the power plant 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 the following except that the project owner may request that the California ISO provide item 3 below:

1. The Special Protection System (SPS) sequencing and timing if applicable,

2. A letter stating that the mitigation measures or projects selected by the transmission owners for each criteria violation are acceptable,

3. The Operational Procedure/study report based on 2010/current Commercial Operation Date (COD) system conditions (including operational mitigation measures) from the California ISO and/or PG&E.

4. The executed project owner and CAISO Large Generator Interconnection Agreement.

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

1. 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.
2. 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.
3. 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.
4. The Special Protection Scheme (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM.
5. A letter stating that the mitigation measures or projects selected by the transmission owners for each criteria violation are acceptable.
6. The Operational Procedure/study report based on 2010/current COD system conditions (including operational mitigation measures) from the CAISO and/or PG&E, or a letter attesting that PG&E has requested that the CAISO provide the study directly to the CPM.
7. The executed project owner and CAISO Large Generator Interconnection Agreement.

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

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

TSE-7 The project owner shall provide the following Notice to the CAISO prior to synchronizing the facility with the California Transmission system:

A. At least one week prior to synchronizing the facility with the grid for testing, provide the CAISO a letter stating the proposed date of synchronization; and

B. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week prior to initial synchronization with the grid. The project owner shall contact the California 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 California 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:

1. "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.

2. 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”.

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

The project's transmission lines must be constructed and operated in a manner that protects the environment and public health and safety, and complies with applicable law. This section summarizes the potential impacts of the transmission tie-lines on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electromagnetic field exposure.

SUMMARY AND DISCUSSION OF THE EVIDENCE

HBRP will be interconnected to the electric transmission grid by three new transmission lines extending to the existing HBPP substation. The project site and new transmission lines are entirely on the HBPP site with no nearby residences.

The specific transmission components are:

- The HBRP's on-site 60-kV/115-kV switchyard.
- An overhead 115-kV line extending approximately 500 feet northeast from the HBRP switchyard to PG&E's existing Humboldt Bay-Humboldt 115-kV line.
- Two 60-kV overhead lines of 82 feet and 117 feet connecting the HBRP Switchyard to the existing Humboldt Bay Power Plant.

The proposed new lines would be owned, operated and maintained by PG&E. Conductors would be standard low-corona aluminum steel reinforced cables supported on new steel poles 70 to 90 feet (60-kV) or 50 feet high (115-kV). Their design and construction would be in keeping with PG&E guidelines. (Ex. 1, pp. 5-1 to 5.2; Ex. 200, p. 4.11-4.)

1. Aviation Safety

Any potential hazard to area aircraft would arise from the potential for collision in the navigable airspace. While the HBRP site is approximately two miles from the Eureka Municipal Airport, the height of the proposed support towers, at a maximum of 90 feet, is much less than the 200 feet regarded by the Federal Aviation Administration as triggering concerns about aviation safety. The proposed line structures therefore do not pose an obstruction-related aviation hazard to area aircraft. (Ex. 200, p. 4.11- 5.)

2. Interference: Radio-Frequency Communication and Audible Noise

Transmission line-related radio-frequency interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor, known as “corona discharge.” The level of any such interference depends on the magnitude of the electric fields involved and the distance from the line. The potential for such impacts is, therefore, minimized by reducing the line electric fields and locating the line away from inhabited areas.

The proposed lines will use low-corona designs to reduce surface-field strengths. Similar existing lines do not currently cause corona-related complaints along their routes, so there should not be any corona-related radio-frequency interference or related complaints in the general project area.

Audible noise can occur from corona discharges, though it is generally limited to transmission lines of 345 kV and larger, not the 60 and 115 kV lines proposed here. This noise does not generally extend beyond the transmission line right-of-way and thus would be inaudible to any sensitive receptor in the vicinity. (Ex. 200, pp. 4.11-5 to 4.11-6.)

3. Fire Hazards

Fire hazards include fires that could be caused by sparks from overhead conductors or direct contact between the conductors and nearby trees and other combustible objects. Standard fire prevention and suppression measures used for similar PG&E lines will be implemented for the proposed project lines. (Ex. 200, p. 4.11-6.)

4. Hazardous Shocks

Hazardous shocks could result from direct or indirect contact between an individual and the energized line, and are capable of causing serious injury or death. Compliance with California Public Utilities Commission (CPUC) General Order 95, as required by Condition of Certification **TLSN-1**, will satisfactorily mitigate any hazard. (Ex. 200, pp. 4.11-6 to 4.11-7.)

5. Nuisance Shocks

Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. The potential for nuisance shocks around the proposed line will be minimized through standard industry grounding practices. Condition of Certification **TLSN-3** will ensure their implementation. (Ex. 200, p. 4.11-7.)

6. Electric and Magnetic Field (EMF) Exposure

The possibility of deleterious health effects from exposure to electric and magnetic fields (EMF) has raised public health concerns about living near high-voltage lines. The available evidence has not established that such fields pose a significant health hazard to exposed humans, or the definite lack of a hazard.

While there is considerable uncertainty about EMF health effects, the following facts have been established from the available information:

- Any exposure-related health risk to the exposed individual will likely be small;
- No biologically significant exposures have been established;
- Most health concerns are about the magnetic field; and
- The measures employed for such field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures.

Field intensities are estimated or measured for a height of one meter above the ground. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the support structures, degree of cancellation from nearby conductors, distance between conductors, and in the case of magnetic fields, amount of current in the line.

Specific field strength-reducing measures are incorporated into power line designs to ensure the field strength minimization currently required by the California Public Utilities Commission (CPUC) in light of the concern over EMF exposure and health. These reduction measures may include the following:

- Increasing the distance between the conductors and the ground;
- Reducing the spacing between the conductors;
- Minimizing the current in the line; and
- Arranging current flow to maximize the cancellation effects from the interaction of conductor fields.

Optimum field-reducing measures will be incorporated into the proposed line design. Under Condition of Certification **TLSN-2,** however, validation of the assumed reduction efficiency by taking before and after field strength measurements is required. (Ex. 200, pp. 4.11-7 to 4.11-9.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings and conclusions:

1. The proposed lines and related facilities do not pose an aviation hazard.

2. The long-term, mostly residential magnetic exposure from the proposed line would be insignificant as a health concern given the absence of residences along the proposed route. On-site worker or public exposure would be short term and at levels expected for lines of similar design and current-carrying capacity. Such exposure has not been established as posing a significant human health hazard.

3. The potential for nuisance shocks will be minimized through grounding the project's lines and other field-reducing measures required by standard industry practices.

4. The Conditions of Certification reasonably ensure that the project's transmission tie-line will not have significant environmental impacts on public health and safety, nor cause impacts in terms of, radio/TV communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or electromagnetic field exposure.

We therefore conclude that with implementation of the Conditions of Certification the project will conform with all applicable laws, ordinances, regulations, and standards relating to Transmission Line Safety and Nuisance.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission lines 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, Sections 2700 through 2974 of the California Code of Regulations, and PG&E's EMF-reduction guidelines.

Verification: At least 30 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 The project owner shall hire a qualified consultant to measure the strengths of the electric and magnetic fields from the lines before and after they are 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 proposed route. These measurements shall be completed no later than six months after the start of operations.

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

TLSN-3 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership.

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

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

A. AIR QUALITY

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

During the extensive and complicated air quality analysis for this project, the Applicant and Staff worked extensively with the North Coast Unified Air Quality Management District (NCUAQMD), the California Air Resources Board (CARB), U.S. EPA, as well as local and federal land managers to create a Final Determination of Compliance (FDOC) which ensures that all federal, state, and local air quality requirements will be met by the project. (Ex. 206, 6/17/08 RT 34.)

Air quality regulatory agencies, Applicant, and Staff reached agreement on all relevant issues, including the Conditions of Certification following this narrative. The NCUAQMD's Air Pollution Control Officer testified that the various experts were able to agree on requirements that are contained in what he described as "a very fair, accurate, and protective permit." (6/17/08 RT 36:4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants, called ambient air quality standards (AAQS). The state AAQS, established by the CARB, are typically lower (more protective) than the federal AAQS which are established by the U.S. EPA. The state and federal air quality standards are listed below in **Air Quality Table 1**.

AIR QUALITY Table 1

State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	None
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	150 µg/m^3
	Annual	20 µg/m^3	None
Fine Particulate Matter (PM2.5)	24 Hour	None	35 µg/m^3
	Annual	12 µg/m^3	15 µg/m^3
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (338 µg/m^3)	None
	Annual	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	None
	3 Hour	None	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	Annual	None	0.03 ppm (80 µg/m^3)

In general, an area is designated as attainment if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as non-attainment for an air contaminant if that contaminant standard is violated. Where not enough ambient data are available to support designation as either attainment or non-attainment, the area can be designated as unclassified. An area could be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same air contaminant. (Ex. 200, p. 4.1-6.)

1. Summary of Existing Ambient Air Quality

The local and recent ambient air quality data show existing violations of ambient air quality standards for PM10 in the baseline conditions. The Commission staff uses the highest local background ambient air concentrations over the past three years as the baseline for Staff's analysis of potential ambient air quality impacts for the proposed HBRP. The highest concentrations are shown in **Air Quality Table 2**.

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AIR QUALITY Table 2
Highest Local Background Concentrations (μg/m^3)

POLLUTANT	LOCATION	Averaging Time	Background	Limiting Standard	Percent of Standard
PM10	Eureka	24 hour	**72.2**	50	**144**
		Annual	**21.1**	20	**106**
PM2.5	Eureka	24 hour	35.0	35	100
		Annual	8.2	12	68
CO	Ukiah	1 hour	3,250	23,000	14
		8 hour	1,978	10,000	20
NO_2	Ukiah	1 hour	75.2	338	22
		Annual	17.0	56	30
SO_2	San Francisco	1 hour	114.4	655	17
		24 hour	21.0	105	20
		Annual	5.8	80	7

(Ex. 200, p. 4.1-10.)

a. Nonattainment Pollutants

The criteria pollutant of primary concern in the NCUAQMD is particulate matter, which occurs at levels above the state PM10 standard. **Air Quality Table 3** summarizes the existing ambient monitoring data for particulate matter (PM10 and PM2.5) collected by CARB and NCUAQMD from monitoring stations closest to the project site. Data marked in **bold** indicates that the most-stringent current standard was exceeded. An exceedance is not necessarily a violation of the standard. Only persistent exceedances lead to designation of an area as nonattainment.

AIR QUALITY Table 3
Highest Existing Ambient Concentrations (μg/m^3) for the 'I' Street, Eureka Monitoring Station

Pollutant	Averaging Time	2002	2003	2004	2005	2006
PM10	24 hour	38.0	**71.1**	**63.9**	**71.0**	**72.2**
PM10	Annual	22	21	**20.7**	13.6	**21.1**
PM2.5	24 hour	23.7	**36.1**	25.6	31.8	35.0
PM2.5	Annual	7.9	---	8.2	---	7.6

(Ex. 200, p. 4.1-7.)

Gaseous contaminants such as NO_x, SO_2, organic compounds, and ammonia (NH_3) from natural or man-made sources can form secondary particulate nitrates, sulfates, and organic solids. Secondary particulate matter is mostly finer PM10, whereas particles from dust sources tend to be the coarser fraction of PM10. (Ex. 200, p. 4.1-8.)

2. Project Description and Proposed Emissions

The HBRP would include the following new stationary sources of emissions: 10 dual fuel-fired reciprocating internal combustion engine-generator sets, each 16.3 MW (gross), 22,931 brake horsepower (bhp), Wärtsilä model 18V50DF, with each engine abated by a selective catalytic reduction (SCR) system and an oxidation catalyst. Natural gas/diesel pilot use would be limited to an equivalent of 6,447 operating hours per year, and proposed operation in diesel mode would be limited to no more than 1,000 engine-hours per year; one nominal 350 kilowatt (kW) Caterpillar model DM8149, diesel fuel-fired emergency engine-generator set (i.e., "black start" engine), 469 bhp; and one diesel fuel-fired emergency engine to power a fire water pump nominally rated at 210 bhp. (Ex. 200, p. 4.1-13.)

Under normal operations, each of the 10 Wärtsilä engines would fire natural gas with a diesel fuel pilot. The maximum heat input for each Wärtsilä engine would

be 143.6 million British thermal units (Btu) per hour (MMBtu/hr) of natural gas at the higher heating value (HHV) with a 0.8 MMBtu/hr diesel fuel pilot. (*Id.*)

There are circumstances when the project would be subject to natural gas curtailment as required by PG&E's California Public Utility Commission Gas Tariff Rule 14. During cold winter circumstances, the priority for natural gas consumption would be residential customers in the Humboldt County Region. The requirements of Rule 14 (C)(1)(b) outlines the steps PG&E would take due to local constraints such as in the Humboldt County area that affect Noncore End-Use Customers. The existing power plant and the proposed HBRP are Noncore End-Use Customers, and thus their natural-gas supply could be constrained. When forced to operate in diesel mode due to a natural gas curtailment, the engines would go into "emergency use" as defined in the statewide Airborne Toxic Control Measure. (Cal. Code Regs., tit. 17 § 93115.4(30); Ex. 200, p. 4.1-13.)

During natural gas curtailments and emergencies, any number of the Wärtsilä engines could be fired exclusively on diesel fuel. All engines would use ARB ultra-low-sulfur (0.0015 percent or 15 ppm sulfur by weight) diesel fuel. The emergency generator and fire pump engines would be U.S. EPA Tier 3 certified.

Shutdown of the existing HBPP Units 1 and 2 and MEPPs following commissioning of the new HBRP would provide emission reduction credits. Demolition of HBPP and other activities on the site related to decommissioning Unit 3 are not part of the proposed HBRP (see **Project Description**) but demolition of Units 1 & 2 is a reasonably foreseeable result from construction of HBRP. Emissions caused during the construction phase for HBRP, initial commissioning, and operation are described here. (Ex. 200, p. 4.1-14.)

3. Construction Emissions

Construction of HBRP is expected to take about 18 months preceded by one month of road construction and two months of site clearing. During the construction period, air emissions would be generated from the exhaust of heavy equipment and fugitive dust from removing existing structures on the site and from activity on unpaved surfaces. Site development would require minimal grading or earthmoving activities because both the site and the temporary construction parking areas along King Salmon Avenue are essentially flat. Construction activities would occur in the following main phases:

- Road construction (the new access road and potable water pipeline along the east side of the Intake Canal);
- Site preparation (demolition of the painting and sandblasting building, storage building and diesel tank basin from the HBRP project site; installation of drainage systems, underground utilities, and conduits; grading and backfilling; and installation of pilings);
- Foundation work;
- Installation of major mechanical and electrical equipment; and
- Construction/installation of major structures.

Estimates of the highest daily emissions and total annual emissions for the entire construction period are shown in **Air Quality Tables 4 and 5**, respectively.

AIR QUALITY Table 4
HBRP Estimated Maximum Daily Construction Emissions (lb/day)

Activity	NOx	ROC	PM10	PM2.5	CO	SOx
On-site Fugitive Dust	---	---	12.5	1.6	---	---
On-site Equipment Exhaust	111.9	27.5	3.4	3.4	321.4	0.2
Off-site Truck and Worker Travel	240.6	47.0	5.5	5.5	411.4	0.4
Off-site Barge Transport	253.9	312.8	14.7	14.7	0.2	36.8
Off-site Heavy Haul Tractor	12.6	0.4	0.4	0.4	4.6	<0.1
Total On-site Daily Emissions	**111.9**	**27.5**	**15.9**	**6.0**	**321.4**	**0.2**

(Ex. 1, Appendix 8.1D, Tables 8.1D-3 and 8.1D-4.)

AIR QUALITY Table 5
HBRP Estimated Annual Construction Emissions (tons/year, tpy)

Activity	NOx	ROC	PM10	PM2.5	CO	SOx
On-site Fugitive Dust	---	---	1.1	0.1	---	---
On-site Equipment Exhaust	10.9	2.3	0.3	0.3	26.9	<0.1
Off-site Truck and Worker Travel	13.5	3.6	0.3	0.3	31.7	<0.1
Off-site Barge Transport	2.5	0.4	0.2	0.2	3.1	<0.1
Off-site Heavy Haul Tractor	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Annual Emissions	**27.0**	**6.3**	**1.9**	**0.9**	**61.7**	**<0.1**

(Ex. 1, Appendix 8.1D, Table 8.1D-4.)

Particulate matter emissions from construction would cause a significant impact that warrants mitigation. Significant secondary impacts would also occur for PM10 and PM2.5 because construction-phase emissions of particulate matter precursors (including SO_x, NO_x, and ROC) would also contribute to violations of these standards. (Ex. 200, p. 4.1-23.)

The direct construction-phase impacts of NO_2, in conjunction with worst-case background conditions, would not cause new violations of the 1-hour or annual NO_2 ambient air quality standard. (*Id*.)

The direct construction-phase impacts of CO and SO_2 would not be significant because construction of the project would neither cause nor contribute to a violation of these standards. Mitigation for construction emissions of PM10, PM2.5, SO_x, NO_x, and ROC would be appropriate for reducing construction-phase impacts to PM10 and PM2.5. (*Id*.)

Because of the predicted significant particulate matter impacts, we adopt construction mitigation measures to reduce construction-phase impacts to a less than significant level. The use of oxidizing soot filters is a viable emissions control technology for all heavy diesel-powered construction equipment that does not use an ARB-certified low emission diesel engine. In addition, we will require

that, prior to beginning construction, the Applicant provide an Air Quality Construction Mitigation Plan (AQCMP) that specifically identifies mitigation measures to be employed by the Applicant to limit air quality impacts during construction. We adopt Conditions of Certification **AQ-SC1** through **AQ-SC5** to implement these requirements. These conditions are consistent with both the Applicant's proposed mitigation and the Conditions of Certification adopted in similar prior licensing cases. Compliance with these Conditions will substantially eliminate the potential for significant construction-phase air quality impacts. (Ex. 200, pp. 4.1-24 to 4.1-25.)

4. Initial Commissioning Emissions

New power generation facilities must go through initial firing and commissioning phases before becoming commercially available to generate electricity. During this period, emissions exceed those that occur during normal operations because of numerous start-ups and shutdowns, periods of low load operation, and other testing that is required before emission control systems are fine-tuned for optimum performance.

The NCUAQMD allows up to 100 hours of operation per engine without full emissions controls, limited to discrete commissioning activities that can only be properly executed without full operation of the SCR or oxidation catalyst systems. (Ex. 200, p. 4.1-15.)

Air Quality Table 6 presents the maximum allowed short-term emissions of NO_x, CO, and ROC. PM10, PM2.5, and SO_2 emissions are not included here since they are proportional to fuel use, and fuel use during commissioning is equal to that during full load operations.

AIR QUALITY Table 6
HBRP Maximum Initial Commissioning Emissions

Source	NOx	ROC	CO
10 Internal Combustion Engines (lb/hr)	323.3	86.6	197.2
10 Internal Combustion Engines (lb/day)	4,365	1,559	2,662

(Ex. 200, p. 4.1-16.)

The Applicant expects initial commissioning to involve no more than five of the dual-fuel engines simultaneously at any one time, for between 30 and 60 days. Performance and emission testing would follow, requiring an additional 45 to 90 days. (Ex. 1, § 8.1.2.7.6.) Short-term averaging periods are evaluated here because emissions would be limited by conducting most commissioning activities over the span of an 18-hour day with no other operations the remainder of the day. (Ex. 1, Table 8.1B-10.)

Up to 100 hours per engine of operation without full emission controls could occur during commissioning. Impacts due to maximum hourly emission rates of PM10, PM2.5, and SO_2 would occur under similar exhaust conditions as start-up modes, but PM10/PM2.5 impacts would be limited by the periods of non-operation that occur during the days of commissioning. The commissioning-phase impacts of CO and NO_2 would also be similar to those during routine operations. Accordingly, we find that the commissioning phase emissions would not create a substantial adverse environmental impact and, in any event, would be temporary in nature. (Ex. 200, p. 4.1-30.)

Condition of Certification **PUBLIC HEALTH-1** also delineates limited flexibility of diesel operating hours during the period of testing and commissioning. Expert testimony established that the additional diesel operations during commissioning will not result in a risk to the public. (6/17/08 RT 58-60.)

5. Operation Emissions

Criteria pollutant emissions from each of the ten 22,931 brake horsepower (bhp) Wärtsilä 18V50DF reciprocating internal combustion engines are based upon the Applicant's proposal of:

- dual-fuel firing capability in two modes: "natural gas/diesel pilot mode" with a small amount of diesel as a pilot injection fuel; and "diesel mode" firing exclusively liquid fuel;
- NO_x emissions in natural gas/diesel pilot mode controlled to 6 parts per million by volume, dry basis (ppmvd) corrected to 15 percent oxygen, averaged over any 3-hour period and 35 ppmvd in diesel mode;
- PM10 emissions of 3.6 lb/hr per engine in natural gas/diesel pilot mode (equivalent to 0.072 grams per horsepower-hour) up to 10.8 lb/hr per engine (0.214 g/bhp-hr) in diesel mode;
- sulfur emissions limited by the average natural gas sulfur content of less than 0.33 grains per 100 cubic feet at standard temperature and pressure (0.33 gr/100 scf) and use of ARB ultra-low-sulfur (0.0015 percent or 15 ppm sulfur by weight) diesel fuel;
- ammonia slip (NH_3) controlled to 10 ppmvd at 15 percent O_2 for any 3-hour period;
- operations limited by fuel and emissions limits equivalent to 6,547 full-load hours annually for each engine, with no more than 1,000 engine-hours annually in diesel mode (**AQ-138**), which provides an annual capacity factor of 74.74 percent; and
- startups and shutdowns limited to no more than 365 hours in startup (0.5 hr per event) or shutdown (8.5 minutes per event) for each engine per year.

The ability of the proposed internal combustion engines to start quickly and reach operating capacity within 30 minutes minimizes the variability of emissions that can typically occur when operating in a peaking mode. The ability to incrementally dispatch each of the 10 engines also minimizes the emissions that would occur during partial load operation. (Ex. 200, p. 4.1-17.)

Air Quality Table 7 lists the maximum emissions during any given day of operation from the proposed equipment. These emissions are based upon three startups of each Wärtsilä engine, with the remainder of the day with all 10 units in full load operation. The emergency standby generator would only be tested for 45 minutes per day, and the fire pump engine would not operate on any day when the power plant is in diesel mode. (Ex. 200, p. 4.1-19.)

AIR QUALITY Table 7
HBRP Maximum Daily Emissions (lb/day)

Source	NOx	ROC	PM10/ PM2.5	CO	SO_2
Natural Gas/Diesel Pilot Mode, Ten Wärtsilä Engines (maximum lb per day) *	1,360	1,608	864	1,589	97
Diesel Mode, Ten Wärtsilä Engines (maximum lb per day) *	9,103	2,183	2,592	2,219	52.8
Emergency Standby Generator (lb/day @ 45 min per day for testing)	2.69	0.31	0.04	0.49	0.01
Maximum Daily Limit in PDOC (Applicable to Ten Wärtsilä Engines)	**---**	**---**	**1,542**	**---**	**---**

(Ex. 200, p. 4.1-20.)

Particulate matter emissions during natural gas/diesel pilot mode and diesel mode operation would cause a significant impact that warrants additional mitigation because they will contribute to existing violations of PM10 ambient air quality standards and potentially cause new violations of the PM2.5 standards. Staff modeling using AERMOD shows that diesel mode operation would cause new violations of the daily PM10 standard; however, the Applicant and NCUAQMD modeling using AERMOD and CTSCREEN show that diesel mode operation would not cause daily PM10 impacts over 50 $\mu g/m^3$. Significant secondary impacts would also occur for PM10 and PM2.5 because emissions of particulate matter precursors (including SO_x, NO_x, and ROC) would also contribute to violations of these standards. (Ex. 200, pp.4.1-26 to 4.1-27.)

The direct impacts of NO_2, in conjunction with worst-case background conditions, would not cause new violations of the 1-hour or annual NO_2 ambient air quality standard provided that PG&E complies with the 392 lb/hr NO_x emission limit at all times. (Ex. 200, pp. 4.1-27.)

The direct impacts of CO and SO_2 would not be significant because operation of the project would neither cause nor contribute to a violation of these standards. Mitigation for emissions of PM10, PM2.5, SO_x, NO_x, and ROC during routine operation would be appropriate for reducing impacts to the PM10 and PM2.5 standards. (*Id.*)

6. Mitigation for PM10/PM2.5

HBRP is required by NCUAQMD rules to offset NO_x, ROC, and PM10 emission increases that exceed 25 tons per year. The Applicant proposes to use the actual emission reductions that would occur with shutdown of the existing HBPP and one certificate of Emission Reduction Credits (ERC) to offset project emissions of PM10/PM2.5. The District forecasts a net reduction in both NO_x and SO_x as a result of shutting down the existing HBPP, and Staff calculates a slight increase in SO_x (0.5 tons per year), because Staff does not count emergency use of fuel oil as part of normal operations in the baseline. Surplus NO_x reductions would offset ROC, PM10, and SO_x emission increases. **Air Quality Table 8** summarizes the reductions that would occur with the Applicant's proposed mitigation strategy. (Ex. 200, p. 4.1-27.)

AIR QUALITY Table 8
Summary of Mitigation for HBRP Annual Emissions (tpy)

Emission Reductions	NOx	ROC	PM10/ PM2.5	SOx
Reductions from HBPP Shutdown	892.5	23.4	24.9	3.8
Offsets Provided by HBPP Shutdown	154.3	23.4	24.9	---
Surplus Provided by HBPP Shutdown	738.2	---	---	3.8
Offsets Provided by ERC #07-098-12	---	1.6	6.4	---

Emission Mitigation Balance	NOx	ROC	PM10/ PM2.5	SOx
Proposed HBRP Emission Increases	179.3	190.9	119.8	4.3
Balance (Increases Minus Offsets)	25.0	165.9	88.6	4.3
Balance of NO_x	25.0	---	---	---
Balance of ROC in NOx-Equivalent (1:1)	165.9	---	---	---
Balance of PM10 in NOx-Equivalent (3.58:1)	317.2	---	---	---
Total Balance	508.1	---	---	4.3
Do Surplus Reductions Mitigate Increases?	Yes	Yes	Yes	Yes

(Ex. 200, p. 4.1-28.)

The amount of offsets credited to the shutdown of the HBPP is partly driven by PG&E's CPUC Gas Tariff Rule 14. Firing of liquid fuels during natural gas curtailments in the HBPP occur as part of normal operation of the existing power plant. Staff testified that that because of the requirement to switch fuels in Gas Tariff Rule 14, the operation of HBPP with liquid fuels does constitute normal operation. Staff, however, excludes from the baseline certain historic emissions from emergency circumstances, such as fuel-oil firing in Humboldt Bay Power Plant Unit 2 (HB2). During August and September 2006, the supply of natural gas was not available due to a rupture in the natural gas pipeline. (Ex. 200, p. 4.1-28.)

The actual emission reductions of NO_x achieved with shutdown of the existing HBPP would fully offset project NO_x emissions with surplus NO_x reductions (i.e., more reductions than increases) after considering the NO_x emission increases caused by HBRP. The Applicant proposes to use an "inter-pollutant trade" to exchange surplus NO_x reductions for project-related increases of ROC, PM10/PM2.5, and SO_x. Based on local meteorology, emission sources, and ambient air quality, the NCUAQMD and CARB developed an inter-pollutant trading ratio that allows exchange of 3.58 tons of NO_x reductions for each ton of proposed PM10/PM2.5 increases. (Ex. 206.) Reductions of NO_x would be exchanged for proposed ROC increases at a one-to-one ratio, and surplus NO_x reductions would also mitigate a small quantity (0.5 tons per year) of SO_x increases forecast by Staff. With the emission reductions shown in **Air Quality Table 8** and required by Condition of Certification **AQ-SC7**, the proposed PM10/PM2.5 and precursor emissions would be fully offset and project-related impacts to PM10/PM2.5 would be mitigated to a less than significant level. (Ex. 200, p. 4.1-28.)

7. Secondary Pollutant Impacts

The project's gaseous emissions of NO_x, SO_2, ROC, and ammonia (NH_3) are precursor pollutants that can contribute to the formation of secondary pollutants, ozone, PM10, and PM2.5. The process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Currently, there are no agency-recommended models or procedures for estimating ozone or particulate nitrate or sulfate formation from a single project. However, because of the known relationships of NO_x and ROC to ozone and of NO_x, SO_2, and NH_3 emissions to secondary PM10 and PM2.5 formation, it can be said that unmitigated emissions of these pollutants would contribute to higher ozone and PM10/PM2.5 levels in the region. Impacts of NO_x and ROC to ozone concentrations would not be significant because the region does not experience existing violations of the ozone ambient

standards, and the project is not likely to cause a new violation of ozone standards. Fully offsetting SO_x as a precursor to PM10/PM2.5 as described above, would similarly reduce the contribution of SO_x to secondary impacts to a less than significant level.

Ammonia is a particulate precursor but not a criteria pollutant. Reactive with sulfur and nitrogen compounds, ammonia is common in the atmosphere primarily from natural sources or as a byproduct of tailpipe controls on motor vehicles. Ammonia particulate forms more readily with sulfates than with nitrates. Fully offsetting NO_x and SO_x limits the formation of particulate nitrates and sulfates, and the secondary pollutant impacts would be reduced to a less than significant level because compliance with a 10 parts per million, volumetric dry (ppmvd) ammonia slip limit would control NH_3 emissions to the extent feasible. (Ex. 200, p. 4.1-29.)

8. Fumigation Impacts

Shoreline fumigation occurs when dense, cool air over water moves onshore and falls, displacing warmer, lighter air over land. The surface and the air over land both tend to heat and cool more rapidly than over water. During an inland sea breeze, the unstable air over land gradually increases in depth with inland distance. The boundary between the stable air over the water and the unstable air over the land and the wind speed determine if a plume is likely to cross from the stable cooler air and cause elevated ground-level concentrations on the land. Shoreline fumigation was assumed to persist for up to three hours. (*Id.*)

There is the potential that higher short-term concentrations of pollutants may occur during fumigation conditions. Fumigation conditions are generally short-term in nature and only compared to standards shorter than 24 hours. The Applicant analyzed the air quality impacts of HBRP under shoreline fumigation conditions and thermal inversion breakup conditions.

Thermal inversion breakup fumigation occurs when a stable layer of air lies a short distance above the release point of a plume and unstable air lies below. Under these conditions, an exhaust plume may be drawn to the ground, causing high ground-level pollutant concentrations. Inversion breakup fumigation was assumed to last 90 minutes. (*Id.*)

The analysis of fumigation impacts considers routine emissions of 10 engines simultaneously under any mode of operation (except startups) using the SCREEN3 Model (version 96043). (Ex. 1, Table 8.1B-6 and Table 8.1B-7.) The maximum impacts under shoreline fumigation conditions would occur approximately 0.5 km from the HBRP stacks, and the maximum impacts under inversion breakup fumigation conditions would occur approximately 7 to 9 km from the HBRP stacks. Although the location of maximum impact would change, the short-term project impacts would not exceed the impacts for routine operation. Therefore, no additional mitigation is required for fumigation impacts. (Ex. 200, pp.4.1-29 to 4.1-30.)

9. Visibility Impacts

A visibility analysis of the project's gaseous emissions is required for federal Prevention of Significant Deterioration (PSD) review. The Class I areas near HBRP are managed by either the U.S. Forest Service (USFS) or the National Park Service (NPS). The nearest Class I areas and the associated Federal Land Managers (FLM) and distances, are as follows:

- Redwood National Park, NPS, 26 miles (42 km);
- Marble Mountain Wilderness Area, USFS, 62 miles (100 km); and
- Yolla Bolly Wilderness Area, USFS, 71 miles (114 km).

The Applicant prepared a Class I Impacts Analysis that included a visibility analysis for the nearest Class I areas. The visibility analysis includes two

components: (1) a Regional haze analysis to determine the change in light extinction in the Class I areas, and (2) a coherent visible plume impact analysis. The NPS conducted an independent analysis (August 29, 2007). The USFS provided comments on the analysis (October 17, 2007) based on 50 hours per engine per year in diesel mode and concluded there would be no perceptible plume impacts at the USFS wilderness areas. The NPS confirmed (November 16, 2007) that up to 100 hours of burning diesel fuel per engine each year would not constitute a major concern for increased air quality impacts at Redwood National Park. Considering the emission reductions with the HBPP shut-down, the Regional haze analysis did not warrant independent re-analysis by the FLMs. The opinion from the FLMs is that HBRP would not cause significant visibility impacts. (Ex. 200, p. 4.1-31.)

10. Cumulative Impacts and Mitigation

Criteria pollutants have impacts that are cumulative by their nature. New sources contribute to violations of criteria pollutant standards because of elevated background conditions. Air districts attempt to reduce background criteria pollutant levels by adopting attainment plans, which are multi-faceted programmatic approaches to attainment. Attainment plans typically include new source review requirements that provide offsets and use Best Available Control Technology, combined with more stringent emissions controls on existing sources.

The NCUAQMD adopted a PM10 Attainment Plan on May 11, 1995, that identified a need for substantial reductions in Eureka-area PM10 emissions from 1991 levels in order to eventually achieve attainment of the 50 $\mu g/m^3$ California ambient air quality standard. Compliance of the HBRP with the NCUAQMD New Source Review rule would ensure that no net emission increase occurs after considering inter-pollutant trades, which would ensure that the project would be consistent with the air quality management plans. (Ex. 200, p. 4.1-32.)

Reasonably foreseeable future projects in the area are those that are either currently under construction or in the process of being approved by a local air district or municipality. Projects that have not yet entered the approval process do not qualify as "foreseeable" because they lack the detailed information needed to conduct this analysis. Sources that are presently operational are included in the background concentrations. No foreseeable future projects that would emit more than 10 pounds per day within six miles of HBRP were identified by NCUAQMD when this information was requested. (Ex. 1, Appendix 8.1F; Ex. 5; Ex. 7.)

11. Greenhouse Gas Emissions

There is general scientific consensus that climate change is occurring and that human activity contributes in some measure (perhaps substantially) to that change. Man-made emissions of greenhouse gases, if not sufficiently curtailed, are likely to contribute further to continued increases in temperature that may result in catastrophic consequences. Indeed, the California Legislature finds that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Health & Safety. Code, § 38500.)

In 2006, California enacted the California Global Warming Solutions Act of 2006. (AB 32.) It requires the CARB to adopt standards that will reduce statewide GHG emissions to statewide greenhouse gases (GHG) emissions levels in 1990, with such reductions to be achieved by 2020. Governor Schwarzenegger has issued an Executive Order to achieve 80 percent below those levels by 2050. To achieve this, CARB has a mandate to define the 1990 emissions level and achieve the maximum technologically feasible and cost-effective GHG emission reductions.

The Energy Commission and the Public Utilities Commission are providing recommendations to CARB for reducing emissions in the electricity and natural gas sectors. The agencies recommend a three-pronged approach: (1) require all retail providers in California to achieve all cost-effective energy efficiency; (2) surpass the current 20 percent renewable portfolio standard requirement; and (3) develop a multi-sector cap and trade system to obtain the remaining reductions in the most cost-effective manner. To date, the agencies have issued two joint recommendation reports, the first involving the tracking and reporting of emissions and the second involving the point of regulation.

The CARB adopted early action GHG reduction measures in October 2007 and will establish statewide emissions caps by economic "sectors" in 2008. By January 1, 2009, ARB will adopt a scoping plan that will identify how emission reductions will be achieved from significant sources of GHG via regulations, market mechanisms, and other actions. (Ex. 200, p. 4.1-33.)

a. Construction

Construction of industrial facilities such as power plants requires coordination of numerous equipment and personnel. The concentrated on-site activities result in short-term, unavoidable increases in vehicle and equipment emissions that include greenhouse gases. Measures designed to reduce criteria air pollutant emissions from construction activities will also reduce greenhouse gas emissions. The construction conditions of certification we have adopted include control measures such as limiting idling times and requiring, as appropriate, equipment that meet the latest emissions standards. Newer equipment is not only cleaner, but is also compatible with low-carbon fuel (*e.g.,* bio-diesel and ethanol) mandates that will likely be part of the CARB regulations to reduce GHG from vehicle and equipment emission. (Ex. 200, p. 4.1-35.)

b. Operations

The proposed HBRP's primary fuel is natural gas ignited by a small amount of diesel pilot fuel. The engines can switch for a limited number of hours to one hundred percent diesel fuel during natural gas shortages or supply interruptions. Additionally, the onsite emergency fire pump and generator are diesel fired; the GHG emissions from testing these engines are not included in the totals at this time although they may be subject to reporting requirements. (*Id.*)

Air Quality Table AQ-9 shows what the proposed project, as permitted, could potentially emit in greenhouse gases on an annual basis. All emissions are converted to CO_2-equivalent (CO_2-eq) and totaled. Electricity generation GHG emissions are dominated by CO_2 emissions from the carbon-based fuels; other sources of GHG are small and also are more likely to be easily controlled or reused/recycled, but are nevertheless documented here as some of the compounds have very large relative global warming potentials.

The proposed project could, on an annual basis, emit over a half a million metric tons of CO_2-eq per year if operated at its maximum permitted level, but this is unlikely. This is because the Humboldt region is geographically and electrically isolated and the new project, as a replacement of the existing one, will likely be operated similarly to the existing power plant. Currently the existing plant is operated to meet local demand and provide voltage support to allow electricity imports over the existing transmission line from the rest of the PG&E system. (Ex. 200, p. 4.1-36.)

AIR QUALITY Table AQ-9
HBRP, Estimated Potential Greenhouse Gas Emissions

	Project Emissions (metric tons [1] per year)	Global Warming Potential [2]	CO_2 Equivalent (metric tons per year)
Carbon Dioxide (CO_2)	501,246	1	501,246
Methane (CH_4)	127	21	2,665
Nitrous Oxide (N_2O)	1	310	310
Hexafloride (SF_6)	0	23,900	0
Hydrofluorocarbons (HFCs)	0	--- [3]	0
perfluorocarbons (PFCs)	0	7,850 [4]	0
Total Project GHG emissions – metric tons CO_2 Equivalent per year			504,223
Total Project MWh per year			1,042,385
Project CO_2 Emissions Performance - mt CO_2/MWh			0.482
Project GHG Emissions Performance - mt CO_2-eq/MWh			0.484

1. One metric ton (mt) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
2. The global warming potential (GWP) is a measure of the chemicals' warming properties and lifetime in the atmosphere relative to CO_2. The value shown is for 100 years. Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR 1996). In 2001, the IPCC published its Third Assessment Report (TAR), which adjusted the GWPs to reflect new information on atmospheric lifetimes and an improved calculation of the radiative forcing of carbon dioxide. However, SAR GWPs are still used by international convention and the U.S. to maintain the value of the carbon dioxide "currency." To maintain consistency with international practice, the California Registry requires participants to use GWPs from the SAR for calculating their emissions inventory.
3. Can vary from 150 to 10,000, depending on the specific HFC.
4. This figure is an average GWP for the two PFCs, CF_4 and C_2F_6. (Ex. 200, p. 4.1-36.)

Air Quality Table AQ-10 compares greenhouse gases from the proposed project to the existing units on an annual average basis using past average electricity production to calculate what electricity the proposed project might reasonably generate and therefore, what amount of CO_2 it will produce. As **Air Quality Table AQ-10** shows, the HBRP is more efficient than the older and higher emitting electricity plant that it would replace. On average, the proposed project would emit 30 percent less CO_2 per MWh and per year than the existing units. It would significantly reduce GHG emissions that currently result from generation at the existing facility.

AIR QUALITY Table AQ-10
Comparison of Existing HBPP and Proposed HBRP CO_2 Emissions

Year	MWh	Existing Units GHG Emissions (mt CO_2)	Proposed Project Comparative GHG Emissions (mt CO_2)	Potential Decrease
2003	244,810	182,027	117,998	35.2%
2004	394,596	270,522	190,195	29.7%
2005	462,274	308,021	222,816	27.7%
2006	462,967	315,050	223,150	29.2%
Averages	391,162	268,905	188,540	29.9%

(Ex. 200, p. 4.1-37.)

Given the baseline of the existing plant's emissions, replacing the existing plant and operating the more efficient new project at similar levels will result in substantially fewer GHG emissions at the site. Consequently, the new project would not cause a cumulatively considerable increase in GHG emissions and thus, no significant cumulative impact.

Moreover, this project furthers the state's goal to reduce the amount of natural gas used by electricity generation and, thus, greenhouse gas emissions. We therefore find that the HBRP's replacement of the existing plant causes no significant cumulative impact and furthers the state's strategy to reduce fuel use and GHG emissions. (Ex. 200, pp. 4.1-37 to 4.1-38.)

Ultimately, CARB's AB 32 regulations will address both the degree of electricity generation emissions reductions, and the method by which those reductions will be achieved through the programmatic approach currently under its development. That regulatory approach will presumably address emissions not only from the newer, more efficient, and lower emitting facilities licensed by the Commission, but also the older, higher-emitting facilities not subject to any GHG reduction standard that this agency could impose. This programmatic approach is necessary to have an effective GHG reduction program for the electricity

sector rather than one that merely requires reliance on out-of-state coal plants ("leakage") or older "dirtier" facilities. (Ex. 200, p. 4.1-40.)

To facilitate CARB's future regulatory scheme, we adopt Condition of Certification **AQ-SC8**, which requires the project owner to report the quantities of relevant GHGs emitted as a result of electric power production until such time that AB 32 is implemented and its reporting requirements are in force. Compliance with **AQ-SC8** will enable the project to be consistent with the policies described above and the potential regulations, and provide the information to demonstrate compliance with the emission performance standard (EPS). The GHG emissions to be reported in **AQ-SC8** are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs and PFCs emissions that are directly associated with the production and transmission of electric power. (*Id.*)

The HBRP project would replace a less-efficient existing facility with lower emissions of CO_2/MWh and likely lower net emissions. Accordingly, it would not result in a significant cumulative GHG impact. Moreover, even if it were not replacing this existing facility, it would be speculative to conclude that the project would result in a cumulatively significant GHG impact. AB 32 emphasizes that GHG emissions reductions must be "big picture" reductions that do not lead to "leakage" of such reductions to other states or countries. If a gas-fired power plant is not built in California, electricity to serve the load will come from another generating source. That could be renewable generation like wind or solar, but it could also be from higher carbon emitting sources such as out-of-state coal imports that are still a significant part of the energy that serves California.

12. Compliance with LORS

The FSA contains a discussion of the proposed project's compliance with federal, state and local LORS. (Ex. 200, p. 4.1-41 to 4.1-44.) The evidence shows that the proposed project presents no significant unmitigated air quality impacts and

would likely be in compliance with LORS. The emissions reductions from the shutdown of HBPP (**AQ-110**) ensure the project will comply with NCUAQMD Rule 110 which requires emissions offsets. We adopt Condition of Certification **AQ-SC7** to ensure that offsets are fully provided.

FINDINGS AND CONCLUSIONS

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

1. The proposed HBRP is located within the jurisdiction of the North Coast Unified Air Quality Management District.

2. The project will employ the best available technology to control emissions of criteria pollutants.

3. Project emissions will be fully offset.

4. Use of emission reduction credits in this case is appropriate, and is consistent with applicable federal and state emission control strategies.

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

6. The project's construction and operation-related impacts are mitigated to below a level of significance by measures identified in the Conditions of Certification.

7. The record contains an adequate analysis of the project's contributions to cumulative air quality impacts and greenhouse gases.

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

9. Implementation of the Conditions of Certification will ensure that the project complies with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of Appendix A of this Decision.

The Commission therefore concludes that the mitigation measures imposed are sufficient to ensure that the HBRP will conform with all applicable laws,

ordinances, regulations, and standards relating to air quality as set forth in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

AQ-SC1 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 conditions **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 Energy Commission 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. The AQCMM and all delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide, for approval, an AQCMP that details the steps to be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **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 CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance.

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 purposes of preventing all fugitive dust plumes from leaving the project site and linear facility routes. 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 may be either reduced or eliminated during periods of precipitation.

B. No vehicle shall exceed 15 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 free of dirt prior to entering paved roadways.

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

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

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

H. Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (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 run-off 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 treated with appropriate dust suppressant compounds.

L. All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions

M. shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks to provide at least two feet of freeboard.

N. 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 include in the MCR: (1) a summary of all actions taken to maintain compliance with this condition; (2) copies of any complaints filed with the air 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-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 with the potential to be transported off the project site, 200 feet beyond the centerline of the construction of linear facilities, or within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not providing effective mitigation. The AQCMM or delegate shall then 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 CPM 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 CPM before that time.

Verification: The AQCMP shall include a section detailing how additional mitigation measures will be accomplished within specified time limits.

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 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 have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

B. All construction diesel engines with a rating of 100 hp or higher 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 that 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 diesel particulate filter (DPF) 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" for the following, as well as other, reasons.

   1. There is no available DPF that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

   2. The construction equipment is intended to be on site for 10 days or less.

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

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

   1. The use of the soot filter is excessively reducing the normal availability of the construction equipment due to increased down

time for maintenance, and/or reduced power output due to an excessive increase in back pressure.

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 implementation of the termination.

D. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
E. All diesel heavy construction equipment shall not 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 the 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 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 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 project owner shall provide emission reductions in the form of "actual emission reductions" (calculated per NCUAQMD Rule 110) or emission reduction credits (ERCs) to offset NO_x, ROC, PM10, and SO_x emissions. The project owner shall demonstrate that the reductions are provided in the form and amount required by the District.

The project owner shall surrender the ERCs from among those that are listed in the table below or a modified list, as allowed by this condition.

If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions to the listed credits.

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, and that the requested change(s) will not cause the project to result in a significant environmental impact. The District must also confirm that each requested change is consistent with applicable federal and state laws and Regulations.

Emission Reduction Certificate Number, Location	NOx (tpy)	ROC (tpy)	PM10 (tpy)	SOx (tpy)
ERC #07-098-12 Eel River Sawmills, Redcrest, CA	0	1.6	6.4	0
Proposed Offsets Provided by HBPP Shutdown	154.3	23.4	24.9	0
Surplus Reductions from HBPP Needed to Mitigate HBRP	508.1	0	0	4.3

Verification: The project owner shall submit to the CPM records showing that the project's offset requirements have been met prior to initiating construction. If the CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and Commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC8 Until the ARB enacts a program to report and restrict GHG emissions from the electricity sector under the California Global Warming Solutions Act of 2006 (AB 32), 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. When CARB's GHG reporting regulations become effective, the project owner shall comply with the requirements of that GHG program, and the reporting requirements of this condition of certification shall cease, provided that the Energy Commission continues to receive the data required by the CARB program. Until then, the project owner shall do what is described in the following paragraphs.

The project owner shall maintain a record of fuel 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 (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 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 required by the ARB under the California Global Warming Solutions Act of 2006 (AB 32) and, until such requirements are enacted, as a CO_2 equivalent, by the project owner to a climate action registry approved by the CPM, or to the CPM annually as part of the operational report required (**AQ-SC9**) or the annual Air Quality Report.

AQ-SC9 The project owner shall submit to the CPM semi-annual operation reports that include operational and emissions information as necessary to demonstrate compliance with the conditions of certification. The semi-annual operation report shall specifically note or highlight incidences of noncompliance.

Verification: The project owner shall submit semi-annual operation reports to the CPM and the Air Pollution Control Officer (APCO) no later than 30 days following December 31 and June 30 of each calendar year. The report for following December 31 can be an annual compliance summary for the preceding year. This information shall be maintained on site for a minimum of five years and shall be provided to the CPM and District personnel upon request.

FEDERALLY ENFORCEABLE GENERAL REQUIREMENTS

Title V Permit Modifications and Renewal

AQ-1 This Permit shall serve as the Prevention of Significant Deterioration preconstruction permit for the sources identified herein, and is issued pursuant to 40 Code of Federal Regulations (C.F.R.), Part 70 and Regulation V of the Rules and Regulations of the North Coast Unified Air Quality Management District. [NCUAQMD Reg 5 Rule 405(b)] [NCUAQMD Reg V Rule 502 § 2.2 (5/19/05)] [40 C.F.R. 70.5(a)(1)(iii).]

Verification: No verification needed.

AQ-2 This permit shall be valid for a period not to exceed 545 days from the date of issuance. Upon completion of the construction and the commissioning phase for the internal reciprocating engines, the Permittee shall submit a Title V Permit to Operate application to the Air Pollution Control Officer. [NCUAQMD Reg 5 Rule 405(b)] [NCUAQMD Reg V Rule 502 § 2.2 (5/19/05)] [40 C.F.R. 70.5(a)(1)(iii).]

Verification: The project owner shall submit to both the District and CPM the Title V Permit to operate application upon completion of commissioning.

AQ-3 If modifications to the permit are necessary, the Permittee of the Title V source permitted herein shall submit to the Air Pollution Control Officer a complete Title V permit application for an Administrative, Minor, or Significant Title V permit modification. The application shall not be submitted prior to receiving any required preconstruction permit from the NCUAQMD. [NCUAQMD Reg 5 Rule 405(c)] [NCUAQMD Reg V Rule 502 § 2.3 (5/19/05)] [40 C.F.R. 70.5(a)(1)(ii).]

Verification: The project owner shall submit to both the District and CPM the Title V modification application after receiving applicable preconstruction permit(s).

AQ-4 The Permittee shall submit to the Air Pollution Control Officer timely updates to the Title V application as new requirements become applicable to the source and in no event less than quarterly (i.e., every three months). [40 C.F.R. 70.5(b).]

Verification: The project owner shall submit to both the District and CPM the Title V application updates as needed.

AQ-5 A Permittee's responsible official shall promptly provide additional information in writing to the Air Pollution Control Officer upon discovery of submittal of any inaccurate information as part of the application or as a supplement thereto; or of any additional relevant facts previously omitted which are needed for accurate analysis of the application; and including inaccurate information known, or which should have been known or should be known, by the Permittee(s). [NCUAQMD Reg 5 Rule 420(c)] [NCUAQMD Reg V Rule 502 §§ 5.1, 5.3, 5.4 (5/19/05)] [40 C.F.R. 70.5(a)(2) and (b).]

Verification: The project owner shall submit to both the District and CPM the Title V information as needed.

AQ-6 Upon written request of the Air Pollution Control Officer, the Permittee's responsible official shall supplement any complete application with additional information within the time frame specified by the Air Pollution Control Officer. [NCUAQMD Reg 5 Rule 420(b)] [NCUAQMD Reg V Rule 502 § 5.2 (5/19/05)] [40 C.F.R. 70.5(a)(2) and (b).]

Verification: The project owner shall submit to both the District and CPM the Title V additional information as needed.

AQ-7 PSD preconstruction permit expiration terminates the Permittee's right to operate the stationary sources itemized in this permit unless a timely and complete Title V permit application has been submitted, in which case the existing PSD preconstruction permit will remain in effect until the Title V permit has been issued or denied. In order to be considered timely, a complete Title V permit application must be submitted prior to the expiration of the PSD preconstruction permit. [NCUAQMD Reg 5 Rule 400(b)(c) and (d)] [NCUAQMD Reg V Rule 502 § 1.2, 1.3, and 1.4] [40 C.F.R. 70.7(b) and (e)(2) (v).]

Verification: The project owner shall submit to both the District and CPM the Title V application prior to expiration of the applicable PSD preconstruction permit.

AQ-8 When submitting an application for a permit pursuant to Regulation 5, the Permittee's responsible official shall include the following information: A certification by a responsible official of all reports and other documents submitted for permit application; compliance progress reports at least every 6 months for, and submitted no later than 30 days after, the periods January 1 through June 30 and July 1

through December 31 of each year; statements on compliance status with any applicable enhanced monitoring; and annual compliance plans, no later than January 30 of each year, which shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. [NCUAQMD Reg 5 Rule 415(m)] [NCUAQMD Reg V Rule 502 § 4.13 (5/19/05)] [40 C.F.R. 70.5(c)(9) and (d).]

Verification: The project owner shall submit to both the District and CPM the Title V application as needed.

AQ-9 With the exception of acid rain units subject to Title IV of the Clean Air Act and solid waste incinerators subject to section 129(e) of the Clean Air Act, each permit issued pursuant to NCUAQMD Regulation 5 to operate for any source shall include a condition for a fixed term not to exceed five years from the time of issuance. A permit to operate for an acid rain unit shall have a fixed permit term of five years. A permit to operate for a solid waste incinerator shall have a permit term of 12 years; however, the permit shall be reviewed at least every 5 years. [NCUAQMD Reg 5 Rule 660] [NCUAQMD Reg V Rule 504 § 11 (5/19/05)] [40 C.F.R. 70.6(a)(2).]

Verification: No verification needed.

COMPLIANCE

AQ-10 The Permittee shall comply with all conditions of the Title V permit. [NCUAQMD Reg 5 Rule 610(g) (1)] [NCUAQMD Reg V Rule 504 § 2.7 (5/19/05).]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-11 Compliance with the conditions of this Title V permit shall be deemed in compliance with all applicable requirements identified in the Title V permit. [40 C.F.R. 70.6(f).]

Verification: No verification needed.

AQ-12 The Permittee may not assert or use as a defense, expressly, impliedly, or by operation of law or past practice, in any enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Title V permit. [NCUAQMD Reg 5 Rule 610(g) (4)] [NCUAQMD Reg V Rule 504 § 2.7.4 (5/19/05).]

Verification: No verification needed.

AQ-13 This Title V permit may be modified, revoked, reopened, and reissued or terminated for cause. [NCUAQMD Reg 5 Rule 570(a) and (b)] [NCUAQMD Reg 5 Rule 503 § 9 (5/19/05).]

Verification: No verification needed.

AQ-14 The Permittee shall furnish to the Air Pollution Control Officer, within 10 (ten) days of the request, any information that the Air Pollution Control Officer may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with this Title V permit. Upon request, the permittee shall also furnish to the Air Pollution Control Officer copies of records required to be kept by conditions of this permit. For information claimed to be confidential, the permittee may furnish such records directly to the EPA along with a claim of confidentiality. [40 C.F.R. 70.6(a)(6)(v).]

Verification: The project owner shall submit to both the District and CPM the Title V permit compliance information within ten days of request by the Air Pollution Control Officer.

AQ-15 Noncompliance with any federally enforceable requirement in this Title V permit is grounds for Title V permit termination, revocation and reissuance, modification, enforcement action, or denial of the Title V permit renewal application. [NCUAQMD Reg 5 Rule 610(g) (3)] [NCUAQMD Reg 5 Rule 504 § 2.7.3 (5/19/05).]

Verification: No verification needed.

AQ-16 A pending Title V permit action (e.g. a proposed permit revision) or notification of anticipated noncompliance does not stay any permit condition. [NCUAQMD Reg 5 Rule 610(g) (5)] [NCUAQMD Reg 5 Rule 504 § 2.7.5 (5/19/05).]

Verification: No verification needed.

AQ-17 This Title V permit does not convey any property rights of any sort or any exclusive privilege. [NCUAQMD Reg 5 Rule 610(g) (2)] [NCUAQMD Reg V Rule 504 § 2.7.2 (5/19/05).]

Verification: No verification needed.

AQ-18 Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the Air Pollution Control Officer or an authorized representative to perform all of the following:

A. Enter upon the stationary source's premises where this source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Title V permit;

C. Inspect at reasonable times, the stationary source, equipment (including monitoring and air pollution control equipment), practices and operations regulated or required under this Title V permit; and

D. As authorized by the Federal Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the Title V permit conditions or applicable federal requirements. [NCUAQMD Reg 5 Rule 610(e)] [NCUAQMD Reg V Rule 504 § 2.5 (5/19/05).]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

REPORTS AND RECORDKEEPING

AQ-19 Monitoring Reports

A. The Permittee shall submit to the Air Pollution Control Officer at least once every six months, unless required more frequently by an applicable requirement, reports of all required monitoring set out in this Title V permit.

B. The reporting periods for this permit shall be for the six month periods January 1 through June 30 and July 1 through December 31. The reports shall be submitted by July 30 and January 30 of each year respectively.

C. Any and all instances of deviations from Title V permit conditions must be clearly identified in such reports. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry; the statements and information in the document are true, accurate and complete. [NCUAQMD Reg 5 Rules 460 and 625] [NCUAQMD Reg V Rule 502 § 11 and Rule 504 § 5 and (5/19/05)] [40 C.F.R. 70.6(a)(3)(ii) and (iii).]

Verification: The project owner shall submit to the CPM and APCO the semi-annual operational reports that include monitoring results (**AQ-SC9**).

AQ-20 Compliance Reports

A. The Permittee shall submit to the Air Pollution Control Officer and to U.S. EPA (Air-3, U.S. EPA, Region IX) on an annual basis, unless required more frequently by additional applicable federal requirements, a certification of compliance by the Permittee's responsible official with all terms and conditions contained in the Title V permit, including emission limitations, standards and work practices.

B. The reporting period for this permit shall be January 1 through December 31. The report shall be submitted by January 30 of each year. The initial report shall be for the period January 1 2009 through December 31, 2009 and shall be submitted by March 1, 2010.

C. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry the statements and information in the document are true, accurate and complete.

D. The compliance certification shall include the following:

1. The identification of each term or condition of the Title V permit that is the basis of the certification.

2. The method(s) used for determining the compliance status of the source, currently and over the reporting period, and whether such method(s) provides continuous or intermittent data.

3. The status of compliance with the terms and conditions of the Title V permit for the period covered by the certification, based on the method designated in Section D (ii) of this condition.

4. Such other facts as the Air Pollution Control Officer may require in order to determine the compliance status of the source.

5. A method for monitoring the compliance of the stationary source with its emissions limitations, standards and work practices. [NCUAQMD Reg 5 Rule 650] [NCUAQMD Reg V Rule 504 § 10 (5/19/05)] [40 C.F.R. 70.6(b)(5).]

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include compliance results (**AQ-SC9**).

AQ-21 The Permittee shall report within 24 hours of detection any deviation from a federally enforceable Title V permit condition not attributable to an emergency. In order to fulfill the reporting requirement of this condition, the Permittee shall notify the Air Pollution Control Officer by telephone followed by a written statement describing the nature of the deviation from the federally enforceable permit condition. [NCUAQMD Reg 5 Rule 625] [NCUAQMD Reg V Rule 504 Section 5 (5/19/05)] [40 C.F.R. 70.6(a)(3)(iii).]

Verification: The project owner shall submit to both the District and CPM the notification within 24 hours after determining any deviation from a federally enforceable Title V permit condition.

AQ-22 All monitoring data and support information required by a federally enforceable applicable requirement must be kept by the stationary source for a period of 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the federally enforceable applicable requirement in the Title V permit. [NCUAQMD Reg. 5 Rules 455 and 615]

[NCUAQMD Reg. V Rule 502 Section 10 and Rule 504 Section 3 (5/19/05)] [40 C.F.R. 70.6(a)(3)(ii).]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission upon request.

PUBLIC NUISANCE

AQ-23 The Permittee(s) shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property. [NCUAQMD Reg. 1 Rule 400(a).]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission upon request.

VISIBLE EMISSIONS

AQ-24 The owner, operator or Permittee of this Title V source shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant, other than uncombined water vapor, for a period or periods more than three minutes in any one hour which is:

A. As dark or darker in shade as that designated No. 2 (6-minute average), on the Ringelmann Chart, as published by the United States Bureau of Mines, or

B. Of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring system to a degree equal to or greater than No. 2 on the Ringelmann Chart. [NCUAQMD Rule 410] [NCUAQMD Reg. I Rule 104 Section 2 (5/19/05).]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission upon request.

PARTICULATE MATTER

AQ-25 A. General Combustion Sources

The Permittee of this Title V source shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.46 grams per standard cubic meter (0.20 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS Rule 490, as applicable.

B. Steam Generating Units

The Permittee of this Title V source shall not discharge particulate matter into the atmosphere from any steam generating unit, installed or modified after July 1, 1976, in excess of 0.23 grams per standard cubic meter (0.10 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS Rule 490.

C. Steam Generating Utility Power Plants

Notwithstanding the limitations set out above, no steam generating power plants which produce electric power for sale to any public utility shall discharge particulate matter into the atmosphere in excess of 0.10 pounds per million BTU heat input or any other specific applicable permit limitation, whichever is the more restrictive emission condition.

D. Non-Combustion Sources

The Permittee of this Title V source shall not discharge particulate matter into the atmosphere from any non-combustion source in excess of 0.46 grams per actual cubic meter (0.20 grains per cubic foot) of exhaust gas or in total quantities in excess of the maximum allowable process weight rate as follows:

TABLE I

ALLOWABLE RATE OF EMISSION BASED ON PROCESS WEIGHT RATE					
Process Weight Rate		Rate of Emission	Process Weight Rate		Rate of Emission
Lb/Hr	Kg/Hr	Lb/Hr	Lb/Hr	Kg/Hr	Lb/Hr
100	45	0.55	6,000	2,720	8.6
200	92	0.88	7,000	3,380	9.5
400	183	1.4	8,000	3,680	10.4
600	275	1.83	9,000	4,134	11.2
800	377	2.22	10,000	4,540	12.0
1,000	454	2.58	12,000	5,460	13.6
1,500	681	3.38	16,000	7,260	16.5
2,000	920	4.1	18,000	8,220	17.9
2,500	1,147	4.76	20,000	9,070	19.2
3,000	1,362	5.38	30,000	13,600	25.2
3,500	1,690	5.96	40,000	18,100	30.5
4,000	1,840	6.52	50,000	22,700	35.4
5,000	2,300	7.58	60,000	27,200	40.0

Where the process weight per hour is between two listed figures, such process weight and maximum allowable particulate emission per hour shall be interpolated linearly. The total process weight of all similar process operations located at a single plant or of similar multiple plants located on a single premise, shall be used for determining the maximum allowable particulate emission from the combination of such operations. [NCUAQMD Rule 420] [NCUAQMD Reg. I Rule 104 (5/19/05).]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with Condition **AQ-164**.

AQ-26 The Permittee of this Title V source shall not handle, transport or store or allow open storage of materials in such a manner which allows or has the potential to allow unnecessary amounts of particulate matter to become airborne. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, the following:

A. Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.

B. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.

C. Conduct agricultural practices in such a manner as to minimize the creation of airborne dust.

D. The use of water or approved dust surfactants for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.

E. The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.

F. The paving of roadways and their maintenance in a clean condition.

G. The prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means. [NCUAQMD Rule 430] [NCUAQMD Reg. I Rule 104 Section 4 (5/19/05).]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission upon request.

SULFUR COMPOUNDS

AQ-27 The owner(s), operator(s) or Permittee(s) of this Title V source shall not discharge into the atmosphere from any single source of emissions whatsoever sulfur oxides, calculated as sulfur dioxide (SO2) in excess of 1,000 ppm; or in excess of the specific source emission limitations of Federal New Source Performance Standards, as applicable. [NCUAQMD Rule 440] [NCUAQMD Reg. I Rule 104 Section 5 (5/19/05).]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with Condition **AQ-164**.

OPEN BURNING

AQ-28 The Permittee of this Title V source shall not ignite or cause to be ignited or suffer, allow or maintain any open outdoor fire for the disposal of rubber, petroleum or plastic wastes, demolition debris, tires, tar paper, wood waste, asphalt shingles, linoleum, cloth, household garbage or other combustible refuse; or for metal salvage or burning of motor vehicle bodies. No other open burning shall occur without the owner, operator(s) or Permittee having first obtained a Coordinated Authorized Burn Permit from the Air Pollution Control Officer. [NCUAQMD Reg. 2 Rules 200 & 201.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

EQUIPMENT BREAKDOWNS

AQ-29 The Permittee shall comply with the emergency provisions contained in all applicable federal requirements.

A. Within two weeks of an emergency event, the owner(s), operator(s) or Permittee's responsible official shall submit to the Air Pollution Control Officer a signed contemporaneous log or other relevant evidence which demonstrates that:

1. An emergency occurred.

2. Identification of the cause(s) of the emergency.

3. The facility was being properly operated at the time of the emergency.

4. Identification of each and every step taken to minimize the emissions resulting from the emergency.

5. Within two working days of the emergency event, the Permittee shall notify the Air Pollution Control Officer with a description of the emergency and any mitigating or corrective actions taken.

B. The Permittee has the burden of proof to establish that an emergency occurred in any enforcement proceeding. [NCUAQMD Reg. 5 Rule 450.]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

TITLE VI REQUIREMENTS (OZONE DEPLETING SUBSTANCES)

AQ-30 The Permittee of this Title V source allowing or causing the opening of appliances containing CFCs for maintenance, service, repair, or disposal must comply with the required practices set out in and pursuant to 40 C.F.R. 82.156. [40 C.F.R. 82 Subpart F.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-31 Equipment used during the maintenance, service, repair, or disposal of appliances containing CFCs shall comply with the standards for recycling and recovery equipment set out in and pursuant to 40 C.F.R. 82.158. [40 C.F.R. 82 Subpart F.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-32 The Permittee and its contractors and agents performing maintenance, service, repair or disposal of appliances containing CFCs must be certified by an approved technician certification program set out in and pursuant to 40 C.F.R. 82.161. [40 C.F.R. 82 Subpart F.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

ASBESTOS

AQ-33 The Permittee of this Title V source shall comply with the standards of 40 C.F.R. 61 Subpart M which regulates demolition and renovation activities pertaining to asbestos materials.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

PAYMENT OF FEES

AQ-34 The Permittee of this Title V source shall pay an annual permit fee and other fees as required in accordance with NCUAQMD Rule 300. Failure to pay these fees by the dates due will result in immediate suspension of this Title V Permit to Operate effective on the date the fees were due, and on notification by the Air Pollution Control Officer of such suspension. Operation without an effective Title V permit subjects the owner(s), operator(s) and Permittee(s) to potential enforcement action by the NCUAQMD and the U.S. EPA pursuant to

Section 502(a) of the Clean Air Act as amended in 1990. [NCUAQMD Reg. 5 Rule 670.]

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include information on fees paid (**AQ-SC9** and **AQ-20**).

ACCIDENTAL RELEASES

AQ-35 If subject to Section 112(r) of the CAA and 40 C.F.R. Part 68, the Permittee(s) of this Title V permit shall register and submit to the U.S. EPA the required data related to the risk management plan (RMP) for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r) (3) of the CAA as amended in 68.130. The list of substances, threshold quantities and accident prevention Regulations promulgated under Part 68 do not limit in any way the general duty provisions under Section 112(r)(1). [40 C.F.R. Part 68.]

Verification: Refer to **Haz-2**.

AQ-36 If subject to Section 112(r) of the CAA and 40 C.F.R. Part 68, the Permittee shall comply with the requirements of 40 C.F.R. Part 68 no later than the latest of the following dates as provided in 40 C.F.R. 68.10(a):

A. June 21, 1999,

B. Three years after the date on which a regulated substance is first listed under 68.130, or

C. The date on which a regulated substance is first present above a threshold quantity in a process. [40 C.F.R. Part 68.]

Verification: The project owner shall submit to both the District and CPM the information required under this condition.

AQ-37 If subject to Section 112(r) of the CAA and 40 C.F.R. Part 68, the Permittee(s) shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 C.F.R. Part 68. [40 C.F.R. Part 68.]

Verification: The project owner shall submit to both the District and CPM the information required under this condition.

AQ-38 If subject to Section 112(r) of the CAA and 40 C.F.R. Part 68, the Permittee(s) shall annually certify compliance with all applicable requirements of Section 112(r) as part of the annual compliance certification. This annual compliance certification shall be submitted and received no later than January 30 of each year. [40 C.F.R. Part 68.]

Verification: The project owner shall submit to the CPM and APCO the certification requirement as part of the annual compliance certification (**AQ-SC9**).

CONDITIONAL TRANSFER OF OWNERSHIP

AQ-39 In the event of any changes in control or ownership of these facilities, this permit together with its terms and conditions shall be binding on all subsequent owners and operators. The Permittee shall notify the succeeding owner and operator of the existence of this permit and its Conditions by letter, a copy of which shall be forwarded to the NCUAQMD, and which shall identify the exact effective date of the transfer of ownership.

The new owner(s) and operator(s) of this Title V source shall notify the Air Pollution Control Officer within 30 (thirty) days of the transfer of ownership and which notification shall include a certification by the responsible party that the Title V facility operations are to be operated in the same operational parameters as set out herein, and as before the transfer of ownership.

Any permit or written authorization issued pursuant herein shall not be transferable, by operation of law or otherwise, from one location to another, or from one person to another, unless such transfer occurs as a condition of this permit or as a modification to the permit and with written notification to the Air Pollution Control Officer within 30 (thirty) days of transfer of ownership. [NCUAQMD Rule 240.]

Verification: The project owner shall submit to both the District and CPM the notification within 30 days of the transfer of ownership (see also **AQ-59**).

SEVERABILITY

AQ-40 If any term or condition of this permit, for any reason, be adjudged by a court of competent jurisdiction to be invalid, such judgment shall not affect or invalidate the remainder of this permit. These permit conditions are enforceable individually and severally. [NCUAQMD Reg. 5 Rule 610(h)] [40 C.F.R. 60.6(b)(5).]

Verification: No verification needed.

LOCAL ENFORCEABLE ONLY, GENERAL REQUIREMENTS

APPLICABILITY

AQ-41 The requirements outlined in this section are non-federally enforceable local permit requirements. [NCUAQMD Rule 102.]

Verification: No verification needed.

AQ-42 The Permittee of this Title V source shall not cause or permit the construction or modification of any new source of air contaminants or modifications to an existing source, either minor or major, without first

having obtained an Authority to Construct (ATC) permit from the Air Pollution Control Officer.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-43 This permit is effective only upon payment of the initial permit fees set out in NCUAQMD Rules and Regulations.

Verification: No verification needed.

ADMINISTRATION

AQ-44 This Permit is issued pursuant to California Health and Safety Code Section 42300. Commencement of any act or operation authorized by this Permit shall be conclusively deemed to be acceptance of all terms and conditions contained herein.

Verification: No verification needed.

AQ-45 The Permittee shall comply with all conditions of this permit. Any violation of any condition of this Permit is a violation of NCUAQMD Rules and Regulations, and California State Law. [NCUAQMD Rule 105 §1.0.]

Verification: No verification needed.

AQ-46 The Permit Conditions shall be liberally construed for the protection of the health, safety and welfare of the people of the NCUAQMD. [NCUAQMD Rule 100 § 6.3; Rule 102 § 5.0.]

Verification: No verification needed.

AQ-47 The NCUAQMD Rules and Regulations may be superseded or revised by the NCUAQMD Board with notice as required by state law. It is Permittee's responsibility to stay current with Rules and Regulations governing its business. The Permittee is therefore expected to comply with all applicable Rules and Regulations. [NCUAQMD Rule 100 § 6.0; Rule 105 § 1.0.]

Verification: No verification needed.

AQ-48 Permit requirements apply to the facility owner and/or operator(s) and any contractor(s) or subcontractor(s) performing any activity authorized under this Permit. Any person(s) including contractor(s), subcontractor(s), not in compliance with the applicable permit requirements are in violation of State and Local laws and subject to appropriate civil and criminal penalties. The facility owner and/operator, and all contractor(s) or subcontractor(s) are strictly liable for the actions and violations of their employee(s). A violation committed by a contractor(s) or subcontractor(s) shall be considered a violation by the facility owner(s) and/or operator(s), and is also a

violation by the contractor(s) and/or any subcontractor(s). [NCUAQMD Rule 105 § 5.0.]

Verification: No verification needed.

AQ-49 Changes in plans, specifications, and other representations proposed in the application documents shall not be made if they will increase the discharge of emissions or cause a change in the method of control of emissions or in the character of emissions. Any proposed changes, regardless of emissions consequence, shall be submitted as a modification to this Permit. No modification shall be made prior to issuance of a permit revision for such modification. [NCUAQMD Rule 102.]

Verification: The project owner shall submit to both the District and CPM the applications for permit modifications as needed.

AQ-50 Knowing and willful misrepresentation of a material fact in the application for the Permit, or failure to comply with any condition of the Permit, or of the NCUAQMD Rules and Regulations, or any state or federal law, shall be grounds for revocation of this Permit. [NCUAQMD Rule 102.]

Verification: No verification needed.

AQ-51 Permittee shall not construct, erect, modify, operate, or use any equipment which conceals the emission of an air contaminant, which would otherwise constitute a violation of the limitations of this Permit. [NCUAQMD Rule 104 § 1.2.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-52 This Permit does not convey any property rights of any sort, or any exclusive privilege.

Verification: No verification needed.

AQ-53 The "Right of Entry", as delineated in NCUAQMD Rule 109 § 1.0 and California Health and Safety Code Section 41510 of Division 26, shall apply at all times. Failure to grant immediate access to NCUAQMD, CARB, or other authorized personnel shall be grounds for permit suspension or revocation.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-54 The APCO reserves the right to amend this Permit in order to ensure compliance with all applicable Federal, State and Local laws, Rules and Regulations or to mitigate or abate any public nuisance. Such amendments may include requirements for additional operating conditions, testing, data collection, reporting and other conditions deemed necessary by the APCO.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-55 In the event that two or more conditions may apply, and such conditions both cannot apply without conflict, the condition(s) most protective of the environment and the public health and safety shall prevail. In the event that a condition(s) of the Permit and a requirement of a Federal, State or Local law, rule or Regulation may also apply, and both cannot apply without conflict, the requirements most protective of the environment and the public health and safety shall prevail. [NCUAQMD Rule 100 §6.3; NCUAQMD Rule 102 §5.0.]

Verification: No verification needed.

AQ-56 If any provision or condition of this Permit is found invalid by a court of competent jurisdiction, such finding shall not affect the validity or enforcement of the remaining provisions. [NCUAQMD Rule 102 §5.0.]

Verification: No verification needed.

AQ-57 This Permit shall be posted in a conspicuous location at the site and shall be made available to NCUAQMD representatives upon request. [NCUAQMD Rule 102 §8.0.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-58 The Permittee shall pay an annual permit fee and other fees as required in accordance with NCUAQMD Regulation IV. Failure to pay these fees will result in the forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the NCUAQMD. In the event of facility closure or change of ownership or responsibility, the new owner or operator shall be assessed and shall pay any unpaid fees. [NCUAQMD Regulation IV – Fees.]

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include information on fees paid (**AQ-SC9** and **AQ-20**).

AQ-59 This Permit is not transferable from either one location to another, from one piece of equipment to another, or from one person to another, except as provided herein. In the event of any change in control or ownership of the subject facility, the Permittee shall notify the succeeding owner of this Permit and its conditions; and shall notify the NCUAQMD of the change in control or ownership within fifteen (15) days of that change. [NCUAQMD *Rule 400 §5.0.*]

Verification: The project owner shall submit to both the District and CPM the notification within 15 days of the change in control or ownership (see also **AQ-39**).

AQ-60 A request for Transfer of Ownership of this Permit shall be submitted to the APCO prior to commencing any operation of the subject

equipment and/or operations by any owner(s) and/or operator(s) not otherwise identified in this Permit. Failure to file the Transfer of Ownership constitutes a separate and independent violation, and is cause for voiding this Permit. The burden of applying for a Transfer of Ownership is on the new owner(s) and/or operator(s). Any Permit transfer authorized pursuant to a transfer of ownership request shall contain the same conditions as this Permit. [NCUAQMD *Rule 400 §5.0; Rule 102 §5.0.*]

Verification: The project owner shall submit to both the District and CPM the request for transfer of ownership before commencing operation by a previously unidentified owner and/or operator (see also **AQ-39**).

AQ-61 For purposes of this Permit, the terms identified in the Definition Section shall have the meaning set out therein. [NCUAQMD Rule 102 §5.0.]

Verification: No verification needed.

EMISSIONS & OPERATION

AQ-62 This Permit does not authorize the emission of air contaminants in excess of those allowed by the Federal Clean Air Act, California Health and Safety Code or the Rules and Regulations of the NCUAQMD. This Permit shall not be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies.

Verification: No verification needed.

AQ-63 Permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property. [CH&S §41700; NCUAQMD Rule 104 §1.1.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-64 Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant for a period or periods more than three (3) minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or of such opacity as to obscure an observer's view to a degree equal to or greater than Ringelmann 2 or forty (40) percent opacity. [*CH&S §41701; NCUAQMD Rule 104 §2.0*]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-65 The handling, transporting, or open storage of material in such a manner which allows unnecessary amounts of particulate matter to become airborne shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. [NCUAQMD Rule 104 §4.0.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-66 All equipment regulated by this Permit shall at all times be maintained in good working order and shall be operated as efficiently as possible so as to ensure compliance with all applicable emission limits. For purposes of compliance with this requirement, good working order, efficient operation, and proper maintenance shall mean the implementation of all protocols, procedures, and activities recommended by the device manufacturer or those required by this Permit. [NCUAQMD Rule 102 §5.0.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

RECORDS & TRAINING

AQ-67 The Permittee shall provide training and instruction to all contractor(s), subcontractor(s), and employee(s). Training shall include the identification of all the requirements contained within this Permit, and the appropriate method to be used to comply with the permit conditions. Training shall occur prior to any of the contractor(s), subcontractor(s), or employee(s) constructing or operating equipment authorized by this permit. Records documenting the persons receiving instruction and the instruction materials shall be made available to the APCO upon request. [NCUAQMD Rule 105 §5.0.]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-68 Permittee shall furnish to the APCO, within a reasonable time, any information that the NCUAQMD may request to determine compliance with this Permit or whether cause exists for modifying, revoking and reissuing, or terminating this Permit. Upon request, Permittee shall also furnish to the NCUAQMD copies of records required to be kept by this Permit. [CH&S §42303; NCUAQMD Rule 103 §6.0, Rule 102 §5.0]

Verification: The project owner shall submit to both the District and CPM the compliance information as needed.

PERMIT TERM

AQ-69 This Permit is issued pursuant to NCUAQMD Rule 110 Section 9 and shall only become effective after a Final Determination of Compliance has been issued by the APCO pursuant to NCUAQMD Rule 110 §9.6.

Verification: No verification needed.

AQ-70 The authorization for equipment installation and construction activities identified in this Permit shall expire no more than 545 days from date of issue. [NCUAQMD Rule 102 §5.0.]

Verification: No verification needed.

AQ-71 Once the subject equipment has been constructed in compliance with the conditions of this permit, this Authority to Construct Permit shall serve as a Temporary Permit to Operate for a period not to exceed one hundred and eighty (180) days of operation. Should the need arise, the Temporary Permit to Operate may be extended by the APCO for up to an additional ninety (90) days for good cause shown. The burden of proof lies with the Permittee to demonstrate good cause for such action. [H&SC §42301.1; NCUAQMD Rule 102 §2.0.]

Verification: No verification needed.

FEDERALLY ENFORCEABLE, EQUIPMENT-SPECIFIC REQUIREMENTS

AUTHORIZED EQUIPMENT

AQ-72 The Permittee shall install and construct the project as described in Authority To Construct application September 29, 2006 and its series of amendments ending with the most recent submittal of February 27, 2008. Should discrepancies or contradictions exist between the application and this Permit, the provisions of this Permit shall prevail. The specific components authorized are listed in Table 1.0 and Table 2.0 below. For each of the reciprocating internal combustion engines S-1 through S-10, both a Selective Catalytic Reduction system (SCR) and an oxidation catalyst shall be designated “A-(engine number) SCR” and “B-(engine number) oxidation catalyst respectively.” [NCUAQMD Rule 504 §2.1.]

Table 1.0

Authorized Emission Devices

Unit No.	Equipment	Nominal Size
S-1	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #1, equipped with lean burn technology, abated by A-1 SCR and B-1oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-2	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #2, equipped with lean burn technology, abated by A-2 SCR and B-2 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-3	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #3, equipped with lean burn technology, abated by A-3 SCR and B-3 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-4	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #4, equipped with lean burn technology, abated by A-4 SCR and B-4 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-5	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #5, equipped with lean burn technology, abated by A-5 SCR and B-5 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-6	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #6, equipped with lean burn technology, abated by A-6 SCR and B-6 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-7	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #7, equipped with lean burn technology, abated by A-7 SCR and B-7 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-8	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #8, equipped with lean burn technology, abated by A-8 SCR and B-8 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-9	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #9, equipped with lean burn technology, abated by A-9 SCR and B-9 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-10	Wärtsilä 18V50DF Dual Fuel Reciprocating Engine #10, equipped with lean burn technology, abated by A-10 SCR and B-10 oxidation catalyst	148.9 MMBtu/hr 16.3 MW 22,931 BHp
S-11	Caterpillar DM8149 (or equivalent) Diesel-fired Emergency IC Engine powering a 350kW electrical generator	469 HP
S-12	Clarke/John Deere JU6H-UF50 (or equivalent) Diesel-fired Emergency IC Engine powering a fire water pump	210 HP

Table 2.0

Authorized Control Devices

Control Equipment	Manufacturer	Model	Specifications
Oxidation Catalyst	HUG Engineering (or equivalent)	OCT-0806-040-0062/450 (or equivalent)	Catalyst: Platinum Reactor Temperature: 608 ˚F to 908 ˚F Outlet Temperature: 608 ˚F to 908 ˚F Max Flow: 143,000 acfm Control Efficiency: 13ppmvd CO @15%O_2 while in NG Mode; 20ppmvd CO @15%O_2 while in Diesel Mode
Selective Catalytic Reduction System	HUG Engineering (or equivalent)	RFV-0890-040-200/300 (or equivalent)	Catalyst: Vanadium Pentoxide Reactor Temperature: 608 ˚F to 908 ˚F Outlet Temperature: 608 ˚F to 908 ˚F Max Flow: 143,000 acfm Control Efficiency: 6ppmvd NOx @15%O_2 while in NG Mode; 35ppmvd NOx @15%O_2 while in Diesel Mode

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-73 The Permittee shall not modify the equipment subject to this permit in such a manner so as to exceed the Heat Input Capacities, or deviate from the nominal full-load design specifications as submitted in the AFC, and as identified in Table 1.1, Table 1.2, or Table 1.3. [NCUAQMD Rule 102 §5.0.]

Table 1.1 S-1 Through S-10 Engine Specifications

Primary Fuel	Natural Gas
Backup Fuel	CARB Diesel
Design Ambient Temperature	67.5 ˚F
Nominal Heat Input Rate (HHV)	143.9 MMBtu/hr natural gas plus 0.79 MMBtu pilot fuel (natural gas mode) – OR – 148.9 MMBtu/hr CARB Diesel Fuel (diesel mode)
Nominal Exhaust Temperature	728˚F
Exhaust Flow Rate	121,500 acfm
Exhaust Release Height	100 Feet (above grade)
Exhaust O2 Concentration, dry volume	11.6%
Exhaust CO2 Concentration, dry volume	5.3%
Emission Controls	Lean Burn Technology and SCR; Oxidation Catalyst
SIC	4911
SCC	20100202 natural gas mode; 20100301 diesel mode

Table 1.2 S-11 Engine Specifications

Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	4.0 MMBtu/hr
Heat Input, gal/hr	29.1
SIC	4911
SCC	20100301

Table 1.3 S-12 Engine Specifications

Primary Fuel	CARB Diesel
Nominal Heat Input Rate (HHV)	1.68 MMBtu/hr
Heat Input, gal/hr	12.3
SIC	4911
SCC	20201607

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-74 The Permittee shall only fire reciprocating engines S-1 through S-10 with fuel which meets or exceeds the fuel specifications identified in Tables 1.3 and 1.4. Prior to firing reciprocating engines S-1 through

S-10 with an Alternative Fuel or CARB Diesel with additives, the Permittee shall make a request to the APCO to switch fuel types. The request shall include all necessary information to characterize emission changes which may occur as a result of the change. The Permittee shall not fire reciprocating engines S-1 through S-10 with a liquid fuel other than CARB Diesel without prior approval from the APCO. *[NCUAQMD Rule 102 §5.0*]

Table 1.4 Fuel Specifications for S-1 through S-10

Fuel Type	Property	Value
Natural Gas	Sulfur Content	< 1 gr / 100scf per test; annual average <0.33gr/100scf
CARB Diesel	Sulfur Content	< 15 ppm

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-75 Reciprocating engines S-1 through S-10 shall be equipped with a monitoring system capable of measuring and recording hours of operation (in tenths of an hour) and fuel consumption (in cubic feet and gallons) while operating in natural gas/diesel pilot mode and diesel mode. The measuring devices shall be accurate to plus or minus 1% at full scale, and shall be tested at least once every twelve months or at more frequent intervals if necessary to ensure compliance with the 1 percent accuracy requirement. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-76 The exhaust stacks shall not be fitted with rain caps or any other similar device which would impede vertical exhaust flow. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-77 The Permittee shall install and maintain a non-resettable hour meter with a minimum display capability of 9,999 hours upon the Emergency IC Diesel Generators S-11 and S-12. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-78 The Emergency IC Diesel Generators S-11 and S-12 shall use one of the following fuels:

A. CARB Diesel Fuel, or

B. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or

C. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or

D. Any combination of a) through d) above.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-79 The reciprocating engines S-11 and S-12 shall be certified to meet the EPA Tier 3 emission levels. [40 C.F.R. 60 Subpart IIII]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-80 The Permittee shall obtain APCO approval for the use of any equivalent engine for S-11 or S-12 not specifically approved by this Authority to Construct. Approval of an equivalent engine shall be made only after the APCO's determination that the submitted design and performance data for the proposed IC engine is equivalent to the approved engine. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to both the District and CPM the application for equivalent emergency engines as needed.

AQ-81 The Permittee's request for approval of an equivalent engine shall include the following information: engine manufacturer and model number, horsepower (hp) rating, exhaust stack information, and manufacturer's guaranteed emission concentrations. [NCUAQMD Rule 504 §4.0; NCUAQMD Rule102 §5.0]

Verification: The project owner shall submit to both the District and CPM the application for equivalent emergency engines as needed.

AQ-82 The Permittee's request for approval of an equivalent engine shall be submitted to the NCUAQMD at least 90 days prior to the planned installation date. The Permittee shall also notify the NCUAQMD at least 30 days prior to the actual installation of the NCUAQMD approved equivalent engine. [NCUAQMD Rule 103 §6.0]

Verification: The project owner shall submit to both the District and CPM the application for equivalent emergency engines at least 90 days prior to the planned installation date.

AQ-83 The Permittee shall install exhaust gas temperature monitoring devices at the inlet and the outlet of the oxidation catalyst. [40 C.F.R. §63.6625; BACT]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-84 Ammonia injection points shall be equipped with operational ammonia flow meters and injection pressure indicators. The flow meters shall be accurate to plus or minus 1 percent at full scale and shall be calibrated at least once every twelve months or at more frequent intervals if necessary to ensure compliance with the 1 percent requirement. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-85 The Permittee shall install points of access to the Emission Devices, Control Devices, and Continuous Emission Monitoring Devices such that source testing in accordance with the appropriate reference test methods can be performed. All points of access shall conform to the latest Cal-OSHA safety standards. For purposes of compliance with this part, appropriate test methods shall mean the test methods identified in the Testing and Compliance Monitoring Conditions section of this Permit; and the collection of gas samples with a portable NOx, CO, and O_2 analyzer. Sample collection ports shall be located in accordance with 40 C.F.R. Part 60 Appendix A, and with the CARB document entitled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-86 Each reciprocating engine shall be equipped with a continuous emission monitor (CEM) for NOx, CO, and O_2. Continuous emissions monitor(s) shall meet the requirements of 40 C.F.R. part 60, Appendices B and F, and NCUAQMD-approved protocol during normal operations. The monitors shall be designed and operated so as to be capable of monitoring emissions during normal operating conditions and during Startup and Shutdowns Periods. [NCUAQMD Regulations Appendix B]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-87 The Permittee shall demonstrate compliance with the ammonia slip limit by using the following calculation procedure: The ammonia emission concentration shall be verified by the continuous recording of the ratio of the ammonia injection rate to the NOx inlet rate into the SCR control system (molar ratio). The maximum allowable NH3:NOx molar ratio shall be determined during any required source test, and shall not be exceeded until reestablished through another valid source test. Alternatively, the Permittee may be required to install, operate

and maintain a continuous in-stack emissions monitor for emissions of ammonia. The Permittee shall obtain APCO approval for the installation and use the ammonia CEMs equipment at least 60 days prior to the planned installation date. [NCUAQMD Rule 103 §6.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-88 Both onsite and offset emission credits were utilized for this project. Prior to commencement of construction, in accordance with Rule 106 §6.6, the Permittee shall provide to the NCUAQMD APCO documentation of transfer of ownership of offsite Emission Reduction Credits sufficient to offset the emissions identified in Table 3. Prior to commencement of the Commissioning Period, the Permittee shall surrender to the NCUAQMD sufficient offsite emission credits to offset the increases listed in Table 3.0 below. NOx credits provided to offset PM_{10} increases shall be at an inter-pollutant ratio of 3.58:1 after the appropriate distance ratio is applied. The Permittee shall permanently shut down the existing facility and all emission units permitted under Title V Permit To Operate NCU 059-12 in accordance with Condition #110. [40 C.F.R. 51, Appendix S; NCUAQMD Rule 110]

Table 3.0 HBRP Required Offsite Offsets By Quarter

	Pollutant Quantities in Tons			
Pollutant	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**
PM_{10}	2.45	2.35	2.37	2.34
ROC	0.62	0.59	0.59	0.59

Verification: The project owner shall submit to both the District and CPM the information on Emission Reduction Credits prior to construction.

EMISSION LIMITING CONDTIONS

AQ-89 The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.20 grains per cubic foot of dry gas calculated to 12 percent CO_2 at standard conditions. [NCUAQMD Rule 104 §3.1]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with condition **AQ-164**.

AQ-90 The Permittee shall not discharge sulfur dioxide into the atmosphere in excess of 1000 ppmv or 40 tons per year. *[NCUAQMD Rule 104 §5.0*]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with condition **AQ-164**.

AQ-91 Visible emissions from reciprocating engines S-1 through S-12 shall not be as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, or of such opacity so as to obscure an observer's view to a degree equal to or greater than 20 percent, for any period or periods more than 3 minutes in any one hour. This visible emission limitation shall not apply during Startup or Shutdown Periods. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-92 The Permittee shall not operate reciprocating engines S-1 through S-10 such that the emissions of NOx, from a combination of all engines, exceeds 392 lbs per hour. Furthermore, except as provided below, the Permittee shall not operate reciprocating engines S-1 through S-10 such that more than 2 units are in a Diesel Startup Period during any one Clock Hour. Following completion of the emissions testing for all ten units required under Condition #163, the Permittee may request the use of an alternative compliance demonstration method. Such a request shall include, but not be limited to the following:

A. Identification of alternative operational limit(s) and/or alternative method(s) for determining compliance with the facility wide pound per hour NOx emission limit; and

B. Source test data and calculations demonstrating that revisions to emission factors, and/or utilization of an alternative compliance determination method, are appropriate.

Upon written approval by the District of the alternative compliance demonstration method, the permit limitation on the number of Diesel Mode Startups may be modified. In no event shall the facility wide hourly limit of 392 lbs of NOx be increased, nor any operational activities permitted, which would allow an exceedance of any emission limitation. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-93 The Permittee shall not discharge diesel particulate matter from reciprocating engines S-1 through S-10 while operating in Diesel Mode such that emissions of Diesel Particulate Matter exceed 0.11 g/bhp-hr. [NSPS 40 C.F.R. Part 60 Subpart IIII]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with condition **AQ-164**.

AQ-94 The Permittee shall not discharge Carbon Monoxide from reciprocating engines S-1 through S-10 in excess of 0.14 g/bhp-hr or 20 ppmvd @ 15% O_2. [40 C.F.R. 63 Subpart ZZZZ]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with condition **AQ-164**. A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

HEAT INPUT & FUEL LIMITATIONS

Engines S-1 Through S-10

AQ-95 The Permittee shall not operate reciprocating internal combustion engines S-1 through S-10 in such a manner so as to exceed the heat input capacities listed in Table 4.0 on a per engine basis. [NCUAQMD Rule 102 §5.0]

Table 4.0 Heat Input Limitations Per Engine

Each Unit[1]		Heat Input, MMBtu (HHV)	
		Hourly 3 hr rolling average	Daily 24 hour rolling average
Natural Gas Mode[2]	Natural Gas	143.9	3,454
	Diesel (Pilot)	0.8	19
Diesel Mode	Diesel	148.9	3574

Notes:

1) Each unit can only run in either Natural Gas or Diesel Mode, not both simultaneously.
2) Heat Input in Natural Gas Mode is the sum of natural gas and diesel pilot also.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-96 The Permittee shall not operate reciprocating internal combustion engines S-1 through S-10 in such a manner so as to exceed the heat input capacities listed in Table 4.1 below calculated as a sum of all 10 engines. [NCUAQMD Rule 102 §5.0]

Table 4.1 Heat Input Limitations S-1 Through S-10 Engines Combined

Sum of All 10 Units		Heat Input, MMBtu (HHV)		
		Hourly	Daily	Annual
Natural Gas Mode[1]	Natural Gas	1,439	34,536	9,277,233[2]
	Diesel Pilot	7.9	190	51,576
Diesel Mode	Diesel	1,489	30,376[2,3]	148,900[2]

Notes:

1) Total Heat Input in Natural Gas Mode is the sum of natural gas and diesel pilot.
2) This limit applies to operation for maintenance and testing, and during periods of Natural Gas Curtailments as defined in this permit. The limit shall not apply to fuel consumed during the Commissioning Period.
3) This limit was established to ensure compliance with the $PM_{2.5}$ standard

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-97 The Permittee shall not exceed the diesel fuel firing limits listed in Table 4.2 below while operating reciprocating engines S-1 through S-10 in Natural Gas Mode. [NCUAQMD Rule 102 §5.0]

Table 4.2 Diesel Fuel Firing Limitations (Pilot)

Engines S-1 Through S-10	Gallons of Diesel Fuel		
	Hourly 3 hr rolling average	Daily 24 hour rolling average	Annual 365 day rolling average
All Combined	58	1,402	376,734

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-98 The Permittee shall not exceed the diesel fuel firing limits listed in Table 4.3 below while operating reciprocating engines S-1 through S-10 in Diesel Mode. [NCUAQMD Rule 102 §5.0]

Table 4.3 Diesel Fuel Firing Limitations

Engines S-1 Through S-10	Gallons of Diesel Fuel		
	Hourly 3 hr rolling average	Daily 24 hour rolling average	Annual 365 day rolling average
Per Engine	1,088	26,106	—
All Combined	10,876	221,877[1,2]	1,087,630[1]

Notes:

1) This limit applies to operation for maintenance and testing, and during periods of Natural Gas Curtailments as defined in this permit. The limit shall not apply to fuel consumed during the Commissioning Period.

2) This limit was established to ensure compliance with the $PM_{2.5}$ standard (85 percent average load)

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

POLLUTANT LIMITATIONS

S-1 – S-10 Startup & Shutdown Periods

AQ-99 The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 5.0 below during Startup or Shutdown Periods. [NCUAQMD Rule 102 §5.0]

Table 5.0 Start & Shutdown Period Emission Limits

Mode of Operation	Pollutant				
	NOx	CO	ROC	PM10	SOx
Natural Gas, lb/hr	23.6	24.1	17.9	3.6	0.4
Diesel Mode, lb/hr	164	25.5	17.2	10.8	0.22

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

S-1 – S-10 Natural Gas Mode

AQ-100 The Permittee shall not operate reciprocating engines S-1 through S-10, such that they individually discharge pollutants exceeding the limits identified in Table 5.1 below based upon a three (3) hour average with the exception of NOx which shall be based upon a one (1) hour average. The limits shall not apply during Startup or Shutdown Periods. [40 C.F.R. 63.6(f)(1), NCUAQMD Rule 102 §5.0]

Table 5.1 Natural Gas Mode Emission Limits – per engine

Pollutant	Emission Rate		
	ppmvd @ 15% O_2	lb/hr	lb/MMBtu
CO	13	4.13	0.029
NH_3	10	1.9	0.013
NOx	6.0	3.1	0.022
PM_{10}	-	3.6	-
ROC	28	5.1	0.035
Sox	-	0.40	0.0028

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-101 The combined discharge of pollutants, from the reciprocating engines S-1 through S-10 shall not exceed the limits listed in Table 5.2 below during any Calendar Day in which none of the engines are operated in Diesel Mode for any period of time. For purposes of compliance with this condition, the emissions from Startup and Shutdown Periods shall be included in the daily calculation of emissions. [NCUAQMD Rule 102 §5.0]

Table 5.2
S-1 Through S-10 Combined Natural Gas Mode Limit

Pollutant	Emission Rate lb/Day
CO	1,589
NH_3	456
NOx	1,360
PM_{10}	864
ROC	1,608
SOx	97

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

S-1 – S-10 Diesel Mode

AQ-102 The Permittee shall not discharge pollutants into the atmosphere from the reciprocating engines S-1 through S-10 while in Diesel Mode, based upon a three (3) hour rolling average, in excess of the emission limits identified in Table 5.3 below. The limits shall not apply during Startup or Shutdown Periods. [40 C.F.R. 63.6(f)(1), NCUAQMD Rule 102 §5.0.]

Table 5.3 Diesel Mode Emission Limits – per engine

Pollutant	Emission Rate		
	ppmvd @ 15% O_2	lb/hr	lb/MMBtu
CO	20.0	6.9	0.047
NH_3	10	2.1	0.014
NOx	35.0	19.9	0.134
PM_{10}	-	10.8	0.137
ROC	40.0	7.9	0.053
SOx	0.40	0.22	0.0016

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-103 The discharge of Diesel Particulate Matter into the atmosphere from the reciprocating engines S-1 through S-10 while in Diesel Mode shall not exceed the emission limits identified in Table 5.4 below. The limits shall not apply during the Commissioning Period as defined in this permit. [NCUAQMD Rule 102 §5.0]

Table 5.4 Diesel Particulate Matter Limitations

Engines S-1 Through S-10	Diesel Particulate Matter (pounds)		
	Hourly 3 hr rolling average	Daily 24 hour rolling average	Annual 365 day rolling average
Per Engine	5.56	133.4	—
All Combined	55.6	1,334	5,560

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-104 The combined discharge of pollutants from the reciprocating engines S-1 through S-10 during any Calendar Day shall not exceed the limits listed in Table 5.5 below during any Calendar Day in which one or more of the engines are operated in diesel mode for any period of time. For purposes of compliance with this condition, the emissions from Startup and Shutdown Periods shall be included in the daily calculation of emissions.

Table 5.5
S-1 Through S-10 Combined Diesel Mode Limit

Pollutant	Emission Rate lb/Day
CO	2,219
NH_3	506
NOx	9,103
PM_{10}	1,542
ROC	2,183
SOx	97

For purposes of determining compliance with the daily PM10 limit in Table 5.5, the Permittee shall not operate reciprocating engines S-1 through S-10 in Diesel Mode for more than 142 engine-hours per day. Following completion of the PM10 emissions testing required under Condition #163 on all 10 engines, the Permittee may request the use of

an alternative compliance demonstration method. Such a request shall include, but not be limited to the following:

A. Identification of the highest PM emission rates of the 10 units as determined during initial performance testing.

B. Identification of alternative operational limit(s) and/or alternative method(s) for determining compliance with the facility wide pound per day PM emission limit; and

C. Source test data and calculations demonstrating that revisions to emission factors and/or compliance determination method(s) are appropriate.

Upon written approval by the District of the alternative compliance demonstration method, the permit limitation on the number of hours of operation in Diesel Mode may be modified. The highest PM pollutant values identified during the initial performance testing shall become the permitted emission limits for all engine units. In no event, shall the newly established emission limits be in excess of 10.8 lbs/hr. (the manufacturer's guaranteed emission rates identified in the AFC), and in the ATC materials submitted by the applicant. In no event shall the facility wide daily limit of 1,542 pounds be increased, nor any operational activity permitted, which would allow an exceedance of any emission limitation. Compliance with the daily facility wide PM emission limit shall be calculated as a function of engine hourly emission rate times the number of hours of operation per day. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-105 The combined discharge of pollutants from the reciprocating engines S-1 through S-10 during any calendar year shall not exceed the limits listed in Table 5.6 below. [NCUAQMD Rule 102 §5.0]

Table 5.6
S-1 Through S-10 Combined Annual Emission Limits

Pollutant	Emission Rate Tons/Yr
CO	172.7
NH_3	63.3
NOx	179.1
PM10	119.8
ROC	190.8
SOx	4.3

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include monitoring and compliance results (**AQ-SC9** and **AQ-20**).

Engines S-11 and S-12

AQ-106 The Permittee shall not operate reciprocating engines S-11 and S-12 such that pollutant discharge into the atmosphere exceeds the quantities in Table 5.7 below. [NCUAQMD Rule 102 §5.0]

Table 5.7 Reciprocating Engines S-11 and S-12 Emission Limits

Unit	Pollutant	g/Hp – hr	lb/hr
S-11 Emergency Generator	CO	0.63	0.65
	DPM	0.05	0.05
	NOx	3.47	3.59
	ROC (non-methane HC)	0.4	0.41
	SOx	—	0.0061
S-12 Fire Pump	CO	0.59	.27
	DPM	0.14	0.06
	NOx	4.9	2.27
	ROC (non-methane HC)	0.5	0.23
	SOx	—	0.0026

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-107 The combined discharge of pollutants from the reciprocating engines S-11 through S-12 during any calendar year shall not exceed the limits listed in Table 5.8 below. [NCUAQMD Rule 102 §5.0]

Table 5.8
S-11 and S-12 Combined Annual Emission Limits

Pollutant	Emission Rate lbs/Yr
CO	45
NOx	287
DPM	5.5
ROC	31.5
SOx	0.4

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include monitoring and compliance results (**AQ-SC9** and **AQ-20**).

STARTUP COMMISSIONING & SIMULTANEOUS OPERATION

AQ-108 This Permit supplements existing NCUAQMD Permit Numbers for the HBPP of NS-020 (Boiler #1), NS-21 (Boiler #2) and NS-057 (Turbines) until such time as the sources are decommissioned. [NCUAQMD Rule 102 §5.0]

Verification: No verification needed.

AQ-109 The Permittee shall notify the NCUAQMD of the anticipated date of initial startup of the reciprocating engines S-1 through S-10 not more than 60 days, or less than 30 days prior to initial startup. The Permittee shall notify the APCO of the actual startup of reciprocating engines S-1 through S-10 not more than 15 days after actual initial startup. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO the notification of reciprocating engine startup not more than 60 days or less than 30 days prior to initial startup, and notification of actual startup not more than 15 days after initial startup.

AQ-110 The existing generating units at Humboldt Bay Power Plant shall be shut down as soon as possible following the commercial operation of all of the reciprocating engines S-1 through S-10. The existing generating units at Humboldt Bay Power Plant [NCUAQMD Permit Units NS-020 (Boiler #1), NS-21 (Boiler #2) and NS-57 (Turbines)] and any of the new HBRP reciprocating engines S-1 through S-10 shall not be in simultaneous operation for more than 180 calendar days, including their individual Commissioning Periods; and shall be shutdown and their Permits to Operate (PTOs) surrendered once engines S-1 through S-10 have successfully completed their Commissioning Phase as defined elsewhere in this permit. Operation of the existing plant units and any engine or engines for any portion of a calendar day, shall accrue toward the maximum limit of 180 days. [NCUAQMD Rule 110, Rule 102 §5.0]

Verification: The project owner shall surrender to the CPM and APCO the permits for existing units at Humboldt Bay Power Plan within 180 after initial startup of the new reciprocating engines.

AQ-111 Selective catalytic reduction (SCR) systems and oxidation catalysts shall serve each reciprocating engine except as provided for in Condition #114. Permittee shall submit SCR and oxidation catalyst design details to the NCUAQMD for review and approval at least 90 days prior to scheduled delivery of these systems to the site. The Permittee shall not install or operate the SCR and oxidation catalyst

systems without authorization from the APCO. [NCUAQMD Rule 110, Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the design details for control devices not more than 90 days prior to scheduled delivery.

AQ-112 Permittee shall submit continuous emission monitor design, installation, and operational details to the NCUAQMD within 120 days following commencement of construction. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the details for continuous emission monitors not more than 120 days after commencing construction.

AQ-113 In accordance with the NCUAQMD approved Commissioning Plan required under Condition #123, the reciprocating engines shall be tuned to minimize emissions in the time frame specified in the approved Commissioning Plan. [NCUAQMD Rule 102 §5.0;]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-114 In accordance with the NCUAQMD approved Commissioning Plan required under Condition #123, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from each reciprocating engine in the time frame specified in the Commissioning Plan. [NCUAQMD Rule 102 §5.0;]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-115 The continuous monitors specified in Permit Conditions #75, #83, and #86 shall be installed, calibrated, and operational prior to the first firing of reciprocating engines S-1 through S-10. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emission concentrations. [NCUAQMD Rule 102 §5.0;]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-116 The Permittee shall record and monitor the parameters identified in Table 7.0 of this Permit at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). The Permittee shall use APCO approved methods to calculate heat input rates, oxides of nitrogen mass emission rates (reported as nitrogen dioxide), carbon monoxide mass emission rates, and NOx and CO emission concentrations, summarized for each hour and each day. [NCUAQMD Rule 102 §5.0; NCUAQMD Regulation Appendix B]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-117 The total number of firing hours of each reciprocating engine S-1 through S-10 without abatement of emissions by the SCR system and the oxidation catalyst shall not exceed 100 hours for each engine during the Commissioning Period. Such operation of each reciprocating engine without abatement shall be limited to discrete Commissioning Activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities for each engine, the Permittee shall provide written notice to the NCUAQMD and the unused balance of the allowable firing hours without abatement for that engine shall expire. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-118 When one or more reciprocating engines S-1 through S-10 are undergoing Commissioning Activities without an SCR system and oxidation catalyst installed, the Permittee shall not: [NCUAQMD Rule 102 §5.0]

A. Fire more than five uncontrolled reciprocating engines simultaneously.

B. Operate the uncontrolled engines such that their combined hours of operation exceed 90 engine-hours during any Calendar Day.

C. Operate the uncontrolled engines such that their combined hours of operation while in the “alignment phase” exceed 13 engines-hours during any Calendar Day.

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-119 During the Commissioning Period while any of the engines are being operated without an SCR system and oxidation catalyst, the Permittee shall not operate reciprocating engines S-1 through S-10, such that the combined emissions from all of the engines Regardless of their commissioning status, exceed any of the limits in Table 5.9 below: [NCUAQMD Rule 102 §5.0]

Table 5.9
S-1 through S-10 Combined Commissioning Emission Limits

Pollutant	lbs/hr	lbs/day
CO	197.2	2,662
NOx	323.3	4,365
PM_{10}	54	1,296
ROC (as Methane)	86.6	1,559
SOx (SO_2)	2.0	48.4

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-120 For each engine during its Commissioning Period, after four hours of steady-state operation of the SCR system and the oxidation catalyst has occurred, the NOx and CO emissions from that reciprocating engine shall thereafter comply with the limits specified in Permit Conditions #99 through #105. For purposes of compliance with this condition, steady-state operation shall mean: the engine, SCR system, and oxidation catalyst all functioning according to manufacturers specifications and operating in compliance with emission limits as determined by the CEMS. In no event shall the Commissioning Period for each engine exceed 180 consecutive calendar days beginning on the first day the engine is first fired. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-121 Firing hours on 100 percent CARB Diesel Fuel or Alternative Liquid Fuel during the Commissioning Period shall not be considered Maintenance and Testing for purposes of compliance with the annual operating hour limitations specified in the Operational Conditions section of this Permit. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-122 The total mass emissions of NOx, CO, ROC, PM_{10}, and SOx that are emitted from the reciprocating engines during the Commissioning Period shall accrue towards the annual emission limits specified in Condition #107. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-123 The Permittee shall submit a plan to the NCUAQMD at least four weeks prior to the first operation of the first of reciprocating engines S-1 through S-10, describing the procedures to be followed during the Commissioning Period. 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 reciprocating engines, the installation and operation of the SCR systems and the oxidation catalysts, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of each unit without abatement by an SCR system or oxidation catalyst. [40 C.F.R. Part 63; NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan at least four weeks prior to the first operation of the reciprocating engines.

AQ-124 Not later than 90 days prior to first operation, the Permittee shall prepare and submit to the NCUAQMD for approval a plan for complying with the requirements of 40 C.F.R. 63 Subpart ZZZZ. This compliance plan shall provide for an initial performance test on each engine to demonstrate that each oxidation catalyst is achieving a minimum 70 percent reduction in CO over a four hour period. During the initial performance test, the Continuous Emission Monitors shall successfully complete a performance evaluation in accordance using PS3 and 4A of 40 C.F.R. Part 60 Appendix B; the oxidation catalyst pressure drop and inlet temperature shall be measured using ASTM D6522-00 [§63.6625(a)]; and the CEMS data collected in accordance with §63.6625(a) with the data reduced to 1-hour averages.

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

AQ-125 Not later than 90 days prior to first operation, the Permittee shall prepare and submit to the NCUAQMD for approval a plan for complying with the requirements of 40 C.F.R. 60 Subpart IIII. This compliance plan shall provide for an initial performance test on each reciprocating engine to demonstrate compliance with the NOx and PM limitations of 40 C.F.R. §60.4204(c)(1) and (c)(2) and shall establish operating parameters to be monitored continuously to ensure that each reciprocating engine continues to meet the applicable emission standards.

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-123**.

OPERATIONAL CONDITIONS

Engines S-1 through S-10

AQ-126 In the event of an excess emission incident, Regardless of the cause, the Permittee shall immediately take corrective action to minimize the release of excess emissions. Notice shall be provided to

the NCUAQMD as indicated in the Reporting and Recordkeeping Section of this Permit. For purposes of compliance with this condition, excess emissions shall mean discharge of pollutants in quantities which exceed those authorized by Federal, State, NCUAQMD Rules, and this Permit. [40 C.F.R. 70.6(a)(3)(iii)(B); NCUAQMD Rule 105 §5.0.]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-127 All equipment listed in Table 1.0 Authorized Emission Devices and 2.0 Authorized Control Devices shall be operated and maintained by the Permittee in accordance with manufacturer's specifications for optimum performance; and in a manner so as to minimize emissions of air contaminants into the atmosphere. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-128 The Permittee shall implement and maintain a written Startup, Shutdown, and Malfunction Plan as described in as described in 40 C.F.R. 63.6(e) (3) which contains specific procedures for maintaining the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work, during periods of startup, shutdown, and malfunction. The plan must clearly describe the startup and shutdown sequence procedure for each unit. The Plan shall also include a specific program of corrective actions to be implemented in the event of a malfunction in either the process or control systems. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices unless a NCUAQMD approved Startup, Shutdown, and Malfunction Plan is in effect. The Plan shall be submitted to the NCUAQMD not less than thirty (30) calendar days prior to the Commissioning Period for any of reciprocating engines S-1 through S-10. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the startup, shutdown, and malfunction plan at least 30 days prior to the commissioning period.

AQ-129 The Permittee shall develop, implement and maintain a written Device Operational Plan that contains specific procedures for operating the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work under the varying load conditions which may occur during normal modes of operation. The Plan shall also include specific protocols to be followed when transitioning between modes of operation. This plan shall be

consistent with the requirements of this Permit, and all local, state and federal laws, rules, and Regulations. The plan shall include, but not be limited to, daily system integrity inspections and the recording of operational parameters. The Plan shall be submitted to the NCUAQMD not more than thirty (30) calendar days following expiration of the Commissioning Period for any of reciprocating engines S-1 through S-10. The Plan is subject to APCO approval. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices, after the expiration of the Commissioning Period for any of the reciprocating engines plus 60 days, unless a NCUAQMD approved Device Operational Plan is in effect. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the device operational plan within 30 days after the commissioning period.

AQ-130 The Permittee shall develop, implement and maintain a written Device Maintenance & Replacement Plan that contains specific procedures for equipment maintenance and identifies replacement intervals for components of the reciprocating engines S-1 through S-12, their associated control devices, their associated CEMS, sensors, measuring devices, and their associated exhaust gas duct work. The Plan shall be submitted to the NCUAQMD not more than thirty (30) calendar days following expiration of the Commissioning Period for any of reciprocating engines S-1 through S-10. The Plan is subject to APCO approval. The Permittee shall not operate the reciprocating engines S-1 through S-12 and their associated control devices, after the expiration of the Commissioning Period for any of the reciprocating engines plus 60 days, unless a NCUAQMD approved Device Maintenance & Replacement Plan is in effect. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO for approval the device maintenance and replacement plan within 30 days after the commissioning period.

AQ-131 The Permittee shall only operate the Reciprocating engines S-1 through S-10 in Natural Gas Mode except during the Commissioning Period, during Maintenance and Testing, and during Natural Gas Curtailments as set forth in this permit. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-132 The Permittee shall not operate reciprocating engines S-1 through S-10 such that Startup Periods exceed 60 minutes in length. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-133 The Permittee shall not operate reciprocating engines S-1 through S-10 such that Shutdown Periods exceed 30 minutes in length. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-134 The Permittee shall not operate the reciprocating engines S-1 through S-10 such that the combined hours of operation during Startup and Shutdown Periods exceeds 30 engine-hours per day. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-135 The Permittee shall not operate the reciprocating engines S-1 through S-10 such that the combined hours of operation during Startup and Shutdown Periods exceeds 3,650 engine-hours per calendar year. Of the 3,650 engine hours available hours, the hours of operation during Startup and Shutdown Periods in Diesel Mode shall not exceed 500 engine-hours per calendar year. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-136 The Permittee shall not operate any of the reciprocating engines S-1 through S-10 below 50 percent load except during Startup and Shutdown Periods. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-137 The Permittee shall not operate the reciprocating engines S-1 through S-10 for more than 80 engine-hours per Calendar Day at loads less than 12.0 MW. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-138 While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines:

A. Only with CARB Diesel as specified in Table 1.4 Fuel Specifications for S-1 through S-10;

B. For no more than 50 hours per year for maintenance and testing per engine; and

C. Such that the combined engine operating hours do not exceed 1000.0 engine hours per year on a 365 day rolling average basis or the combined engine hours specified in Condition of Certification **PUBLIC HEALTH-1**, whichever is less.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-139 For each Oxidation Catalyst installed, during the performance testing required pursuant to the Testing and Monitoring section of this Permit, the Permittee shall determine the pressure drop across each catalyst. The Permittee shall operate the reciprocating engines S-1 through S-10 such that the pressure drop across the catalyst does not exceed the following acceptable range for any period of time: The acceptable pressure range is two inches of water column (plus or minus 10 percent) deviation from the pressure drop established during performance testing. [40 C.F.R. 63 Subpart ZZZZ]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-140 The Permittee shall not operate reciprocating engines S-1 through S-10 if the inlet temperature of the oxidation catalyst is outside of the acceptable operating range for any period of time. The acceptable operating range of the oxidation catalyst is greater than or equal to 450 ˚F and less than or equal to 1350 ˚F. Each reciprocating engine is paired with a single oxidation catalyst unit. For purposes of compliance with this condition, each engine and catalyst pair is evaluated separately. This Condition does not apply during Startup or Shutdown Periods or during malfunctions. [40 C.F.R. 63 Subpart ZZZZ]

Verification: A summary of significant operation and maintenance events and monitoring records required (**AQ-151**) shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-141 The Permittee shall not operate reciprocating engines S-1 through S-10 unless the CO emissions from the units are abated by the oxidation catalyst at a rate greater than or equal to 70 percent over uncontrolled emission levels, calculated on a 3 hour rolling average. Verification of the emissions reduction shall be completed in accordance with 40 C.F.R. 63 Subpart ZZZZ. This Condition does not apply during Startup or Shutdown Periods or during malfunctions. [40 C.F.R. 63 Subpart ZZZZ]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

Engines S-11 and S-12

AQ-142 The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, in excess of the hour limits listed in Table 6.1 below [NCUAQMD Rule 102 §5.0]:

Table 6.1 S-11 and S-12 Hourly Operating Limits

Device	Daily	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
S-11	1	12	12	13	13
S-12	1	12	12	13	13

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-143 The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, within the same 24 hour period. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-144 The Permittee shall not operate the reciprocating engines S-11 and S-12, for the purpose of maintenance and testing, when any of the reciprocating engines S-1 through S-10 are operating in diesel mode. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-145 The Permittee shall not operate reciprocating engine S-11, for the purpose of maintenance and testing, for more than 45 minutes in any 60 minute period. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

REPORTING & RECORDKEEPING

AQ-146 The Permittee shall report all occurrences of breakdowns of the equipment listed in Table 1.0 Authorized Emission Devices or Table 2.0 Authorized Control Devices which result in the release of

emissions in excess of the limits identified in this Permit. Said report shall be submitted to the NCUAQMD in accordance with the timing requirements of NCUAQMD Rule 105 §5.0.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-147 The Permittee shall maintain a Breakdown log that describes the breakdown or malfunction, includes the date and time of the malfunction, the cause of the malfunction, corrective actions taken to minimize emissions and the date and time when the malfunction was corrected. [NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-148 The Permittee shall immediately record the following information when an event occurs where emissions from the equipment listed in Table 1.0 Authorized Emission Devices are in excess of any limits incorporated within this permit:

A. Date and time of the excess emission event

B. Duration of the excess emission event

C. Description of the condition or circumstance causing or contributing to the excess emission event

D. Emission unit or control device or monitor affected

E. Estimation of the quantity and type of pollutants released

F. Description of corrective action taken

G. Actions taken to prevent reoccurrence of excess emission event.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-149 The Permittee shall provide to the NCUAQMD, a completed "Compliance Certification" form signed by the Facility's Responsible Official which certifies the compliance status of the facility twice per calendar year. The compliance certification form must be submitted to the NCUAQMD according to the following schedule: The semiannual certification (covering quarters 1 and 2) must be submitted prior to July 31st of the reporting year; and the annual certification (covering quarters 1, 2, 3, and 4) prior to March 1st of the following calendar

year. The content of the Certification shall include copies of the records designated in Table 7.0 to be kept “Annually”.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-150 The Permittee shall maintain a monthly log of usage for the Emergency IC Diesel Generators S-11 and S-12 in accordance with applicable Reporting Requirements for Emergency Standby Engines, Item (e)(4)(I) of Section 93115, Title 17, California Code of Regulations, Air Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) engines. The monthly log of usage shall list and document the nature of use for each of the following by recording the hour meter readings for each operational event:

A. Emergency use hours of operation;

B. Maintenance and testing hours of operation (e.g., load testing, weekly testing, rolling blackout, general power outage, etc

C. Hours of operation for emission testing to show compliance with §93115(e)(2)(A)3 and (e)(2)(B)3 of the ATCM;

D. Hours of operation to comply with requirements of NFPA 25;

E. Hours of operation for all other uses other than those specified in Section (e)(2)(A)3 and (e)(2)(B)3 of the ATCM;

F. Fuel used through the retention of fuel purchase records that account for all fuel used in the engine and all fuel purchased for use in the engine, and, at a minimum, contain the following information for each individual fuel purchase transaction:

   1. Identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure;

   2. Sulfur content of the fuel;

   3. Amount of fuel purchased;

   4. Date when the fuel was purchased;

   5. Signature of owner or operator or representative of Permittee who received the fuel; and

   6. Signature of fuel provider indicating fuel was delivered.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-151 The Permittee shall continuously maintain onsite for the most recent five year period and shall be made available to the NCUAQMD APCO upon request, the records as listed in Table 7.0 below.

Table 7.0 Required Records for Engines S-1 through S-10

Frequency	Information to be Recorded
Upon Occurrence	A. Records of maintenance conducted on engines (40 C.F.R. 60 Subpart IIII) B. Time, duration, and fuel firing mode for each engine startup C. Time, duration, and fuel firing mode for each engine shutdown D. Time, duration and reason for each period of operation in Diesel Mode E. For each bulk delivery of diesel fuel received, certification from the supplier that the diesel fuel meets or exceeds CARB Diesel specifications F. For each bulk delivery of diesel fuel received, the higher heating value (HHV) and sulfur content of the fuel G. Fuel Mode – each operating minute shall be designated as either "Natural Gas" or "Diesel Mode"
At least one electronic reading every 15 minutes	A. NOx (ppmvd @15% O_2) B. CO (ppmvd @15% O_2) C. O_2 (%) D. Exhaust gas temperature as SCR inlet (˚F) E. Exhaust gas temperature at OC inlet (˚F) F. Engine load (%)
Hourly (for each engine)	A. NOx (ppmvd @15% O_2) and lb/hr, on a rolling 3 hour average B. CO (ppmvd @15% O_2) and lb/hr, on a rolling 3 hour average C. ROC (ppmvd @15% O_2) and lb/hr, on a rolling 3 hour average D. NH3 (ppmvd @15% O_2) and lb/hr, on a rolling 3 hour average E. SOx (ppmvd @15% O_2) and lb/hr, on a rolling 3 hour average F. Natural gas fuel consumption (MMBtu HHV, 3-hr rolling average) G. Diesel fuel consumption during Diesel Mode (MMBtu HHV, 3-hr rolling average) H. Volumetric proportion of natural gas to diesel pilot injection when operating in Natural Gas Mode
Daily	A. NOx (lbs/day, total for all engines) B. CO (lbs/day, total for all engines) C. ROC (lbs/day, total for all engines) D. SOx (lbs/day, total for all engines)

Frequency	Information to be Recorded
	E. PM (lbs/day, total for all engines) F. Diesel Particulate Matter (lbs/day, total for all engines) G. Natural gas fuel consumption (MMBtu HHV, for each engine and total for all engines) H. Diesel pilot fuel consumption (MMBtu HHV, all engines combined) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV, for each engine and total for all engines) J. Engine load (% load on a 24 hour average for each engine and total for all engines) K. Hours of operation (each engine and total for all engines as a sum of operating minutes) L. Quantity of fuel combusted (therms and gallons for each engine and total for all engines)
Monthly	A. Sulfur content of natural gas (gr/100scf, monthly fuel testing) B. Natural gas sulfur content (gr/100scf, 12 month rolling average)
Quarterly (combined total for all engines)	A. NOx (tons) B. CO (tons) C. SOx (tons) D. ROC(tons) E. PM (tons) F. Diesel Particulate Matter (tons) G. Natural gas fuel consumption (MMBtu HHV) H. Diesel pilot fuel consumption (MMBtu HHV) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV) J. Sulfur content of natural gas (gr/100scf, 12 month rolling average) K. Hours of operation (for each fuel mode) L. Quantity of fuel combusted (therms, gallons)
Annually (combined total for all engines)	A. NOx (tons) B. CO (tons) C. SOx (tons) D. ROC(tons) E. PM (tons) F. Diesel Particulate Matter (tons) G. Natural gas fuel consumption (MMBtu HHV) H. Diesel pilot fuel consumption (MMBtu HHV) I. Diesel fuel consumption during Diesel Mode (MMBtu HHV) J. Sulfur content of natural gas (gr/100scf, annual average) K. Hours of operation (for each fuel mode) L. Quantity of fuel combusted (therms, gallons)

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

AQ-152 For each Quarter, the Permittee shall submit a written report to the APCO detailing the following items for the operation of the CEMS. The report shall conform to the requirements of NCUAQMD Rules and Regulations Appendix B, Section 2.2, and shall be submitted within 30 days of the end of the quarter.

A. Time intervals;

B. Date and magnitude of excess emissions;

C. Nature and cause of excess (if known);

D. Corrective actions taken and preventive measures adopted;

E. Averaging period used for data reporting shall correspond to the averaging period for each respective emission standard;

F. Applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and

G. A negative declaration when no excess emissions occurred.

Verification: The project owner shall submit to the CPM and APCO quarterly monitoring reports that include updates to the semi-annual monitoring results (**AQ-SC9**).

AQ-153 The Permittee shall provide notification and record keeping as required pursuant to 40 C.F.R., Part 60, Subpart A, 60.7.

Verification: No verification needed.

AQ-154 The Permittee shall annually prepare and submit a comprehensive facility wide emission inventory report for all criteria pollutants and toxic air contaminants emitted from the facility. The inventory and report shall be prepared in accordance with the most recent version of the CAPCOA / CARB reference document *Emission Inventory Criteria Guidelines*. The inventory report shall be submitted to the NCUAQMD APCO no later than March 1st of the following calendar year. The inventory report is subject to NCUAQMD APCO approval. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to the CPM and APCO the annual operational reports that include monitoring and compliance results (**AQ-SC9** and **AQ-20**).

AQ-155 The Permittee shall submit the health risk assessment protocol to the NCUAQMD APCO for review no later than 9 months after the

Commissioning Period for the reciprocating engines S-1 through S-10 has concluded. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit to both the District and CPM for approval the health risk assessment protocol within 9 months after the commissioning period.

AQ-156 No later than 14 months after the Commissioning Period for reciprocating engines S-1 through S-10 has concluded, the Permittee shall submit to the NCUAQMD APCO a revised health risk assessment. The health risk assessment shall be prepared pursuant to an NCUAQMD APCO approved protocol based upon CARB and California Office of Health and Hazard Assessment guidance documents. *[NCUAQMD Rule 102 §5.0]*

Verification: The project owner shall submit to both the District and CPM the revised health risk assessment within 14 months after the commissioning period.

AQ-157 Not later than 24 hours after determining that diesel mode operation is to occur as a result of an expected Natural Gas Curtailment, the permittee shall notify the APCO by telephone, email, electronic page, or facsimile. The notification shall include, but not be limited to, the following *[NCUAQMD Rule 102 §5.0]*:

A. The anticipated start time and duration of operation in diesel mode under the Natural Gas Curtailment; and

B. The anticipated quantity of Diesel fuel expected to be burned under the Natural Gas Curtailment.

Verification: The project owner shall submit to both the District and CPM the notification within 24 hours after determining that diesel mode operation is to occur.

AQ-158 Not later than 24 hours following the end of a period of any diesel mode operation, the permittee shall notify the APCO by email or facsimile of the following [NCUAQMD Rule 102 §5.0]:

A. The actual start time and end time of the period of diesel mode operation;

B. The identification of the Reciprocating engines that were operated and the average load at which each reciprocating engine was operated on Diesel fuel during the diesel mode operating period; and

C. The actual quantity of Diesel fuel consumed during the diesel mode operation.

Verification: The project owner shall submit to both the District and CPM the notification within 24 hours after the end of diesel mode operation.

TESTING & COMPLIANCE MONITORING

AQ-159 The Permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 C.F.R. Part 60, Appendix F.

Verification: No verification needed.

AQ-160 The Permittee shall monitor and record exhaust gas temperature at the inlet and at the outlet of the oxidation catalyst. [40 C.F.R. 63 Subpart ZZZZ]

Verification: A summary of significant operation and maintenance events and monitoring records required (**AQ-151**) shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-161 Not less than thirty days prior to the date of any source test required by this Permit, the Permittee shall provide the NCUAQMD APCO with written notice of the planned date of the test and a copy of the source test protocol.

Verification: The project owner shall submit the proposed protocol for the source tests 30 days prior to the proposed source test date to both the District and CPM for approval.

AQ-162 Source test results shall be summarized in a written report and submitted to the NCUAQMD APCO directly from the independent source testing firm on the same day, the same time, and in the same manner as submitted to Permittee. Source Test results shall be submitted to the NCUAQMD APCO no later than 60 days after the testing is completed.

Verification: The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-163 The Permittee shall demonstrate compliance with all the emission limits identified in this Permit during the Commissioning Period of each of the reciprocating engines S-1 through S-10 using the following methods. Testing shall be conducted both while the engines are operated in Natural Gas Mode and while operated in Diesel Mode. All compliance tests shall be conducted at 50 percent, 75 percent, and 95 percent or greater of the operating capacity of each reciprocating engine. Alternative test methods may be approved by the APCO.

A. Particulate Matter – CARB Method 5 (front and back half) or EPA Methods 201a and 202.

B. Diesel Particulate Matter – CARB Method 5 (front half).

C. Visible Emissions.

1. Permittee shall perform a “Visible Emission Evaluation” (VEE)

concurrent with particulate matter testing. A CARB certified contractor shall perform such an evaluation.

D. Ammonia – Bay Area Air Quality Management NCUAQMD Method ST-1B.

E. Reactive Organic Gases – CARB Method 100.

F. Nitrogen Oxides – CARB Method 100.

G. Carbon Monoxide – CARB Method 100 & ASTM D6522-00 [NESHAP ZZZZ].

H. Oxygen – CARB Method 100 & ASTM D6522-00 [NESHAP ZZZZ].
   1. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst.
   2. Oxygen measurements shall be made at the same time as the CO measurements.
   3. Pressure drop measurements across the catalyst shall be made at the same time as the CO measurements.

I. Natural Gas Fuel Sulfur Content – ASTM D3246.

J. Liquid Fuel Sulfur Content – ASTM D5453-93.

Verification: The project owner shall submit the proposed protocol for the source tests 30 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 7 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-164 The Permittee shall demonstrate compliance with all the emission limits identified in this Permit for the reciprocating engines S-1 through S-10 once per calendar year unless indicated below, using the following methods. Except as provided in Condition #123, testing shall be conducted while the engines are operated in Natural Gas Mode. All compliance tests shall be conducted at an operating capacity of 50 percent, 75 percent, or 95 percent or greater during the testing of each reciprocating engine. Alternative test methods may be approved by the APCO. [NCUAQMD Rule 102 §5.0]

A. Particulate Matter – CARB Method 5 (front and back half) or EPA Methods 201a and 202.

B. Diesel Particulate Matter – CARB Method 5 (front half).

C. Visible Emissions - Permittee shall perform a “Visible Emission Evaluation” (VEE) concurrent with particulate matter testing. A CARB certified contractor shall perform such an evaluation.

D. Ammonia – Bay Area Air Quality Management NCUAQMD Method ST-1B.

E. Reactive Organic Gases – CARB Method 100.

F. Nitrogen Oxides – CARB Method 100.

G. Carbon Monoxide – CARB Method 100.

H. Oxygen – CARB Method 100.

1. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst.

2. Oxygen measurements shall be made at the same time as the CO measurements.

3. Pressure drop measurements across the catalyst shall be made at the same time as the CO measurements.

I. Natural Gas Fuel Sulfur Content – ASTM D3246.

J. Liquid Fuel Sulfur Content – ASTM D5453-93.

Verification: The project owner shall submit the proposed protocol for the source tests 30 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 7 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-165 The engines shall be tested on a rotating basis with all of the engines to be tested in natural gas mode each year and all engines tested at the three different load values at least once every three years; and that each engine is tested at a different load each year. Each engine shall be tested, at the following loads (50 percent, 75 percent , ≥95 percent) or under conditions determined by the APCO to most challenge the emission control equipment. The APCO may waive some or all of the testing requirements if the results of previous compliance tests have demonstrated compliance with permitted emission limits by a sufficient margin. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-164**.

AQ-166 Permittee shall demonstrate compliance with permitted emission limits for Engines S-1 through S-10 while operating in Diesel Mode once every three years or following each 200 hours of operation of an individual engine in Diesel mode whichever is sooner. Compliance shall be demonstrated as indicated below using the following methods. All compliance tests shall be conducted while an engine is operated in Diesel mode at 50 percent, 75 percent or 95 percent or greater operating capacity of each engine; or under conditions determined by the APCO to most challenge the emission control equipment. Alternative test methods may be approved by the APCO [NCUAQMD Rule 102 §5.0]:

A. Particulate Matter - CARB Method 5 (front and back half), or EPA Methods 201a and 202.

B. Diesel Particulate Matter – CARB Method 5 (front half only).

C. Visible Emissions - U.S. EPA Method 9.

D. Ammonia – Bay Area Air Quality Management NCUAQMD Method ST-1B.

E. Reactive Organic Gases – ARB Method 100.

F. Nitrogen Oxides -- ARB Method 100.

G. Carbon Monoxide – ARB Method 100.
   1. CO shall be measured at the inlet and outlet of the oxidation catalyst.

H. Oxygen – ARB Method 100.
   1. Oxygen shall be measured at the inlet and outlet of the oxidation catalyst.

   2. Oxygen measurements shall be made at the same time as the CO measurements.

I. Liquid Fuel Sulfur Content – ASTM D5453-93.

Verification: The project owner shall submit the proposed protocol for the source tests 30 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 7 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-167 The engines shall be tested at various loads (50 percent, 75 percent, ≥95 percent) on a rotating basis, with one-third of the engines to be tested in diesel mode in each year; and tested at each of the three

loads. The APCO may waive some or all of the testing requirements if the results of previous compliance tests have demonstrated compliance with permitted emission limits by a sufficient margin. The engines shall be tested on a rotating basis with all engines tested at the three different load values at least once every nine years; and that each engine is tested at a different load each rotation. [NCUAQMD Rule 102 §5.0]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-166**.

AQ-168 The Permittee shall demonstrate compliance with the hourly, daily, and annual ROC emission limits through the use of valid CO CEM data and the ROC/CO relationship determined by annual CO and ROC source tests; and APCO approved emission factors and methodology. [40 C.F.R. 63 Subpart ZZZZ; NCUAQMD Rule 102 §5.0]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-169 The Permittee shall demonstrate compliance with the hourly, daily, and annual SOx emission limits through the use of valid fuel use records, natural gas sulfur content, diesel fuel sulfur content, mass balance calculations; and APCO approved emission factors and methodology. The natural gas sulfur content shall be determined on a monthly basis using ASTM D3246. [NCUAQMD Rule 102 §5.0, PSD]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-170 The Permittee shall demonstrate compliance with the hourly, daily, and annual PM emission limits, and the diesel particulate matter emission limits, through the use of valid fuel use records, source tests, and APCO approved emission factors and methodology. [NCUAQMD Rule 102 §5.0, PSD]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-171 Relative accuracy test audits (RATAs) shall be performed on each CEMS at least once every twelve months, in accordance with the requirements of 40 C.F.R. 60, Appendix B. Calibration Gas Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The NCUAQMD shall be notified in writing at least 30 days in advance of the scheduled

date of the audits. Audit reports shall be submitted along with quarterly compliance reports to the NCUAQMD within 60 days after the testing was performed.

Verification: The project owner shall submit to the CPM and APCO quarterly results of relative accuracy test audits (RATAs) as updates to the semi-annual monitoring results (**AQ-SC9**).

LOCAL ENFORCEABLE ONLY, EQUIPMENT-SPECIFIC REQUIREMENTS

FUEL USAGE

AQ-172 The Emergency IC Diesel Generators S-11 and S-12 shall use one of the following fuels:

A. CARB Diesel Fuel, or

B. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in Cal. Code Regs., tit. 13 § 2700-2710), or

C. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in Cal. Code Regs., tit. 13 §§ 2700-2710), or

D. Any combination of a) through d) above.

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission upon request.

EMISSIONS

AQ-173 The Permittee shall not discharge diesel particulate matter from reciprocating engines S-1 through S-10 while operating in Diesel Mode such that emissions of Diesel Particulate Matter exceed 0.15 g/bhp-hr. [Cal. Code Regs., tit. 17 § 93115.]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with condition **AQ-166**.

OPERATIONAL CONDITIONS

AQ-174 While operating the reciprocating engines S-1 through S-10 in Diesel Mode, the Permittee shall fire the engines for no more than 50 hours per year for each engine for Maintenance and Testing. [Cal. Code Regs., tit. 17 § 93115.]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AQ-175 The Emergency IC Diesel Generators S-11 and S-12 are authorized the following maximum allowable annual hours of operation as listed in Table 6.0 below *[*Cal. Code Regs., tit. 17 § 93115] :

Table 6.0 Hours of Operation for Emergency IC Diesel Generators S-11 & S-12

Emergency Use	Non-Emergency Use	
	Emission Testing to Show Compliance	Maintenance & Testing
Not Limited by the ATCM	Not Limited by the ATCM	50 hours/year

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the semi-annual operational report (**AQ-SC9**).

AMBIENT MONITORING

AQ-176 No later than 180 days after construction of the equipment authorized pursuant to this permit begins, and concurrent with the commencement of operation, the Permittee shall provide full funding for the purchase and installation of a new monitoring station (Shelter; CO, NOx, PM10/PM2.5, and other sampling equipment as determined by the APCO) to be installed at a location approved by the APCO. The funding shall include all costs associated with the purchase, installation, operation and maintenance (including personnel costs) of the monitoring station for an initial period of not less than five (5) years. PG&E shall reimburse the District for costs incurred within 30 days of receiving an invoice from the District. At the conclusion of that period, the APCO may extend the operation of the site if deemed in the best interest of the District, and PG&E will continue to fund all costs associated with its continued operation. The District shall manage the procurement, operation and maintenance of the site, and District staff will be responsible for collecting, securing, and quality assuring all data. [District Rule 102 §5.0]

Verification: The project owner shall certify providing the District full funding for the ambient air quality monitoring station. A copy of the letter certifying funding shall be submitted to the CPM within 15 days of issuance.

AQ-177 No later than 180 days after construction of the equipment authorized pursuant to this permit begins, and concurrent with the commencement of operation, the Permittee shall provide full funding for the purchase and installation of a new meteorological monitoring station to be installed at a location approved by the APCO. The funding shall include all costs associated with the purchase, installation, operation and maintenance (including personnel costs) of the meteorological monitoring station for an initial period of not less than

five (5) years. PG&E shall reimburse the District for costs incurred within 30 days of receiving an invoice from the District. At the conclusion of that period, the APCO may extend the operation of the site if deemed in the best interest of the District, and PG&E will continue to fund all costs associated with its continued operation. The District shall manage the procurement, operation and maintenance of the site, and District staff will be responsible for collecting, securing, and quality assuring all data. The data collected at the station shall meet the requirements of EPA-454/R-99-005 "Meteorological Monitoring Guidance for Regulatory Modeling Applications" February 2000. [District Rule 102 §5.0]

Verification: The project owner shall certify providing the District full funding for the meteorological station. A copy of the letter certifying funding shall be submitted to the CPM within 15 days of issuance.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential public health effects from project emissions of toxic air contaminants. In this analysis, we review the evidence concerning whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Evidence consisting of analysis conducted separately by Applicant and Staff has examined the potential public health risks associated with construction and operation of the proposed Humboldt Bay Repowering Project. The 10 Wärtsilä internal combustion engines driving the generators would normally use fuel consisting of natural gas with a diesel pilot. However, the power plant would use 100 percent diesel fuel in the event natural gas supplies were curtailed or interrupted.

Prior to the evidentiary hearing, Applicant proposed several project modifications that reduced the health risks to below levels of significance. These modifications included raising the exhaust stack heights to improve air dispersion characteristics and reducing the hours of operation when operating on diesel fuel alone. In addition, Applicant determined that annual emission testing could be safely reduced and demonstrated that particulate matter from the HBRP would be reduced by the proposed oxidation catalyst treatment of exhaust from the engines. (Exs. 1, pp. 8.9-9 to 8.9-15; 45; 65; 200, p. 4.7-1.)

Testimony presented by Applicant and by Staff, concluded that the project as currently proposed would not result in a significant human health risk or hazard. No acute or chronic non-cancer hazard was found to exist due to emissions when using natural gas or diesel fuel. The evidence of record establishes that,

with the implementation of the Conditions of Certification, the risk of cancer related to the project is less than significant and that no acute (short-term) or chronic (long-term) non-cancer health impacts would be expected to occur to any members of the public including low income and minority populations. (*Id*.)

1. Setting

The HBRP is located in an area considered complex terrain for the purposes of analyzing potential public health impacts from project emissions. The terrain in the vicinity of the project rises rapidly from Humboldt Bay on the north side to an elevation of approximately 69 feet mean lower low water (MLLW) at Buhne Point peninsula. (6/17/08 RT 55.) Terrain to the north and east of the site is generally flat. To the south and east, the terrain rises rapidly, forming Humboldt Hill, which reaches an elevation of over 500 feet within two miles of the project and is the site of several small neighborhoods. Humboldt County is mostly mountainous except for the level plain that surrounds Humboldt Bay. The coastal hills surrounding the bay greatly modify the rainfall and temperatures of the region by creating a rain shadow and sheltering the region from the brunt of the heavier rainfall and temperature extremes. (Exs. 1, § 8.1.1.1; 200, p. 4.7-4.)

Colder, more stagnant weather conditions during the November through March rainy season are conducive to the buildup of particulate matter (PM), including the formation of secondary ammonium nitrate. In addition, increased emissions from residential fireplaces and wood stoves during this time of year contribute to increased direct particulate emissions. (Exs. 1, § 8.1.1.2; 200, p. 4.7-5.)

There are two sensitive receptors within a one-mile radius of the HBRP: (1) The South Bay Elementary School at 6077 Loma Avenue, Eureka, is within a half-mile; and (2) a senior home, the Sun Bridge Seaview Care Center, 6400 Purdue Drive, Eureka, is within a mile. Both are to the southeast of the project site. (Exs. 1, Appendix 8.9A; 200, p. 4.7-4.)

2. Impacts Assessment

By examining average toxic concentration levels from representative air monitoring sites in the project vicinity with cancer risk factors specific to each contaminant, lifetime cancer risk can be calculated to provide a background risk level for inhalation of ambient air.[6]

Staff and Applicant relied on information found in the California Air Resources Board Toxic Emission Factors (CATEF) database for the rate of emissions of toxic air contaminants from the project's 10 diesel engines. Air dispersion models approved by both the United States and California Environmental Protection Agencies (U.S. EPA and Cal-EPA) were used to estimate the airborne concentration of toxic air contaminants that would occur in the vicinity of the project. The modeling results were then used to conduct a human health risk assessment to determine the potential for a significant human health hazard resulting from either an acute (short-term), chronic (long-term) non-cancer health impacts and the risk of cancer. (Ex. 200, p. 4.7-1.)

a. Significance Criteria

Air pollutants for which no ambient air quality standards have been established are called non-criteria pollutants. Unlike criteria pollutants such as ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide, non-criteria pollutants have no ambient (outdoor) air quality standards that specify levels considered safe for everyone. Since non-criteria pollutants do not have such standards, a health risk assessment is used to determine if people might be exposed to those types of pollutants at unhealthy levels. The risk assessment consists of the following steps:

[6] For comparison purposes, it should be noted that the overall lifetime cancer risk for the average individual in the United States is about 1 in 4, or 250,000 in one million. (Ex. 200, p. 4.7-5.)

- Identify the types and amounts of hazardous substances that HBRP could emit to the environment;
- Estimate worst-case concentrations of project emissions in the environment using US EPA approved air dispersion modeling;
- Estimate amounts of pollutants that people could be exposed to through inhalation, ingestion, and dermal contact; and
- Characterize potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 200, p. 4.7-6.)

Initially, a screening level risk assessment was performed for the HBRP using simplified assumptions that are intentionally biased toward protection of public health. This analysis overestimates public health impacts from exposure to project emissions. In reality, it is likely that the actual risks from the power plant will be much lower than the risks as estimated by the screening level assessment. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case risks, and then using those conditions in the study. Such conditions include:

- Using the highest levels of pollutants that could be emitted from the plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using the type of air quality computer model that predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses).

Since these assumptions are unrealistic and greatly overstate the potential impacts, if a project's impacts are below the significance threshold, the analysis ensures that there will not be a significant public health risk to any person at any location under any circumstances. (Ex. 200, p. 4.7-6.)

Cancer Risk. Carcinogenic or cancer risk is the probability or chance of contracting cancer over a human life span, assumed to be 70 years. Carcinogens are assumed to have no threshold below which there would be no human health impact. Thus, any exposure is assumed to have some probability of causing cancer. Under state regulations, an incremental cancer risk of less than or equal to 10 in one million due to a project that uses Toxics-Best Available Control Technology is considered to be a less than significant impact on public health.[7] (Ex. 1, p. 8.9-8.)

Non-cancer Risk. The analysis for noncancerous health effects compares the maximum project contaminant levels to safe levels called "reference exposure levels" or RELs. These are amounts of toxic substances to which even sensitive people can be exposed and suffer no adverse health effects. (Ex. 200, p. 4.7-7.) These exposure levels are designed to protect the most sensitive individuals in the population such as infants, the aged, and people suffering from illness or disease that make them more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effect reported in the medical and toxicological literature and include margins of safety. Health protection is achieved if the estimated worst-case exposure is below the REL. In such a case, an adequate margin of safety exists between the predicted exposure and the estimated threshold dose for toxicity.

b. Construction Impacts and Mitigation

The initial construction of the HBRP is expected to last approximately 21 months, including one month of road construction, two months of site clearing and 18

[7] The Commission staff witness noted that the Proposition 65 significance level applies separately to each cancer-causing substance, whereas Commission staff determines significance based on the total risk from all cancer-causing chemicals. Thus, the manner in which the significance level is applied by Staff in a power plant case is more conservative (health-protective) than that which applies to Proposition 65. (Ex. 200, 4.7-9.)

months of project construction. Emissions due to the construction phase of the project have been estimated, including an assessment of emissions from vehicle and equipment exhaust and the fugitive dust generated from material handling. A dispersion modeling analysis was conducted based on these emissions. A detailed analysis of the emissions and ambient impacts is included in the **Air Quality** section of this Decision.

Applicant and Staff also evaluated Impacts from exposure to diesel particulate matter (DPM) generated during project construction. The carcinogenic risk due to exposure to DPM during construction activities is expected to be between approximately 5 and 8 in 1 million, and thus is less than the significance level of 10 in 1 million. Furthermore, the area in which the risk may exceed 1 in 1 million (DPM impact greater than or equal to approximately 0.1 µg/m3) extends only about 700 meters beyond the facility fence line and does not include any residences. (Ex. 1, § 8.1.2.10; Ex. 200, p. 4.7-10.)

The Applicant estimated worst-case construction-related hourly dust emissions of 3.8 lb/day of particulate matter less than 10 microns (PM10) and .8 lb/day of particulate matter less than 2.5 microns (PM2.5). In addition to construction-related dust, diesel emissions are generated from sources such as trucks, graders, cranes, welding machines, electric generators, air compressors, and water pumps. Mitigation for these particulates includes the use of extensive fugitive dust control measures.[8] The fugitive dust control measures are assumed to result in 90 percent reductions of emissions. (Ex. 200, p. 4.7-11.)

c. Operation Impacts and Mitigation

Once the HBRP begins operation, the emissions sources at the proposed HBRP site would include ten (10) reciprocating internal combustion engines, an

[8] Mitigation for construction-related dust and particulates are found in the conditions of certification which follow the **Air Quality** section of this Decision.

emergency diesel generator, and a diesel fire pump engine. Applicant's AFC detailed the emissions from each of these sources. (Ex. 1, Tables 8.1A-8 Table 8.1A-8 [non-criteria pollutants emitted from turbines]; Table 8.1A-4 [emission rates from emergency diesel generators]; Table 8.1A-5 [emission rates from diesel fire pump engine emissions]). Staff's testimony lists toxic emissions from the above emission sources and shows how each contributes to the health risk assessment. (Ex. 200, p. 4.7-12, Table 2.)

The Staff expert witness testified that the analysis carried out by Applicant and that conducted by Staff each found the project would have no significant acute hazard due to short-term exposure and no chronic hazard of any non-cancer impact. Furthermore, both Applicant and Staff analyses found there would be no significant risk of cancer when the project is operating using natural gas. However, an issue arose about whether there could be a significant risk of cancer from emissions of diesel particulate matter emitted when the generator engines run on diesel fuel, rather than natural gas. (6/17/08 RT 52-53.)

Both Staff and Applicant carried out their respective analyses using different air dispersion models. Staff used a health-protective methodology that accounts for impacts to the most sensitive individuals in a given population, including newborns and infants. Applicant used the same emission factors, yet arrived at a different theoretical maximum cancer risk. The Staff expert opined that the difference between the two results is most likely due to the different air dispersion models used. The Applicant used both the AERMOD and CTSCREEN models while staff used the AERMOD model. Both models are EPA-approved and are approved for use by the Office of Environmental Health Hazard Assessment (OEHHA) in human health risk assessments when complex (elevated) terrain is present, such as in this case. (Ex. 200, p. 4.7-16.)

While the different models yielded different results, the Staff witness characterized the results as "very close." (6/17/08 RT 54:21.) The witness

testified that neither of the two air dispersion models used by Staff and Applicant was superior to the other. In the witness's professional judgment the results of the two modeling efforts allowed him to determine that there would not be a significant cancer risk to the public from project operation using diesel fuel. (Exs. 65, p. 6; 200, p. 4.7-19; 6/17/08 RT 52.)

The Applicant and Staff have identified several mitigation measures which were analyzed in the modeling and which will reduce emission impacts on public health to a less than significant level. The measures include:

- Reduce emissions of diesel particulate matter due to the use of an oxidative catalyst.
- Mitigation monitoring to ensure performance of the oxidation catalysts
- Restrict hours of using diesel fuel to 510 hours per year (total from all 10 engines) and when routine discretionary testing could occur.[9]

d. Cumulative Impacts

The maximum cancer risk for emissions from the HBRP (calculated by Staff) is less than 10 in one million at a location east of the facility boundary. The maximum impact location occurs where pollutant concentrations from the HBRP would theoretically be the highest. However, the evidence establishes that HBRP's contribution to a cumulative public health risk is less than significant with the adoption the proposed **Public Health** Conditions of Certification.

The worst-case long-term (chronic) and short-term (acute) noncancerous health impacts from HBRP are below the significance level of 1.0 at the location of maximum impact. As a result, there are no incremental or cumulative health impacts due to emissions from the proposed power plant. The long-term hazard

[9] Condition of Certification **PUBLIC HEALTH-1** provides an exception of up to 650 hours of diesel operation to allow for commissioning and compliance testing during the first year of plant operation.

would also be lower at all other locations. The regional cumulative air quality impacts analysis contained in the evidentiary record demonstrates that the cumulative impacts of the project would be no different than the direct impacts of the project itself which, as mitigated, will be less than significant. (Exs. 1, p. 8.9-15; 200, p. 4.7-18.)

FINDINGS AND CONCLUSIONS

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

1. Construction and normal operation of the HBRP will result in the routine release of criteria and non-criteria pollutants, identified in the evidentiary record, that have the potential to adversely impact public health.

2. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

3. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of toxic air contaminants.

4. The record contains analysis using two different air dispersion models, both of which are acceptable to state and federal regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic and carcinogenic public health effect of diesel particulates.

5. Emissions of criteria pollutants, which are discussed in the **Air Quality** section of this Decision, will be mitigated to levels consistent with applicable standards.

6. Application of the hazard index method establishes that emission of non-criteria pollutants from the HBRP will not cause significant acute or chronic adverse public health effects.

7. The maximum non-cancer risk associated with the project is below the significance thresholds commonly accepted for risk analysis purposes.

8. Evidence of record, including expert testimony, establishes that the HBRP will not pose a significant risk of cancer as a result of diesel emissions from the project.

9. No acute (short-term) or chronic (long-term) non-cancer health impacts would be expected to occur to any members of the public including low income and minority populations.

10. Mitigation measures contained in the Conditions of Certification will limit the number of hours during which the HBRP will operate on diesel fuel.

11. Mitigation measures contained in the Conditions of Certification will require a health risk assessment and compliance testing to verify emissions on an hourly and yearly basis.

12. Cumulative impacts from non-criteria pollutants were analyzed in accordance with the provisions of CEQA. Impacts from the HBRP emissions of these pollutants are not significant.

13. Emissions from the construction, operation, and closure of the proposed HBRP will not have a significant adverse impact on the public health of the surrounding population.

We therefore conclude that project emissions of non-criteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk and that the project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

PUBLIC HEALTH-1 The project owner shall not operate the Wartsila engines on diesel fuel for a period exceeding 510 hours per year total for all 10 engines, with the exception of the first year when commissioning and compliance testing is required and the hours may not exceed 650. Once the health risk assessment prepared pursuant to **PUBLIC HEALTH-2** is approved by the CPM, the CPM will notify the project owner of the total number of engine hours on diesel fuel the project may operate annually, as determined by what the health risk assessment shows as the maximum number of hours that achieve a theoretical maximum cancer risk at the point of maximum impact of less than 10 in one million and acute and chronic Hazard Indices of less than 1.0. The CPM may also,

based upon the results of the compliance testing and the health risk assessment, allow the use of an emission rate in pounds per year (lbs/yr) of diesel particulate matter as the limitation of operation when on diesel fuel in lieu of hours per year so long as the CPM can verify the emissions on a daily and yearly basis through objective criteria. The 510 total hours of operation for all engines using diesel fuel, and any subsequently adjusted number of hours, shall not include time needed for compliance testing required as per condition **AQ-167** if the testing is conducted when the wind direction is out of the east or south east.

Verification: The project owner shall provide hourly logs of diesel fuel usage to the CPM in the Annual Compliance Report Summary. The log shall include the unit number, duration, purpose (annual compliance testing, natural gas curtailment or emergency), and wind direction.

PUBLIC HEALTH-2 The project owner shall provide the results of a source test using diesel fuel on the number of engine exhaust stacks required below and a human health risk assessment (HRA) to the Compliance Project Manager (CPM). The source test and human health risk assessment shall be conducted according to protocols reviewed and commented on by the North Coast Unified Air Quality Management District and reviewed and approved by the CPM, and shall be submitted to the CPM not less than 60 days after the date of starting commercial operations. The source test shall be consistent with and conducted at the same time as testing required under Condition of Certification **AQ-167**. The source test and HRA shall include the quantitative analysis and assessment of the following toxic air contaminants: diesel particulate matter in the exhaust stream both before and after the oxidative catalyst, acetaldehyde, acrolein, benzene, 1, 3-butadiene, ethyl benzene, formaldehyde, propylene, toluene, and xylenes.

The number of engine exhaust stacks to be sampled shall be determined in the following manner:

1. Four (4) engines chosen randomly shall be tested first. If stack testing results for each contaminant described above on all four engines falls within two standard deviations of the arithmetic mean of each individual contaminant, no further engines need be tested.

2. If any contaminants measured in the stack test fall outside two standard deviations of the arithmetic mean for that contaminant, three (3) engines chosen randomly shall be tested for all contaminants that fell outside two standard deviations of the arithmetic mean. If stack testing results for each contaminant described above on all seven engines tested fall within two

standard deviations of the arithmetic mean of each individual contaminant, no further engines need be tested. The project owner may request relief from this and further stack testing by providing the CPM a written request with documentation explaining that further testing would not result in a significant change in the health risk assessment results.

3. This process shall be continued until either the results for all engines tested fall within two standard deviations of the arithmetic mean of each individual contaminant for all engines tested or all ten (10) engines are tested.

4. The HRA described above shall be based on all data produced for all engines tested under this protocol.

This source testing shall be repeated three years after the initial source test and again after 10 years of commencing commercial operations.

Verification: Not less than 60 days after the start of commercial operations, the project owner shall provide a copy of the source test and human health risk assessment protocols to the NCUAQMD for review and comment and to the CPM for review and approval. Not less than 30 days after each group of source tests has been completed, the project owner shall provide the source test results to the NCUAQMD and the CPM. When the project owner has fulfilled the requirement for testing as described above, the project owner shall submit all test results and the HRA to the NCUAQMD for review and comment and to the CPM for approval within 60 days of the date of the last test or not later than 270 days after the date of starting commercial operations, whichever is sooner.

C. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. Implementation of various existing laws and standards will suffice to reduce these hazards to minimal levels. Therefore, this analysis focuses on whether Applicant's proposed health and safety plans will be adequate to protect industrial workers as well as provide fire protection and emergency response in accordance with all applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Worker Safety

Industrial environments are potentially dangerous during construction and operation activities. Workers at the proposed project will be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and various other injuries. They may be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. In addition, there is the risk of potential soil contamination due to the decommissioning activities associated with Unit 3. Thus, it is important for the HBRP to have well-defined policies and procedures, training, and hazard recognition and controls to minimize such hazards and protect workers.

The evidence of record is uncontested (6/17/08 RT 39-40) and extensively details the type and content of several plans which will be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. (Exs. 1, § 8.2; 200 pp. 4.14-1 to 4.14-14.) For example, the project owner will develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which

must be reviewed by the Compliance Project Manager prior to project construction and operation. Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Emergency Action Plans, Fire Protection and Prevention Plans, and other general safety procedures will be prepared for both the construction and operation phases of the project. (Exs. 1, § 8.12; 13; 45; 72; 200, pp. 4.14-5 to 4.14-12.) Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that these measures will be developed and implemented.

In addition, construction of the facility will occur simultaneously with decommissioning activities for Humboldt Bay Power Plant Unit 3 nuclear plant. Thusfar, radiological monitoring has shown that the site meets federal standards for public use. Currently, no special measures to protect workers appear warranted. However, a detailed radiological contamination study will be conducted for the HBRP site and any contaminated soil will be removed before construction begins. Furthermore, Conditions of Certification **WASTE-1** and **-2** require that a registered professional engineer or geologist be available during soil excavation and grading to ensure proper handling and disposal of any contaminated soil. (Ex. 200, pp. 4.14-4, 4.14-10.)

OSHA and Cal-OSHA standards encourage employers to monitor worker safety by employing a “competent person” who has knowledge and experience with enforcing OSHA/Cal-OSHA standards, can identify workplace hazards, and has authority to take appropriate action. (Ex. 200, p. 4.14-11.) To implement the intent expressed in OSHA/Cal-OSHA standards, Condition **WORKER SAFETY-3** requires the project owner to designate a power plant Construction Safety Supervisor to coordinate and implement the Construction and Operation Safety and Health programs and to investigate any safety-related incidents and emergency responses.

To reduce and/or eliminate safety hazards during project construction and operation, it is necessary to employ a professional Safety Monitor on-site to track compliance with OSHA/Cal-OSHA regulations and to periodically audit safety compliance during construction, commissioning, and the transition to operational status.[10] (Ex. 200, p. 4.14-11.) Condition **WORKER SAFETY-4** describes the role of a Safety Monitor, who is hired by the project owner but reports to the Chief Building Official (CBO) and CPM, and serves as an on-site OSHA expert to ensure that safety procedures and practices are fully implemented.

Finally, the project owner will maintain an automatic defibrillator on-site to provide immediate response in the event of a medical emergency.[11] Condition **WORKER SAFETY-5** requires the project owner to ensure that a portable automatic cardiac defibrillator is located on-site during construction and operation and that appropriate personnel are trained to use it.

2. Fire Protection and Prevention

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of diesel fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment may cause small fires. The on-site fire protection system provides the first line of defense. During construction, portable fire extinguishers will be located throughout the site within 100 feet from any work area and within 50 feet of any locations where flammable or combustible materials are stored.

[10] Safety audits conducted by Staff in 2005 and 2006 at CEC-certified power plants revealed safety and health hazards and LORS violations due to errors, misunderstandings, and/or the failure to properly train supervisors and workers. (Ex. 200, pp. 4.14-11 to 4.14-12.)

[11] Staff's testimony contends that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. Staff therefore endorses this as an appropriate safety and health precaution. (Ex. 200, pp. 4.14-13 to 4.14-14.)

The project owner will ensure extinguishers are fully charged and safety procedures and training will be implemented. (Ex. 200, p. 4.14-13.)

Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Fires and explosions of natural gas or other flammable gasses or liquids are rare. (Ex. 200, p. 4.14-12.) In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, are under the jurisdiction of the Humboldt Fire District #1 (HFD). Due to a mutual aid agreement, the resources of the City of Eureka Fire Department (EFD) are also available. (Ex. 200, pp. 4-14-3 to 4.14-4.)

During project operation, fire suppression elements will include both fixed and portable fire extinguishing systems. The fire water will be supplied from a water main on King Salmon Avenue, and stored in an on-site storage tank capable of holding the water required for 8-hours of fire suppression. From this firewater storage tank an underground loop system will connect to all fire hydrants and fixed fire suppression systems, with one electric, one Jockey, and one diesel fired pump maintaining water pressure. Fire hydrants will be located throughout the site not more than 250 feet apart in accordance with applicable codes. (Ex. 200, p. 4.14-13.)

An automatic fire protection system (water spray) will be provided for the control room administrative/maintenance building and a deluge system will be installed at the generator step-up for transformer protection. Portable carbon dioxide extinguishers will be located in areas with sensitive electrical equipment and one portable wheeled dry-chemical extinguisher will be located in the engine area. The fire detection system will have fire detection sensors to trigger alarms and automatically actuate the sprinkler system.

In addition to the fixed fire protection system, smoke detectors, flame detectors, temperature detectors, and appropriate class-of-service portable extinguishers and fire hydrants will be located throughout the facility at code-approved intervals. The evidence establishes that they will ensure adequate fire protection. (Ex. 200, pp. 4.14-13 to 4.14-14.)

Conditions of Certification **WORKER SAFETY-1** and **-2** require the project owner to provide the final Fire Protection and Prevention program to the HFD and to the CPM, for approval, prior to construction and operation of the HBRP.

3. Emergency Response

The first responder to the HBRP site is HFD Fire Station #12, approximately 2.5 miles away, with an estimated response time of 3-4 minutes. This station is capable of fire rescue, confined space entry, Hazardous Materials (HazMat) spill response, and emergency medical services. The next closest HFD station is Fire Station #11, located at 3455 Harris Street approximately 5 miles away, with an estimated response time of 7-10 minutes. These two fire stations are staffed with 18 professional firefighters, 18 volunteer firefighters, and 2 administrative personnel. The HFD has three fire engines and one 2,000-gallon water tender. All firefighters are trained to EMT-1 level and some are trained to paramedic level. (Ex. 200, p. 4.14-3.)

EFD Station #3 is located about 4 miles away, with an estimated response time of 5-6 minutes. EFD Station #1, about 5 miles away, has an estimated response time of 7-8 minutes. (Ex. 200, p. 4.14-4.) In the event of a hazardous materials incident, the Eureka Fire Department Regional Hazardous Material Response Team (EFD HMRT) may be called, with a response time of about 45 minutes. (Ex. 200, pp. 4.14-3 to 4.14-4.) These resources are also available in case of emergencies.

The evidence indicates that the HFD stations, along with those of the City of Eureka Fire Department, are together adequately equipped and staffed to deal with any incident at the HBRP, and that the new equipment and design of the HBRP are safer than those of the existing HBPP units 1 and 2. Thus, no additional incremental burden or cumulative impact is anticipated. (Ex. 200, p. 4.14-14.)

FINDINGS AND CONCLUSIONS

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

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The project will employ an on-site professional safety monitor during construction and operation.

4. The HBRP will include on-site fire protection and suppression systems for the first line defense in the event of a fire.

5. The Humboldt Fire District No. 1 (HFD) and, if necessary, the City of Eureka Fire Department (EFD), will provide fire protection and emergency response services to the project.

6. Existing fire and emergency service resources are adequate to meet project needs.

7. The HBRP will not result in cumulative adverse impacts to the HFD or to the EFD emergency response capabilities.

8. The project owner will maintain an automatic defibrillator on-site to provide immediate response in the event of a medical emergency.

9. Implementation of the Conditions of Certification, below, and the mitigation measures contained therein will ensure that the project conforms with all

applicable laws, ordinances, regulations, and standards on industrial worker health and safety as identified in the pertinent portion of **Appendix A** of this Decision.

The Commission therefore concludes that implementation of the project owner's Safety and Health Programs and Fire Protection measures will reduce potential adverse impacts to the health and safety of industrial workers to levels of insignificance.

CONDITIONS OF CERTIFICATION

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

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Humboldt Fire District for review and comment and then to the CPM for approval. If comments are not received from the Humboldt Fire District within 30 days, the project owner shall submit the Construction Emergency Action Plan and the Fire Prevention Plan to the CPM without those comments.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of the letter transmitting the Construction Emergency Action Plan and the Fire Prevention Plan to the Humboldt Fire District requesting their comments and shall immediately forward to the CPM a copy of the Fire Department's comments when received.

WORKER SAFETY-2 The project owner shall submit to the CPM for review and approval 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 Prevention Program (8 CCR § 3221); and
- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the program with all applicable Safety Orders. The Fire Prevention Program and the Emergency Action Plan shall also be submitted to the Humboldt Fire District for review and comment prior to submittal to the CPM. If comments are not received from the Humboldt Fire District within 30 days, the project owner shall submit the Fire Prevention Program and the Emergency Action Plan to the CPM without those comments.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of the letter requesting comments from the Humboldt Fire District and shall immediately forward to the CPM a copy of the Fire Department's comments when received.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) 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 overall 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 external defibrillator (AED) is located on-site during construction and operations, shall implement a program to ensure that workers are properly trained in its use, and shall ensure that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on-site whenever the workers that they supervise are on-site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its

use. The training program shall be submitted to the CPM for review and approval.

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 external defibrillator (AED) exists on-site and a copy of the training and maintenance program for review and approval.

D. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the HBRP will create significant impacts to public health and safety resulting from the use, handling, or storage of hazardous materials. Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts. These include local meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. The evidence of record incorporates these factors in the analysis of potential impacts. The **Worker Safety and Fire Protection** section of this Decision analyzes potential exposure of workers to hazardous materials used at the facility.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Engineering controls and administrative controls affect the significance of potential impacts from hazardous materials usage. Engineering controls are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) which can prevent a hazardous material spill from occurring, which can limit the spill to a small amount, or which can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow. These are designed to help prevent accidents or keep them small if they do occur. These controls are described in detail in the evidence of record. (Ex. 200, pp. 4.4-11 to 4.4-12.) In both cases, the goal is to prevent a spill from moving off-site and causing harm. Timely and adequate emergency spill response is also a crucial factor. (Ex. 200, pp. 4.4-12 to 4.4-13.)

Hazardous materials, such as mineral and lubricating oils, corrosion inhibitors, and water conditioners will be present at the facility. Hazardous materials used during the construction phase include gasoline, diesel fuel, motor oil, hydraulic fluid, welding gases, lubricants, solvents, paint, and paint thinner. No acutely toxic hazardous materials will be used on-site during construction. Hazardous

Materials **Appendix A,** found at the end of this section, sets forth the hazardous materials proposed for use at the HBRP.

The evidence of record includes an assessment of the risks posed by the use of hazardous materials. This assessment included the following elements:

- A review of chemicals and the amounts proposed for on-site use and a determination of the need and appropriateness of their use;
- Chemicals which would be used in small amounts, or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, were removed from further consideration;
- Measures proposed to prevent spills were reviewed and evaluated. These included engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs;
- Measures proposed to respond to accidents were reviewed and evaluated. These measures also included engineering controls such as catchment basins and methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews; and
- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures proposed.

(Ex. 200, p. 4.4-6.)

The evidence of record is clear that, except for aqueous ammonia, none of the hazardous materials which will be used during the project's construction and operation pose a significant potential for off-site impacts. This determination is based on the quantities on-site, the substances' relative toxicity, physical state, or environmental mobility. (Ex. 200, p. 4.4-8.)

Although no natural gas is stored, the project will involve the handling of large amounts of this fuel, with an accompanying risk of fire and explosion. The evidence is similarly in accord that compliance with applicable codes which incorporate measures such as the use of double block and bleed valves for secure shut off, automated combustion controls, burner management, inspection

of welds, and use of corrosion resistant coatings will suffice to adequately minimize the potential for off-site impacts. (Ex. 200, p. 4.4-7.)

An aqueous solution of 19 percent ammonia will be used in controlling the emission of oxides of nitrogen (NO_x) from the combustion of natural gas in the facility. It is the only acutely hazardous material to be used or stored at the HBRP in significant quantities. Two above-ground storage tanks with a combined maximum capacity of 54,000-gallons will be used to store the 19 percent aqueous ammonia. (Ex. 1, § 8.5.2.3.2.) The accidental release of aqueous ammonia could, without proper mitigation, result in significant down-wind concentrations of ammonia gas. (Ex. 200, p. 4.4-8.)

The evidence of record establishes that Applicant and Staff each performed an analysis of the off-site consequences to the public of a worst-case catastrophic ammonia release. (Ex. 1, § 8.5.4.2.2; Ex. 200, pp. 4.4-9 to 4.4-10; 6/17/08 RT 40.) We find that with the incorporation of the engineering controls proposed by the Applicant and requested by Staff for the storage and transfer of aqueous ammonia, any potential accidental release of aqueous ammonia at the project site will not cause a significant impact and will not represent a significant risk to the public.

1. Transportation of Hazardous Materials

Operation of the proposed HBRP will require about 156 tanker truck deliveries of aqueous ammonia per year, each delivering about 6,500 gallons. Each delivery will travel approximately 0.4 miles from Highway 101 to the facility along King Salmon Avenue. The distance traveled along U.S. 101, a major four-lane highway traversing a populated area, is not included in mileage calculations. This would result in an annual cumulative total of about 62.4 miles of delivery tanker truck travel on a two-lane road per year (with a full load). We find that the risk over this distance is insignificant. Data from the U.S. DOT show that the actual

risk of a fatality over the past five years from all modes of hazardous material transportation (rail, air, boat, and truck) is approximately 0.1 in one million. (Ex. 200, p. 4.4-14.)

The evidence shows that the potential for accidental release during transport is exceedingly low, and that compliance with the existing body of regulations covering the transportation of hazardous materials, as well as the use of the type of delivery vehicle specified in Condition of Certification **HAZ-5,** will ensure that the risk to the public of exposure to significant concentrations of aqueous ammonia remains less than significant. (Ex. 200, p. 4.4-13.) Moreover, in response to concerns raised by the public, we are including a requirement within **HAZ-6** that deliveries of aqueous ammonia be scheduled only during those times of the day when school buses are not present on the transportation route. The project owner would be required to coordinate those deliveries with any school in the area whose buses (or contractor buses) use the designated hazardous materials transportation route. (Ex. 200, p. 4.4-14.)

2. Seismic Issues

The possibility exists that an earthquake would cause the failure of a hazardous materials storage tank. The quake could also cause the failure of the secondary containment system (berms and dikes) as well as electrically controlled valves and pumps. The failure of all these preventive control measures might then result in a vapor cloud of hazardous materials moving off-site and impacting the residents and workers in the surrounding community. The effects of the Loma Prieta earthquake of 1989, the Northridge earthquake of 1994, and the earthquake in Kobe, Japan, in January 1995, heighten the concern regarding earthquake safety.

Information obtained after the January 1994 Northridge earthquake showed that some damage was caused to several large storage tanks and smaller tanks

associated with the water treatment system of a cogeneration facility. Those tanks with the greatest damage, including seam leakage, were older tanks, while the newer tanks sustained displacements and failures of attached lines. In the February, 2001 Nisqually earthquake near Olympia, Washington, a state with similar seismic design codes as California, no hazardous materials storage tanks were impacted. (Ex. 200, p. 4.4.15.)

The HBRP site is within Seismic Zone 4. (Ex. 1, § 8.4.1.4.2) The evidence shows that the proposed facility must be designed and constructed to the applicable standards of the 2007 California Building Code and the 1997 Uniform Building Code. (Ex. 200, p. 4.4-15.) Therefore, on the basis of what occurred in Northridge with older tanks and the lack of failures during the Nisqually earthquake with newer tanks designed to standards similar to those in California, we find that tank failures at the project site during seismic events are not probable and do not represent a significant risk to the public.

3. Site Security

This facility proposes to use hazardous materials identified by the US EPA as materials where special site security measures should be developed and implemented to prevent unauthorized access.

In order to ensure that this facility or a shipment of hazardous material is not the target of unauthorized access, we adopt proposed Conditions of Certification **HAZ-7** and **HAZ-8** requiring both a Construction Security Plan and an Operations Security Plan. These plans would require the implementation of Site Security measures consistent with the above-referenced documents and Energy Commission guidelines. The goal of these conditions of certification is to provide for the minimum level of security for power plants to protect California's electrical infrastructure from malicious mischief, vandalism, or domestic/foreign terrorist attacks.

The record also contains a cumulative risk assessment for the HBRP in conjunction with existing facilities in the area. The chemical with the most potential to cause a cumulative impact is aqueous ammonia. However, we find that with the mitigation measures proposed by applicant and the Conditions of Certification we adopt, there will be very little possibility for significant off-site air-borne concentration of ammonia gas, and accordingly even less possibility for there to be simultaneous off-site plumes from other facilities to merge and cause any significant off-site impact. The nearest facility that stores and uses ammonia is the Humboldt Creamery Association, located about 8 miles from the proposed HBRP site (Ex. 1, Section 8.5.3). At this distance there are no potential cumulative impacts from the use and storage of hazardous materials. (Ex. 200, p. 4.4-17.)

In conclusion, the evidence convinces us that the proposed Conditions of Certification adequately and appropriately prevent the occurrence of significant adverse impacts from the storage and transportation of hazardous materials which will be used during the construction and the operation of the HBRP. **HAZ-1** ensures that no hazardous material would be used or stored at the facility except those listed and in the concentrations and volumes detailed in Appendix B of Exhibit 200 (Final Staff Assessment), unless there is prior notification to the Humboldt County Division of Environmental Health (DEH) and approval by the Energy Commission CPM. **HAZ-2** requires that a Risk Management Plan (RMP) be prepared and submitted prior to the delivery of aqueous ammonia **HAZ-3** requires development of a safety management plan for the delivery of aqueous ammonia. This will further reduce the risk of any accidental release not addressed by the proposed spill prevention mitigation measures and the required RMP. **HAZ-4** requires that the aqueous ammonia storage tank be designed to comply with applicable LORS. The transportation of hazardous materials is addressed in **HAZ-5** and a restriction on the route and time-of-day transport of aqueous ammonia is addressed in **HAZ-6**. Site security during both the construction and operations phases is addressed in **HAZ-7** and **HAZ-8**.

FINDINGS AND CONCLUSIONS

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

1. The HBRP will use hazardous materials during construction and operation, including aqueous ammonia and natural gas.
2. The major public health and safety hazard for the HBRP is associated with the catastrophic release of aqueous ammonia. It is the hazardous material which will be stored on-site in reportable quantities.
3. Applicant and Staff have used conservative assumptions to analyze a worst-case catastrophic release of aqueous ammonia.
4. A worst-case catastrophic release of aqueous ammonia will not pose a hazard to the public.
5. Compliance with appropriate administrative, engineering, and regulatory requirements for safe transportation, delivery, and storage of aqueous ammonia will reduce potential risks of accidental release to insignificant levels.
6. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.
7. Construction of the facility in accordance with current building codes and standards will ensure that the facility will withstand seismic shocks and that the risk of tank failures as a result of seismic events is reduced to the level of insignificance.
8. The evidence of record establishes that the hazardous materials used in the construction and operation of the HBRP, when considered in conjunction with those used at other facilities in the project vicinity, will not cumulatively result in a significant risk to the public.
9. Implementation of the mitigation measures described in the evidentiary record and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of the handling, storage, or transportation of hazardous materials.
10. The Construction Security Plan and Operations Security Plan would require the implementation of Site Security measures which will provide for the minimum level of security for power plants to protect California's electrical infrastructure from malicious mischief, vandalism, or domestic/foreign terrorist attacks.

11. With implementation of the Conditions of Certification, below, the HBRP will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

The Commission concludes, therefore, that the use of hazardous materials by the HBRP will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material, stored in amounts greater than 100 gallons as a liquid or 50 pounds as a solid, not listed in Hazardous Materials Appendix A, below, or in greater quantities or concentrations than those identified by chemical name in Appendix A, below, unless notification is given to the Humboldt County Division of Environmental Health and approved not less than two (2) business days in advance by the Compliance Project Manager (CPM).

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

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Agency (CUPA) -- Humboldt County Division of Environmental Health (DEH) -- and the CPM for review. After receiving comments from the CUPA and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the CUPA for information and to the CPM for approval.

Verification: At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Business Plan to the CPM for approval. At least 60 days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous 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.

Verification: At least 60 days prior to the first delivery of aqueous ammonia to the facility, the project owner shall provide a safety management plan as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to either the ASME Boiler and 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. The secondary containment shall include a cover that would minimize evaporation of ammonia to the air and the area around the storage tank, tanker transfer pad, and ammonia skid shall be equipped with ammonia sensors. The final design drawings and specifications for the ammonia storage tank, secondary containment basin, cover, transfer pad, and the number, location, and specifications of the ammonia sensors shall be submitted to the CPM.

Verification: At least 60 days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank, secondary containment basin, cover, transfer pad, and the number, location, and specifications of the ammonia sensors to the CPM for review and approval.

HAZ-5 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles that meet or exceed the specifications of U.S. DOT Code MC-307.

Verification: At least 60 days prior to the first receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter proposed to be provided to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (Highway 101 to King Salmon Avenue, to the project site). The project owner shall submit any desired change to the approved delivery route to the CPM for review and approval. The project owner shall also consult with officials of the Eureka City Unified School District and the South Bay Union School District regarding school bus schedules and shall prohibit vendors through contractual language from transporting aqueous ammonia to the site at times that would coincide with school bus traffic along Highway 101 and King Salmon Avenue.

Verification: At least 60 days prior to receipt of any hazardous materials on site, the project owner shall submit to the CPM for review and approval copies of 1) notices to hazardous materials vendors describing the required transportation route, 2) the contract with the aqueous ammonia vendor describing the time of day limitation on deliveries, and 3) evidence that officials of the Eureka City Unified School District and the South Bay Union School District have been consulted.

HAZ-7 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 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 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-8 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 Corporation (NERC) 2002, *Security Guidelines for the Electricity Sector, Version 1.0*, June 14, 2002; the U.S. Department of Energy (DOE) 2002 *Draft Vulnerability Assessment Methodology, Electric Power Infrastructure*, Office of Energy Assurance, September 30, 2002; and the U.S. Department of Justice (US DOJ) 2002, *Special Report: Chemical Facility Vulnerability Assessment Methodology*, Office of Justice Programs, Washington, D.C. (July 2002).

Physical site security shall be consistent with the guidelines issued by the NERC (Version 1.0, June 14, 2002), the DOE (2002), and U.S. Department of Homeland Security regulations (6 CFR Part 27) and shall 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 and shall be made available 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. Specifications for permanent full perimeter fence or wall, at least eight feet high;

2. Specifications for a main entrance security gate, either hand operable or motorized;

3. Evacuation procedures;

4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;

    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.

6. Site access controls for employees, contractors, vendors, and visitors;

7. 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 part 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;

8. Specifications for a 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

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

   a. Security guards present 24 hours per day, seven days per week.

   <u>or</u>

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

   1. The CCTV monitoring system required in number nine 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 **<u>or</u>** on-site motion detectors. ("Virtual" breach detection software is acceptable and other methods may be submitted to the CPM for approval.)

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 plant 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 Corporation, after consultation with appropriate law enforcement agencies and the applicant.

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 an Operations Site Security Plan are available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

Hazardous Materials Appendix A

Hazardous Materials Proposed for Use at the HBRP[a]

Material	CAS No.	Application	Location	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ[b]
Aqueous Ammonia 19 % solution	7664-41-7	NO_X Emissions Control	Outdoors in the ammonia unloading/storage area	Health: irritation to permanent damage from inhalation, ingestion, and skin contact Physical: reactive, vapor is combustible	54,000 gallons	100 lb
Cleaning chemicals/ Detergents	None	Periodic cleaning of engines	Workshop	Health: refer to individual chemical labels.	110 gallons	NA
Corrosion inhibitor (Potassium 2-ethylhexanoate, 1H-Benzotriazole methyl)	3164-85-0 29385-43-1	Cooling water corrosion inhibitor	Radiator array and jacket water circuit	Health: may cause irritation to eyes, harmful if ingested Physical: None	5,500 gallons	NA
Diesel No. 2 (Fuel Oil for engines)	None	Fuel for engines	Diesel fuel tank	Health: Eye and skin irritation Physical: combustible	634,000 gallons	42 gal
Diesel No. 2 (Fuel Oil for black start and fire pumps)	None	Fuel for fire pump and black start unit	Diesel fuel tank	Health: Eye and skin irritation Physical: combustible	600 gallons	42 gal
Hydraulic Oil	None	Engine lubricating oil	Contained within equipment	Health: hazardous if ingested Physical: combustible	33,000 gallons	42 gal
Exxon Mobile Pegasus 805 lube oil (zinc, phosphorodithoic acid, poly butenyl succinimide)	7440-66-6 68649-42-3	Engine lubricating oil	Oil storage areas	Health: hazardous if ingested Physical: flammable	34,500 gallons	42 gal
Mineral Insulating Oil	8012-95-1	Transformers/switchyard	Contained within transformers	Health: minor health hazard Physical: may be combustible	15,870 gallons	42 gal
Mineral Lubricating Oil	None	Generator lubricating oil	Electrical generators	Health: minor health hazard Physical: may be combustible	12,000 gallons	42 gal

a. Source: PG&E 2006a Tables 8.5-1 through 8.5-3.

b. Reportable quantities for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act.

SAMPLE CERTIFICATION (Attachment "A")

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company Name)

for employment 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 this _____ day of _____, 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.

SAMPLE CERTIFICATION (Attachment "B")

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company Name)

for 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 this _____ day of _____, 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.

SAMPLE CERTIFICATION (Attachment "C")

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that the below named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company Name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above- named project.

_____

(Signature of Officer or Agent)

Dated this _____ day of _____, 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.

E. WASTE MANAGEMENT

The project will generate hazardous and non-hazardous wastes during its construction and operation. The record contains an evaluation of the proposed waste management plans and the mitigation measures intended to reduce the risks and environmental impacts associated with handling, storing, and disposing of these wastes. This evaluation includes a review of proposed solid and hazardous waste management methods to ascertain whether they meet applicable standards for waste reduction and recycling. It also includes a review of whether these wastes will significantly impact available treatment and disposal sites.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Existing Contamination

Construction of the proposed HBRP will occur simultaneously with decommissioning activities of Humboldt Bay Power Plant Unit 3. Unit 3, a nuclear plant, had stopped operating in 1976 and is now in the process of decommissioning and demolition under a Nuclear Regulatory Commission (NRC) SAFSTOR license. The decommissioning process may take up to 12 years and includes the recent completion of construction of an Independent Spent Fuel Storage Installation (ISFSI) on the HBPP property that was necessary for transfer and storage of spent fuel prior to demolition of Unit 3 structures (Exs. 1, § 8.16.1; 200, p. 4.13-3.)

Research by PG&E and its consultants, has determined that radioactivity levels at the HBRP site meet the NRC's standards for public use. (Exs. 1, p. 8.14.1.1; 7, DR 57-1.) In addition, the Applicant will conduct a detailed radiological contamination study for the HBRP site and any contaminated soil will be removed before construction of HBRP begins. Removal of any contaminated soil

would be under the jurisdiction of the NRC as part of the decommissioning of Unit 3 and not part of the HBRP project. (Ex. 200, p. 4.13-5.) Conditions of Certification **WASTE-1** and **-2** will address any encounter of unexpected levels of radioactivity during construction activities. In addition, Condition of Certification **WASTE-6** will require that a radiological survey be conducted and submitted to the Energy Commission's Compliance Project Manager (CPM) prior to construction of the HBRP including a demonstration that any necessary remediation of contaminated soil has been conducted according to applicable regulations.

A Historical Site Assessment (HSA) was conducted for the Humboldt Bay Power Plant site in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) The final HSA classified the HBRP site as a Class 3 area, which is an area not expected to have residual radioactivity. (Exs. 1, Appendix 8.14-B; 7, Attachment DR57-1.) Conditions of Certification **WASTE-1** and **-2** will also address the possibility of encountering radioactivity on existing structures.

2. Construction

Construction of the HBRP and its associated facilities will last approximately 18 months and will generate nonhazardous and hazardous wastes in both solid and liquid forms. (Ex. 200, p 4.13-6.) Before construction can begin, the project owner will be required to develop and implement a Construction Waste Management Plan as per Condition of Certification **WASTE-5**.

Nonhazardous solid wastes generated during construction will include up to 60 tons of paper, wood, glass, and plastics from packing and insulating materials, empty non-hazardous chemical containers, and waste from the demolition of some existing structures. Approximately 30 tons of metal debris from welding/cutting activities, packing materials, electrical wiring, and empty non-

hazardous chemical containers will be generated during construction. An additional 1,200 tons of metal waste will be generated from the demolition of the transmission tower and other existing structures and piping. Demolition activities will also generate about 3,700 tons of concrete waste. (Ex. 1, § 8.14.1.2.1.) All nonhazardous solid wastes will be recycled to the extent possible and non-recyclable wastes will be collected weekly by a licensed hauler and disposed of in a solid waste disposal facility (Class III landfill), as per California Code of Regulations, title 14, section 17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal). (Ex. 200, p. 4.13-7.)

Hazardous wastes anticipated to be generated during construction may include welding materials, batteries, paint, flushing and cleaning fluids, and solvents. The quantities of flushing and cleaning fluids are estimated to be once or twice the internal volume of the pipes cleaned. The quantity of all other hazardous wastes is expected to be minimal. (Ex. 1, § 8.14.1.2.1.)

Wastewater will also be generated during construction, including sanitary waste, equipment wash-down, and storm water runoff (see the **Soil and Water Resources** section of this Decision for a more detailed discussion of stormwater). Wastewater will be tested and classified to determine the proper method of disposal (Ex. 1, § 8.14.1.2.1.)

Any waste classified as hazardous will be collected at satellite locations and transported daily to the contractor's 90-day hazardous waste storage area, located in the construction lay down area. The wastes thus accumulated will be properly manifested, transported, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies. (Ex. 1, § 8.14.4.1.)

The Applicant will be considered the generator of hazardous wastes at this site during the construction period and therefore, prior to construction, the project

owner will be required to obtain a unique hazardous waste generator identification number from the Department of Toxic Substances Control (DTSC) in accordance with DTSC regulatory authority, as per Condition of Certification **WASTE-3**. Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner will be required by Condition of Certification **WASTE-4** to notify the CPM whenever the owner becomes aware of this action.

3. Operation

The proposed HBRP will generate both nonhazardous and hazardous wastes in solid and liquid forms under normal operating conditions. Before operations can begin, the project owner will be required to develop and implement an Operations Waste Management Plan as per Condition of Certification **WASTE-5**.

Nonhazardous solid wastes anticipated to be generated during operation include up to 1,040 cubic yards of waste annually, comprised of maintenance wastes and office wastes. These wastes will be recycled to the extent possible and non-recyclable wastes will be regularly transported offsite to a solid waste disposal facility. (Ex. 1, § 8.14.1.2.2 and § 8.14.4.)

Nonhazardous liquid wastes will be generated during facility operation, and are discussed in the **Soil and Water Resources** section of this Decision. Storm water runoff will be managed in accordance with a Drainage, Erosion and Sediment Control Plan. Other wastewaters will be sampled to determine their quality and disposed of by the appropriate method. (Ex. 1, § 8.14.4.2.2 and § 8.14.3.2.)

The Applicant will be considered to be the generator of hazardous wastes at this site during operations and thus the project owner's unique hazardous waste generator identification number obtained during construction will still be required

for generation of hazardous waste, as per Condition of Certification **WASTE-3**. Hazardous wastes anticipated to be generated during routine project operation include waste lubricating oil, lubrication oil filters, spent SCR catalyst, oily rags, oil sorbents, lead-acid batteries, and chemical cleaning wastes. Table 8.14-1 of Exhibit 1 provides a complete list of these wastes, the amounts expected to be generated, and their disposal methods. The amounts of hazardous wastes generated during the operation of HBRP will be minimal, and recycling methods will be used to the extent possible. The remaining hazardous waste will be temporarily stored on-site, per the California Fire Code and California Code of Regulations, title 22, section 66262.10 et seq., and disposed of by licensed hazardous waste collection and disposal companies in accordance with all applicable regulations, per California Code of Regulations, title 22, Section 66262.10 et seq. As in the construction phase, should any operations waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner will be required by Condition of Certification **WASTE-4** to notify the CPM whenever the owner becomes aware of this action. (Ex. 200, p. 4.13-8.)

4. Disposal

Section 8.14.2.3.1 and Table 8.14-2 of Exhibit 1 (AFC) list one California Class III and one Oregon facility that will accept nonhazardous solid wastes from the HBRP project. Both landfills have adequate remaining capacity to handle the solid waste that will be generated by the HBRP. (Ex. 1, § 8.14.2.3.1.) In total, the two listed facilities possess over 40 million cubic yards of remaining capacity. The volume of solid nonhazardous waste from the HBRP requiring off-site disposal will be a small fraction of the existing combined capacity of the available Class III landfills and will not significantly impact the capacity or remaining life of these facilities.

Similarly, Section 8.14.2.3.2 of Exhibit 1 discusses the three Class I landfills in California: the Buttonwillow Landfill in Kern County, the Clean Harbors Westmoreland Landfill in Imperial County, and the Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and Class III wastes. Hazardous waste disposal for HBRP will be handled by Chemical Waste Management at Kettleman Hills under their current contract with PG&E. Kettleman Hills and Buttonwillow landfills have a combined excess of 10 million cubic yards of remaining hazardous waste disposal capacity, with up to 33 years of remaining operating lifetimes. The Westmoreland landfill is currently non-operational but on reserve due to lack of need for additional hazardous materials disposal capacity in California (Ex. 1, § 8.14.2.3.2.) The amount of hazardous waste transported to these landfills has decreased in recent years due to source reduction efforts by generators and the transport of waste out of state that is hazardous under California law, but not federal law. Hazardous waste treatment and disposal capacity in California is more than adequate to accommodate the waste generated by HBRP.

Any additional hazardous wastes in the form of contaminated soils, etc., removed during site remediation will be properly handled as described in a Remedial Action Plan (or equivalent) that will be required by DTSC and Condition of Certification **WASTE-7**. This plan will be submitted to the Energy Commission CPM for review and approval prior to the generation of any wastes from remedial activities. (Ex. 200, p. 4.13-9.)

5. Cumulative impacts and mitigation

The nonhazardous and hazardous wastes generated during construction and operation of the HBRP will add to the total quantities of waste generated in Humboldt County and the State of California. This facility will generate an estimated 4,960 tons of solid waste during construction and approximately 1,040 cubic yards per year during operation. This includes approximately 80 tons of

hazardous waste and 9,200 gallons of oil water separator waste per year. Recycling efforts will be prioritized wherever practical, thereby reducing the amounts of waste that actually need disposal in landfills. (Ex. 200, p. 4.13-9.)

In section 8.14.4 of Exhibit 1, the Applicant states that handling and management of all HBRP waste will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The HBRP will be included in Humboldt County's Waste Reduction Program, which provides a solid waste hauler to collect recyclables regularly and deliver them to recycling facilities. Humboldt County is not currently meeting the state mandated goal of 50 percent solid waste diversion/recycling. However, there is adequate capacity available in a variety of treatment and disposal facilities that can accept waste generated by HBRP. (Ex. 1, § 8.14.3.) We therefore conclude that these added waste quantities generated by HBRP will not result in significant cumulative waste management impacts.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we make the following findings and reach the following conclusions:

1. Construction of the proposed HBRP will occur simultaneously with decommissioning activities of Humboldt Bay Power Plant Unit 3, a nuclear facility.

2. Unit 3 stopped operating in 1976 and is now in the process of decommissioning and demolition under the jurisdiction of the Nuclear Regulatory Commission (NRC).

3. In addition to NRC remediation measures, the Energy Commission has adopted Conditions of Certification which will address any encounter of unexpected levels of radioactivity during construction activities.

4. Condition of Certification **WASTE-6** will require that the Applicant conduct a radiological survey prior to construction of the HBRP including a demonstration that any necessary remediation of contaminated soil has been conducted according to applicable regulations.

5. The project will generate hazardous and nonhazardous wastes during construction and operation.

6. Hazardous and nonhazardous wastes will be recycled to the extent practical.

7. Wastes which cannot be recycled will be disposed in appropriate landfills.

8. Disposal of project wastes will not result in significant adverse impacts to existing waste disposal facilities.

9. The Conditions of Certification set forth below and the **Air Quality** and **Soil and Water Resources** portions of this Decision, as well as waste management practices detailed in the evidentiary record, will reduce potential waste impacts to insignificant levels.

10. Implementation of the Conditions of Certification will ensure that the project complies with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

We therefore conclude that the project's construction and operational wastes will be properly managed, and will not create a significant direct, indirect, or cumulative adverse impact.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the Compliance Project Manager (CPM) for review and approval. The resume shall show experience in remedial investigation and feasibility studies including sites that contain radiological wastes. The Registered Professional Engineer or Geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM for review and approval.

WASTE-2 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments (including radiation detectors), 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 submit 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 Humboldt County Department of Environmental Health for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the next Monthly Compliance Report following its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-5 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including 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: Not less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for approval. The Operation Waste Management Plan shall be submitted to the CPM 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. 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 planned management methods proposed in the original Operation Waste Management Plan.

WASTE-6 Prior to any soil disturbance or the beginning of site mobilization for the Humboldt Bay Repowering Project (HBRP), the project owner shall prepare and submit to the CPM the documents listed below to address remediation of radioactive contamination.

a) a radiological survey for the HBRP site; and

b) documentation demonstrating any contamination that exceeds NRC regulatory levels has been remediated in accordance with regulatory requirements.

Verification: At least 60 days prior to any soils disturbance or the beginning of site mobilization for the Humboldt Bay Repowering Project, the project owner shall provide the documents listed above to the CPM for review and approval.

WASTE-7 Prior to any site grading for the HBRP except for the temporary access road, potable water line, storm water discharge system, and storm water Best Management Practices the project owner shall provide to the CPM for review and approval a Remedial Investigation (RI) report or equivalent detailing site characterization and a Remedial Action Plan (RAP) or equivalent detailing site cleanup methods. The RI plan or equivalent shall include an assessment of the containment pond liners and whether they have been compromised. After implementation of the RAP (or equivalent), the project owner shall submit a report describing that the recommendations of the 2007 Preliminary Phase II Environmental Site Assessment have been implemented and shall include confirmatory sampling and analysis results as described in the RAP (or equivalent).

Verification: At least 30 days prior to any site grading for the HBRP except for the temporary access road, potable water line, storm water discharge system, and storm water Best Management Practices for the Humboldt Bay Repowering Project, the project owner shall provide the RI report (or equivalent) and the RAP (or equivalent) to the CPM for review and approval. After remedial activities have been completed and prior to site grading, the project owner shall provide a data compilation report, describing that the recommendations of the 2007 Preliminary Phase II Environmental Site Assessment have been implemented. At least 60 days after the commencement of site grading, the project owner shall submit a final Remediation Completion and Closure Report.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other resources of critical biological interest such as unique habitats. The evidence contained in the record is undisputed (6/17/08 RT 41-42; Exs. 1, § 8.2; 7; 11; 13; 16; 17; 25; 26; 54; 58; 75; 200, pp. 4.2-1 to 4.2-23) and describes the biological resources in the vicinity of the project site and linear alignments, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The project vicinity is characterized by agricultural land as well as industrial, commercial, and residential areas; there are also areas of freshwater, saltwater, and riparian marsh in the vicinity of the site. Other vegetation communities within one mile include grasslands, coastal dunes, mud flats and eelgrass beds, coyote brush scrub, North Coast forest, and North Coast riparian forest. In addition, the waters of Humboldt Bay are located adjacent to the site.

The HBRP is located on the same parcel of land as the existing Humboldt Bay Power Plant, three miles south of the city of Eureka. It will occupy 5.4 acres of PG&E's existing 143 acre parcel. The site is situated on Buhne Point, a small peninsula along Humboldt Bay, and currently contains industrial land, landscaped areas, wetlands, Buhne Slough, and cooling water intake and discharge canals associated with the existing power plant.

The PG&E parcel contains approximately 20.67 acres of wetlands subject to the Clean Water Act, under the jurisdiction of the U.S. Army Corps of Engineers (USACE). This acreage is composed of areas of freshwater marsh, saltwater marsh, riparian marsh, and drainage ditches. (Ex. 200, p. 4.2-6.) It also contains about 5.69 acres that are considered wetlands by the California Coastal Commission,[12] but not by the USACE. (Ex. 200, p. 4.2-7.)

2. Potential Impacts

Construction of the HBRP, including the associated temporary access road, parking areas, and electric transmission and gas interconnection lines will cause impacts to the wetlands under the jurisdictions of both the USACE and the Coastal Commission. To assess the extent of these impacts, Applicant conducted various habitat and wildlife field surveys which included the property upon which the HBRP will be located, as well as areas within a one-mile radius of the site. (Ex. 200, p. 4.2-8.)

Wetlands are a principal area of concern. USACE and the Coastal Commission use differing criteria to classify wetlands. **Biological Resources Table 1**, below, indicates the acreages of USACE-jurisdictional seasonal wetlands, drainages, and riparian, salt, and freshwater marsh that would be impacted by project development, as well as final wetland acreages verified by the USACE. **Biological Resources Table 2** summarizes impacts to wetlands under the jurisdiction of the California Coastal Commission, including wetlands that are also under USACE jurisdiction.

[12] The HBRP is within the Coastal Zone and, normally, a Coastal Development permit would be required from the Coastal Commission. However, due to the Coastal Commission's withdrawal from the project, Energy Commission staff conferred with and reviewed earlier guidance from the Coastal Commission for the Final Staff Assessment to ensure compliance with provisions of the Coastal Act. (Ex. 200, pp. 4.2-20 to 4.2-22.)

BIOLOGICAL RESOURCES Table 1
Estimated Impacts to USACE-Jurisdictional Wetlands and Waters of the U.S.

Project Feature	Habitat Type	Permanent Impact (Acres)	Temporary Impact (Acres)
HBRP footprint including gas and transmission connections	Seasonal wetlands	0.10	0
	Drainages	0.07	0
	Riparian, salt, and freshwater marshes	0.05	
Construction lay down area, temporary access road, and water pipeline	Seasonal wetlands	0	0.03
	Drainages	0	0
	Riparian, salt, and freshwater marshes	0	0
TOTAL		**0.22 acre**	**0.03 acre**

Source: Ex. 200, p. 4.2-9.

BIOLOGICAL RESOURCES Table 2
Estimated Impacts to Coastal Commission Wetlands

Project Feature	Habitat Type	Permanent Impact (Acres)	Temporary Impact (Acres)
HBRP footprint including gas and transmission connections	Coastal Commission wetlands	0.96	0
Construction lay down area, temporary access road, and water pipeline	Coastal Commission wetlands	0	2.49
TOTAL		**0.96 acre**	**2.49 acres**

Source: Ex. 200, p. 4.2-9.

As these tables show, the HBRP will impact only a relatively small area of wetland habitat. Nevertheless, these wetlands are important habitat since numerous special-status species are also either known to occur, or have

historically occurred, in the project vicinity. These are identified in the evidence of record. (Ex. 200, pp. 4.2-4 to 4.2-5.) Of these various plant and animal species, the evidence focuses on those which could reasonably be expected to be impacted by project construction:

- Humboldt Bay owl's-clover (*Castilleja ambigua* ssp*. humboldtiensis*)

A population of Humboldt Bay owl's-clover exists in a salt marsh that is adjacent to the project's short-term delivery parking area between King Salmon Avenue and the Humboldt Bay Power Plant intake channel. Humboldt Bay owl's-clover is classified as a List 1B.2 plant by the California Native Plant Society (CNPS), meaning that it is rare, threatened, or endangered in California and elsewhere and fairly endangered in the state. The population is not in an area that is expected to be disturbed due to the project; however, construction activities have the potential to impact this species. For example, construction personnel or construction vehicles could accidentally enter the area, potentially disturbing individuals of this species or altering the habitat that is necessary for the species to survive.

- Point Reyes bird's-beak (*Cordylanthus maritimus* ssp*. palustris*)

A population of Point Reyes bird's-beak is adjacent to the project's short-term delivery parking area in the same area as the Humboldt Bay owl's-clover. Point Reyes bird's-beak is also a CNPS List 1B.2 plant. Potential impacts would be identical to those discussed above. (Ex. 200, pp. 4.2-13 to 4.2-14.)

- Northern red-legged frog (*Rana aurora aurora*)

The northern red-legged frog, a California Species of Special Concern, is known to inhabit wetlands on and around the PG&E property. Northern red-legged frogs were observed in the sump adjacent to the existing detention ponds, in the landscaped area east of the existing power plant, and in drainage ditch south of the existing power plant. The HBRP is not likely to impact the northern red-

legged frog breeding habitat, but it would impact wetland and grassland habitats that the species uses. There is also the potential for individuals of this species to be directly impacted during construction of the HBRP.

- Coho salmon (*Onchorhynchus kisutch*), Northern California steelhead (*Oncorrhynchus mykiss*), California coastal Chinook (*Oncorrynchus tshawytscha*) and tidewater goby (*Eucyclogobius newberryi*)

Coho salmon (state listed Threatened, federally listed Endangered), Northern California steelhead (federally listed Threatened), and California coastal Chinook (state and federally listed Threatened) are known to inhabit Humboldt Bay and its tributaries. In addition, the tidewater goby (California Species of Special Concern and federally listed Endangered) is believed to have inhabited the area historically. Impacts are not expected to these special-status fish species because the project would not impact Humboldt Bay or its tributaries. However, due to the proximity of construction to the cooling water intake and discharge channels that connect with Humboldt Bay, there is the possibility for impacts to special-status fish species and their habitat. Potential threats include sewage effluent, upstream alteration of sediment flow, diversion of water flow, and watercourse contamination resulting from vehicular activity.

- Bald eagle (*Haliaeetus leucocephalus*) and California brown pelican (*Pelecanus occidentalis californicus*)

The bald eagle is listed as an Endangered species and a Fully Protected species in California; it was recently delisted by the USFWS. In addition, bald eagles are protected under the Bald and Golden Eagle Protection Act. Bald eagles have been seen at the Humboldt Bay Power Plant and may use the cooling water intake and discharge channels for foraging.

The California brown pelican is listed as Endangered under the federal and state endangered species acts and is also a Fully Protected species. California brown pelicans feed on fish in the waters of Humboldt Bay and surrounding areas;

however, there are no known breeding colonies of California brown pelicans in the area. California brown pelicans have been observed foraging in the cooling water discharge channel and roosting along the shoreline near the Humboldt Bay Power Plant impacts to bald eagles and California brown pelicans could occur through discharge of oil or other contaminants into the intake and discharge channels.

In addition to the loss of USACE and Coastal Commission wetlands discussed previously and the potential impacts to protected species summarized above, construction of the HBRP would result in the permanent loss of approximately 1.5 acres of grassland and the temporary disturbance of approximately 2.5 acres of grassland. Grassland habitat provides foraging and/or nesting habitat for a number of common bird species (including mourning doves, house finches, and red-winged blackbirds) as well as habitat for wildlife species such as raccoons and California ground squirrels. In addition to the loss of grassland habitat, any wildlife species using the habitat may be impacted due to construction of the HBRP or through the actions of construction personnel. (Ex. 200, pp. 4.2-14 to 4.2-17.)

During project operation, avian collisions with the transmission line and exhaust stacks pose the potential for adverse impacts. In addition, large birds may be electrocuted due to simultaneously contacting a conductor line and a ground wire. Operation noise and lighting also have the potential to disrupt normal wildlife behavior. (Ex. 200, pp. 4.2-17 to 4.2-18.)

3. Mitigation of Impacts

The evidence clearly establishes that the Conditions of Certification contained in the record (Ex. 200, pp. 4.2-23 to 4.2-33, as modified by Ex. 75), will reduce the potential for adverse impacts from construction and operation of the HBRP to below a level of significance, as well as avoid contributing to adverse cumulative

impacts. (Ex. 200, p. 4.2-19.) For example, impacts to disturbed wetlands will be offset as shown below in **Biological Resources Table 3**:

BIOLOGICAL RESOURCES Table 3
Wetland Mitigation

Wetland Type	Mitigation Ratio	Approximate Wetland Acreage Impacted	Approximate Mitigation Acreage Required
Drainages	1.5:1	0.07	0.11
Seasonal wetlands	2:1	0.13	0.25
Riparian, salt, and freshwater marshes	4:1	0.05	0.22
Other Coastal Commission wetlands	1:1	3.46	3.46
TOTAL		**3.71 acres**	**4.04 acres**

Source: Ex. 200, p. 4.2-11.

These acreages reflect the verification of wetland delineation by the USACE and guidance from the Coastal Commission regarding wetland mitigation ratios. (Exs. 25; 200, p. 4.2-11.)

Furthermore, the evidence explains how the Conditions of Certification ensure that all project impacts will be mitigated. Condition of Certification **BIO-1** requires the selection of a qualified Designated Biologist by the project owner to oversee the implementation of mitigation measures for all potential biological resources impacts. **BIO-2** outlines specific duties that this individual must carry out to assure adequate mitigation of project related impacts. **BIO-3** outlines the qualifications for any Biological Monitors assigned to assist the Designated Biologist. Condition of Certification **BIO-4** describes the authority of the Designated Biologist and the Biological Monitor to ensure that impacts to biological resources, including wetlands, are avoided to the extent possible. **BIO-5** describes a Worker Environmental Awareness Program (WEAP) that will be required to ensure that construction personnel do not cause additional impacts to wetlands and other biological resources during construction of the HBRP. **BIO-6**

describes a Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP) that will be prepared by the project owner and that describes all measures necessary to ensure compliance with LORS and minimization of impacts related to affected biological resources. Condition of Certification **BIO-8** requires the project owner to acquire a Clean Water Act Section 401 Water Quality Certification; this certification will assist in avoiding and minimizing impacts to wetlands. **BIO-9** requires the project owner to provide a copy of the Clean Water Act Section 404 permit and incorporate its terms and conditions into the BRMIMP. Obtaining this permit and implementing its terms and conditions will help ensure compliance with LORS related to wetland impacts. **BIO-10** requires the incorporation of feasible measures to avoid impacts to biological resources, including wetlands, in the project design. Condition of Certification **BIO-12** ensures that impacts to wetlands are mitigated through implementation of the wetland mitigation plan, and that the project complies with USACE and Coastal Commission requirements regarding wetland mitigation. (Ex. 200, p. 4.2-13.)

The evidence shows that these Conditions of Certification, in conjunction with others in this Decision such as **SOIL and WATER-1**, **-2**, and **-3**, will ensure that special-status species are not impacted, and that effects of the project upon other species are minimized to below a level of significance. (Ex. 200, p. 4.2-15 to 4.2-16.) The evidence also demonstrates that individual requirements in the foregoing conditions, such as the installation of bird flight diverters, proper design and construction of transmission lines, and prescribed exterior lighting techniques, will contribute to satisfactory impact mitigation. (Ex. 200, 4.2-17 to 4.2-18; see Conditions of Certification **BIO-10** and **VIS-4**.)

Finally, upon planned-for permanent or unexpected permanent closure, the Conditions of Certification ensure that appropriate measures will be taken to address potential impacts to biological resources. (Ex. 200, 4.2-23; Condition of Certification **BIO-7**.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted record of evidence, we make the following findings and reach the following conclusions:

1. The HBRP site, associated areas, and linear facility alignments are located on an existing power plant site.

2. The evidence contains an analysis of potential adverse impacts upon biological resources, including special-status species, which may potentially be affected by project construction and operation.

3. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.

4. The project owner will implement a construction mitigation management plan by educating workers on habitat protection, and designating a qualified biologist and biological monitors with authority to halt activities to avoid impacts to sensitive resources.

5. The project owner will submit a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) incorporating all biological mitigation and compliance measures required by applicable local, state, and federal LORS.

6. Transmission lines will be designed to reduce the risk of avian collisions and electrocutions. Nighttime lighting will be designed to avoid disruption to wildlife.

7. The HBRP will impact wetlands under the jurisdictions of the USACE and the Coastal Commission.

8. The evidence establishes that the impact to wetlands will be mitigated to below levels of significance.

9. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification below, as well as those in other portions of this Decision such as **SOIL and WATER-1**, **-2**, **-3** and **VIS-4**, the HBRP will not result in significant direct, indirect, or cumulative impacts to biological resources.

10. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification, the

HBRP will conform to all applicable laws, ordinances, regulations, and standards related to biological resources as identified in the pertinent portion of **Appendix A** of this Decision.

The Commission concludes, therefore, that implementation of the Conditions of Certification, below, will ensure the Humboldt Bay Repower Project conforms with all applicable laws, ordinances, regulations, and standards relating to biological resources.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-1 The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; and

2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and

3. At least one year of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

Verification: The project owner shall submit the specified information at least 90 days prior to the start of any site or related facilities mobilization. No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist must be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days

prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

Designated Biologist Duties

BIO-2 The project owner shall ensure that the Designated Biologist performs the following during any site or related facilities mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM.

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification;

2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan, to be submitted by the project owner;

3. Be available to supervise, conduct, and coordinate 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;

4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e., parking lots) for animals in harm’s way;

6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification;

7. Respond directly to inquiries of the CPM regarding biological resource issues;

8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and

9. Train the Biological Monitors as appropriate and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation, a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties are ceased as approved by the CPM.

Biological Monitor Qualifications

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the assigned biological resource tasks.

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), WEAP, and all permits.

Verification: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site or related facilities mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that the individual Biological Monitor(s) has been trained and the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to the first day of monitoring activities.

Designated Biologist and Biological Monitor Authority

BIO-4 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification.

If required by the Designated Biologist and Biological Monitor(s), 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 an unauthorized 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 to any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage.

If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

Verification: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt to any site mobilization, ground disturbance, grading, construction, or operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-5 The project owner shall develop and implement a CPM-approved Worker Environmental Awareness Program (WEAP) that informs each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure, about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media are made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;

3. Present the reasons for protecting these resources;

4. Present the meaning of various temporary and permanent habitat protection measures;

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

6. Include a training acknowledgment form to be signed by each worker indicating that he/she received training and shall abide by the guidelines.

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

Verification: At least 60 days prior to the start of any site or related facilities mobilization, the project owner shall provide to the CPM two copies of the proposed draft WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. At least 10 days prior to site or related facilities mobilization, the project owner shall submit two copies of the CPM-approved materials, if the materials originally submitted to the CPM required modification. The training may be presented in the form of a multi-media presentation in VHS, CD-ROM, or DVD format.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-6 The project owner shall develop a BRMIMP and submit two copies of the proposed BRMIMP to the CPM (for review and approval) and to the Coastal Commission (for review and comment) and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;

2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;

3. All biological resource mitigation, monitoring, and compliance measures required in federal agency terms and conditions, such as those provided in the CWA Section 404 permit;

4. All biological resources mitigation, monitoring, and compliance measures required in other state agency terms and conditions, such as those provided in the Water Quality Certification;

5. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;

6. All required mitigation measures for each sensitive biological resource;

7. A wetland mitigation plan for temporary and permanent impacts to USACE and Coastal Commission wetlands;

8. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;

9. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;

10. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities—one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen;

11. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

13. All performance standards and remedial measures to be implemented if performance standards are not met;

14. A preliminary discussion of biological resources related facility closure measures;

15. Restoration and re-vegetation plan;

16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

17. A copy of all biological resources related permits obtained.

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site or related facilities mobilization.

The CPM, in consultation with the Coastal Commission and any other appropriate agencies, shall determine the BRMIMP's acceptability within 45 days of receipt. If any permits have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization, the revised BRMIMP shall be resubmitted to the CPM.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP in order to obtain CPM approval.

Any changes to the approved BRMIMP must also be approved by the CPM in consultation with appropriate agencies to ensure no conflicts exist.

Implementation of BRMIMP measures shall be reported in the Monthly Compliance Reports by the Designated Biologist (i.e., survey results, construction activities that were monitored, species observed). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Closure Plan Measures

BIO-7 The project owner shall incorporate into the permanent or unexpected permanent closure plan and the BRMIMP measures that address the local biological resources related to facility closure and implement them.

The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures. Typical measures are:

1. Removal of transmission conductors when they are no longer used and useful;

2. Removal of all power plant site facilities and related facilities;

3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and

4. Re-vegetation of the plant site and other disturbed areas utilizing appropriate seed mixture.

Verification: Draft permanent or unexpected closure measures shall be made part of the BRMIMP. At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure, and provide final measures in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

Water Quality Certification

BIO-8 The project owner shall acquire Water Quality Certification from the Regional Water Quality Control Board in accordance with Section 401 of the Clean Water Act, or a waiver, incorporate the biological resources related terms and conditions into the project's BRMIMP, and implement them.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall provide the CPM with a copy of the final Water Quality Certification or waiver.

U. S. Army Corps of Engineers Section 404 Permit

BIO-9 The project owner shall incorporate the terms and conditions of the final Nationwide Permit per U.S. Army Corps of Engineers (USACE) Section 404 of the federal Clean Water Act into the project's BRMIMP and implement them.

Verification: At least 60 days prior to the start of any site or related facilities mobilization activities, the project owner shall include the USACE permit in the BRMIMP.

Impact Avoidance Mitigation Features

BIO-10 Any time the project owner modifies or finalizes the project design, it shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources, including the following:

1. Design, install, and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

2. Avoid wetland loss to the greatest extent possible;

3. Design, install, and maintain transmission lines and all electrical components in accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006,* to reduce the likelihood of electrocutions of large birds;

4. Design, install, and maintain transmission lines and all electrical components in accordance with the Avian Power Line Interaction Committee's (APLIC) *Mitigating Bird Collisions with power lines: The State of the Art in 1994,* to reduce the likelihood of bird collisions;

5. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species from landscaping plants;

6. Prescribe a road sealant that is non-toxic to wildlife and plants and use only fresh water when adjacent to wetlands, rivers, or drainage canals;

7. Design, install, and maintain facility lighting to be hooded and directed downward and toward the area to be illuminated, minimizing light casted toward wildlife habitat; and

8. Install swan flight diverters at 5-meter intervals on the new transmission line (ground wire).

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Mitigation Management to Avoid Harassment or Harm

BIO-11 The project owner shall implement the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to the local biological resources:

1. Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep-walled holes or trenches if outside an approved, permanent exclusionary fence. The

temporary fence shall be hardware cloth or similar materials that are approved by USFWS and CDFG;

2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week;

3. Prohibit feeding of wildlife by staff and subcontractors;

4. Prohibit non-security related firearms or weapons from being brought to the site;

5. Prohibit pets from being brought to the site;

6. Report all inadvertent deaths of special-status species to the appropriate project representative. Injured special-status animals shall be reported to CDFG, and the project owner shall follow instructions that are provided by CDFG; and

7. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Wetland Mitigation

BIO-12 To mitigate for temporary and permanent impacts to USACE-jurisdictional drainages, USACE-jurisdictional seasonal wetlands, USACE-jurisdictional marshland, and Coastal Commission wetlands, the project owner shall establish a minimum of 4.04 acres of wetland creation, restoration, and enhancement to ensure compliance with all USACE and Coastal Commission requirements.

The project owner shall develop and implement a wetland mitigation plan for inclusion in the project's BRMIMP. The project owner shall place wetland mitigation lands under deed restriction in perpetuity to ensure that mitigation lands are protected from future development. The wetland mitigation plan shall be prepared in consultation with the Designated Biologist and shall be developed in accordance with USACE and Coastal Commission guidance documents. At a minimum, the wetland mitigation plan shall include:

1. Maps of wetland impact and mitigation areas;

2. Acreages of wetlands to be impacted and acreages of wetland mitigation areas;

3. Terms and conditions of deed restriction (in perpetuity) for wetland mitigation areas;

4. Description of mitigation goals and objectives;

5. Description of wetland functions lost at impact sites;

6. Description of wetland functions to be gained at each mitigation site;

7. Description of overall watershed improvements to be gained;

8. Photographs and descriptions of wetland mitigation areas, including photographs prior to the implementation of, and after the completion of, the wetland mitigation;

9. Construction plans for wetland restoration, creation, and enhancement work to be completed;

10. Description of planned hydrology;

11. Description of plant material to be used for wetland restoration and creation;

12. Duration of wetland mitigation monitoring and description of monitoring methods;

13. Performance standards to be used to help decide if/when proposed wetland mitigation is or is not successful; and

14. All performance standards and remedial measures to be implemented if performance standards are not met.

Verification: The project owner shall provide the final wetland mitigation plan at least 60 days prior to start of any site or related facilities mobilization. The CPM, in consultation with the USACE and any other appropriate agencies, will determine the wetland mitigation plan's acceptability within 45 days of receipt. The approved wetland mitigation plan and its implementation methods shall be included in the BRMIMP.

Implementation of wetland mitigation plan measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which

items of the wetland mitigation plan have been completed, a summary of all modifications to the wetland mitigation plan made during the project's site mobilization, ground disturbance, grading, and construction phases, and which wetland mitigation items are still outstanding.

B. SOIL AND WATER RESOURCES

This section of the Decision focuses on the soil and water resources associated with the project, including the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also considers site contamination and any potential cumulative impacts to water quality in the vicinity of the project. Mitigation measures are included in the Conditions of Certification to ensure that the project will have no adverse impacts on the environment and that it will comply with all applicable laws, ordinances, regulations, and standards (LORS).

Applicant and Staff submitted extensive evidence related to the HBRP's effects on soil and water resources. The evidence shows that potential soil and water impacts of the project will be mitigated to less than significant levels through implementation of the Conditions of Certification which follow this discussion.

SUMMARY OF THE EVIDENCE

1. Soil Resources

The HBRP is located on Buhne Point on the shore of Humboldt Bay, approximately 3 miles south of the City of Eureka. Soils of Hookton silty clay loam comprise the majority of the proposed HBRP site. Some areas of the Hookton silty clay loam are overlain by Bayside silty clay loam deposits. Bayside soils are imperfectly to poorly drained, fine-textured basin soils, developed in sedimentary alluvium from the Franciscan and Wildcat formations in the North Coast Range Mountains. They occur at elevations from sea level to above 50 feet within about a 10-mile perimeter of Humboldt Bay. Silty clay loam has a slight to moderate potential for water erosion. The HBRP is not located on prime farmland. (Ex. 1, § 8.11 and Figure 8.11-2.)

The HBRP construction would occur on the existing site surrounded by a well developed area where a separate supporting drainage infrastructure exists. The site is relatively flat and encompasses an area of about 12.4 acres including 5.4 acres for the HBRP footprint, two acres of construction lay down area, three acres of access road, and two acres of construction parking. (Ex. 1, § 8.11.2.3.) The greatest potential for soil loss would be from erosion of the silty loam, because it has less cohesion than the Hookton clayey soils. This is also the predominant soil type in the areas to be disturbed. The Applicant estimated that during construction uncontrolled water runoff and erosion could result in offsite transport of approximately 56.4 tons of soil.

The Draft Construction Drainage, Erosion, and Sediment Control Plan/Stormwater Pollution Prevention Plan (DESCP/SWPPP) submitted by the Applicant provides erosion control best management practices (BMPs) to address soil erosion during construction and operation. With the implementation of BMPs to limit erosion and trap eroded sediments, the Applicant estimated that the soil loss from the HBRP site due to water erosion would be reduced to approximately 1.1 tons. (Ex. 1, § 8.11.2.4.1, and Table 8.11-2.)

We find that implementation of an approved DESCP will limit erosion in conformance with Condition of Certification **SOIL & WATER-1**. The Applicant will also prepare a SWPPP for Construction Activity for control of erosion from runoff at the HBRP site in conformance with Condition of Certification **SOIL & WATER-2**. Primary earth-disturbing activities during construction would be scheduled during spring through fall, when rain and erosion potential from stormwater runoff conditions are the least. The construction BMPs would include implementing silt fences, sand bags, hay bales, geotextiles, fiber rolls, dust control, and stockpile management. The lay down area would be covered with gravel to accommodate all-weather use and to protect the ground surface, and would be left in this condition during the operation phase of the project until the Humboldt Bay Repowering Project elects to otherwise develop this area. (Ex. 200, p. 4.9-10.)

The Applicant proposes to employ BMPs including watering the HBRP site daily and enclosing, covering, watering, or treating soil stock piles to limit soil loss due to wind erosion, consistent with Condition of Certification **SOIL & WATER-1**. We find that these recommendations are sufficient to mitigate soil loss due to wind erosion.

During operation, the HBRP site would be primarily covered with paving and gravel, or landscaped so that soil exposure to wind and water is minimized. Implementation of stormwater drainage BMPs would further protect the exposed soils as specified in Condition of Certification **SOIL & WATER-1** and the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Industrial Activity. Under the NPDES permit as specified in Condition of Certification **SOIL & WATER-3**, the project owner would develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of the entire HBRP site (Operational SWPPP). (Ex. 200, p. 4.9-14.) We find that adverse impacts to soil, and the potential for soil erosion, would not be significant during HBRP operation.

2. Surface Hydrology and Groundwater

The HBRP site is located within the Humboldt Bay Watershed, encompassing a drainage area of approximately 223 square miles. (Ex. 200, p. 4.9-5.) Annual precipitation in Humboldt County averages about 39 inches, and can vary significantly depending on local conditions. Within the basin are the ancient redwoods of the Headwaters Forest, highly productive industrial timberlands, prime agricultural lands and functioning streams and wetlands, all of which are connected to the bay and tidal marshlands. (*Id.*)

The site is located on a relatively flat area at an elevation of 12 feet mean lower low water (MLLW). Surface drainage around the site flows naturally into the existing plant drainage system. The surface water is then discharged into the

Humboldt Bay Power Plant's cooling water intake canal, flows through the existing power plant's once-through condensers, and is discharged into Humboldt Bay via the cooling water discharge canal. (Ex. 1, p. 8.15-2.)

HBRP would be located on the Eureka Plain Groundwater Basin. This basin extends over an area of approximately 37,400 acres (Ex. 1, Figure 8.15-2.) Groundwater is encountered at depths of five to six feet during relatively dry times of the year. Seasonal groundwater may rise close to the existing site surface during periods of wet weather and high tides. (Ex. 200, pp. 4.9-5 to 4.9-6.)

The construction phase of HBRP will likely require groundwater removal (dewatering) within excavated areas (Ex. 1, § 8.15.2.4.) Geotechnical investigations for HBRP have encountered groundwater at depths of five to six feet, and seasonally near the ground surface. (Ex. 200, p. 4.9-12.) Condition of Certification **SOIL & WATER-6** would require the project owner to file an Application/Report of Waste Discharge and obtain a National Pollutant Discharge Elimination System (NPDES) Permit from the North Coast Regional Water Quality Control Board (RWQCB) to assure the discharge of groundwater associated with dewatering site excavations would not impair the quality of surface water in Buhne Slough. As an alternative, and if applicable, the project owner may provide documentation from the North Coast RWQCB that HBRP's discharge of groundwater and stormwater to Buhne Slough would be permitted under the General NPDES Permits that would be utilized in accordance with Conditions of Certification **SOIL & WATER-2 and -3**. (Ex. 200, p. 4.9-12.)

The HBRP site construction would disturb about 12.4 acres. Stormwater drainage of these relatively flat areas disturbed during construction would be directed to separate sedimentation basins. The sedimentation basins will serve to clarify the stormwater before it is discharged into Buhne Slough. (Ex. 1, § 8.15.2.4.)

We find that there will not be a significant adverse impact on either groundwater or surface water associated with construction of the HBRP if dewatering and stormwater management is conducted in compliance with the NPDES Permit. We further find that the proposed construction scheduling and methods for erosion and drainage control, including the development of a Final DESCP consistent with Condition of Certification **SOIL & WATER-1,** and a SWPPP for Construction Activity in accordance with Condition of Certification **SOIL & WATER-2**, will avoid significant adverse impacts from dewatering and stormwater during HBRP construction.

HBRP operation would not alter the existing drainage patterns and would not result in increased runoff volumes. Because HBRP would discharge stormwater runoff, it must comply with the Humboldt County General NPDES Permit and Stormwater Management Plan. The NPDES Permit regulates stormwater effluent limitations, specifies monitoring and reporting requirements, and requires preparation and implementation of a SWPPP for industrial activities. (Ex. 200, p. 4.9-14.)

Humboldt County has established the 100-year base flood elevation to be +6 feet in the vicinity of the project. The existing HBRP site varies in elevation from 8 to 12 feet. The HBRP site will be graded to an elevation of 11 to 12 feet, with major equipment foundations at elevations of approximately 13 feet. The HBRP site will not be within the 100-year flood hazard area once the site is built according to plans, and thus will not impede or redirect flood flows. (Ex. 200, p. 4.9-14.) The surface drainage system will be designed to discharge the 10-year 24-hour storm runoff without flooding roads and the 50-year 24-hour storm runoff without flooding plant facilities. (Ex. 200, p. 4.9-17.)

The site is in a moderate to high tsunami danger zone. After considering wave run-up over land, the maximum wave run-up could range from about 23 feet at mean lower low water to about 50 feet at mean higher high water. All major

structures will be adequately anchored to prevent major damage from wave action and displacement due to buoyancy as a result of the potential for tsunami hazard. (Ex. 1, § 8.15.1.3.) We find that operation of HBRP would not cause any significant adverse impact to surface hydrology or exacerbate flooding in the event of a tsunami.

We find that there will not be a significant adverse impact on either groundwater or surface water associated with construction and operation of the HBRP if dewatering and stormwater management is conducted in compliance with the NPDES Permit.

3. Project Water Supply and Treatment

Raw water for HBRP process needs would be supplied from PG&E's well No. 2 via an existing 6-inch raw water supply pipeline located within the project site. The HBRP facility operations would require plant process water for maintenance of the engine cooling systems (air radiators), closed cooling water system for auxiliary equipment, preheating for jacket water, and engine turbocharger washing. The project's annual demand for process water would average 2.7 AFY based on an annual operation of 8,760 hours per year at full plant output. (Ex. 200, p. 4.9-6.) Therefore, we find that there will not be a significant adverse impact on groundwater, as a result of operation of the HBRP.

Potable water will be supplied from the Humboldt Community Services District (HCSD) for sanitary and domestic uses. The estimated sanitary and domestic use for the project is 0.182 AFY. The firewater tank will be filled from both raw and potable water sources. (*Id.*)

State water policy requires that water be put to the highest and best use whenever possible. Condition of Certification **SOIL & WATER-5** specifies that

the Applicant is to use raw water from PG&E's well No. 2 during construction for all non-potable purposes including compaction and dust suppression.

Construction wastewater and stormwater runoff will be managed to maintain compliance with the required Drainage, Erosion and Sediment Control Plan and Construction SWPPP, consistent with Conditions of Certification **SOIL & WATER-1** and **SOIL & WATER-2**. We find that no significant impact to soil, groundwater, or surface water would occur if the above mentioned mitigation measures are implemented.

Potable water required for sinks, toilets, showers, drinking fountains, and eye wash/safety showers and to serve as a back-up water supply for the process needs will be provided from a new 1,200-foot 4- to 6-inch water supply pipeline from the Humboldt Community Services District (HCSD) main in King Salmon Avenue. This pipeline will be constructed under the temporary construction access road and will interconnect to the HCSD pipeline in King Salmon Avenue. (Ex. 1, § 8.15.2.1.) HCSD has issued a Will Serve Letter to HBRP dated July 18, 2006. (Ex. 1, Appendix 7A.). We adopt Condition of Certification **SOIL & WATER-7** to require the project owner to secure a Water Supply Service Agreement for potable water service from HCSD.

We also adopt Condition of Certification **SOIL & WATER-5** requiring the project owner to submit water use data**.** The HBRP project owner would install and maintain metering devices as part of the water supply and distribution system to separately monitor and record use of groundwater from the PG&E well No. 2, and potable water supplied by HCSD. An annual summary of water use by the HBRP would be submitted to the Energy Commission's Compliance Project Manager (CPM) in the Annual Compliance Report.

We find that if the recommended Conditions of Certification are implemented, HBRP's operational use of groundwater with potable water as an emergency backup supply will not result in a significant adverse impact.

4. Wastewater

During project operations, sanitary wastewater and effluent from the oil/water separator would be discharged into the sanitary sewer operated by Humboldt Community Services District at an average rate of 0.60 gallons per minute (gpm). HCSD has indicated in their July 18, 2006 letter to PG&E, that the project's rate of wastewater discharge could easily be absorbed into their system. (Ex. 1, Appendix 7A.) No significant adverse impacts are expected from any HBRP wastewater discharge after adoption and implementation of Condition of Certification **SOIL & WATER-8**, which would require the project owner to obtain a Permit for Industrial Wastewater Discharge and comply with the wastewater discharge limitations, pretreatment requirements, peak flow restrictions, dewatering discharges, payment of fees, and monitoring and reporting requirements of Humboldt Community Services District.

5. Cumulative Impacts and Mitigation

Staff analyzed the following foreseeable activities at the existing HBPP in conjunction with the proposed construction and operation of the HBRP for their potential to cause a significant cumulative impact:

- Independent Spent Fuel Storage Installation (ISFSI);
- Decommissioning of the Nuclear Unit 3 and associated environmental studies necessary to define decommissioning activities; and
- Demolition of Humboldt Bay Power Plant's Units 1 and 2, the Mobile Emergency Power Plant (MEPP) and associated equipment.

Each of these projects is, and will be, conducted under a unique set of permit conditions and environmental review and permitting. The ISFSI initiated construction during spring 2007 and was reviewed and approved by the Coastal Commission and the Nuclear Regulatory Commission, as well as subject to permits and approvals of other federal, state and local agencies. The other two projects will be conducted in a similar manner. The regulatory permits and approvals serve to assure that the projects alone as well as cumulatively will not cause a significant adverse impact or non-conformance with LORS.

Good engineering practices and BMPs will be used in the project design and operation. Stormwater discharge will adhere to a SWPPP and local agency water quality standards. The project will use very little water for cooling and industrial processes and therefore will contribute to water conservation efforts.

Activities related to the HBRP project would not result in cumulative impacts to water and soil resources. There is no evidence in the record that related projects are occurring in the area that would result in cumulative impacts to soil and water resources; or that there are any other reasonably foreseeable future projects that, together with the HBRP incremental impact to soil and water resources, would result in a significant adverse impact.

FINDINGS AND CONCLUSIONS

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

1. Project construction and operation has the potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality.
2. The draft erosion control plan for the construction phase of the project identifies best management practices to be used to control erosion and the discharge of storm water off-site. If implemented these measures will ensure no significant adverse impacts occur to area soils.

3. The HBRP will neither directly intake water from, nor discharge effluent into, Humboldt Bay.

4. The North Coast Regional Water Quality Control Board will oversee the process addressing migration of existing soil and ground water contamination from the project site.

5. Water use at the HBRP is consistent with state water policy for the conservation of potable water supplies.

6. Conditions of Certification contained in this Decision establish a mitigation process pursuant to California environmental statutes and CEQA case law.

7. The Conditions of Certification below are adequate to ensure that construction and operation of the HBRP will not create significant adverse impacts to the matters addressed in the technical discipline of **Soils and Water Resources**.

We therefore conclude that the project will conform to all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

SOIL & WATER-1 The project owner shall obtain CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan (DESCP) that ensures protection of water quality and soil resources of the HBRP site and all linear facilities for both the construction and operational phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, and identify all monitoring and maintenance activities. The plan 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 NPDES permit. The DESCP shall contain the following elements:

- Vicinity Map – A map shall be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

- Site Delineation – The Project, which includes the actual facility, lay down area, all linear facilities, and other project elements, shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.
- 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 HBRP construction site; lay down area, and all pipeline and transmission line construction corridors.
- Drainage – The DESCP shall provide a topographic site map showing all existing, interim and proposed drainage systems; drainage area boundaries and water shed size(s) in acres; the hydraulic analysis to support the selection of Best Management Practices (BMPs) to divert off-site drainage around or through the HBRP site and lay down areas. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.
- Clearing and Grading – The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extents 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. The plan shall contain illustrations of existing and proposed topography tying in proposed contours with existing topography. The DESCP shall include a statement of the quantities of material excavated or filled for each element of the HBRP (project site, lay down area, transmission corridors, and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported.
- Project Schedule – The DESCP shall identify on the topographic site map the location of the site specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.
- Best Management Practices – The DESCP shall show the location, timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, during project element excavation and construction, final grading/stabilization, and following construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances.

BMPs shall include measures designed to prevent wind and water erosion in areas with existing soil contamination. The maintenance schedule should include post-construction maintenance of erosion control BMPs.

- Erosion Control Drawings -- The erosion control drawings and narrative must be designed and sealed by a professional engineer/erosion control specialist.

Verification: No later than 90 days prior to the start of each phase of construction (Phase 1 consisting of site mobilization, demolition of existing facilities within the footprint of HBRP, completion of site remediation and associated backfill in accordance with Condition of Certification **WASTE-7**, and construction of the access road, and Phase 2 consisting of all other construction activity), the project owner shall submit a copy of the corresponding DESCP to the Humboldt Community Services Department for review and comment. No later than 60 days prior to the start of each phase of construction, the project owner shall submit the corresponding DESCP and comments to the CPM for review and approval. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control measures and the results of monitoring and maintenance activities.

No later than 90 days prior to commercial operation, the project owner shall submit a copy of the operational DESCP to the Humboldt Community Services Department for review and comment. No later than 60 days prior to commercial operation, the project owner shall submit the operational DESCP and comments to the CPM for review and approval. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance 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 Stormwater Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the construction of the entire HBRP site, lay down area, and all linear facilities (Construction SWPPP).

Verification: The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB about the General NPDES permit for the Discharge of Stormwater Associated with Construction Activities within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include copies of the Notice of Intent and Notice of Termination for the project. The project owner shall notify the CPM of any reported non-compliance with the Construction SWPPP.

SOIL & WATER-3 The project owner shall comply with the requirements of the General NPDES Permit for Discharges of Stormwater Associated with Industrial Activity. The project owner shall develop and implement a SWPPP for the operation of the entire HBRP site (Operational SWPPP).

Verification: At least 60 days prior to commercial operation, the project owner shall submit copies to the CPM of the Operational SWPPP for the entire HBRP site for review and approval. This information shall include a copy of the Notice of Intent. Following the commercial operation date, the project owner shall notify the CPM of any reported non-compliance with the SWPPP, any associated corrective measures, and the results of implementing those measures.

SOIL & WATER-4 The project owner shall obtain from Humboldt County Flood Control District/Department of Public Works a Flood Plain Development Permit for HBRP's construction within an area of special flood hazard. HBRP shall comply with all design and reporting requirements as applicable. The project owner must secure a Flood Elevation Certificate (FEMA Form 81-31) based on as-built construction drawings.

Verification: At least 30 days prior to placement of engineered fill for building pads, the project owner shall provide the CPM with a copy of its Flood Plain Development Permit. The Flood Plain Development Permit shall be in accordance with Section 335-4 of the Humboldt County Flood Ordinance. At least 30 days prior to commercial operation, the project owner shall provide evidence of a final Flood Elevation Certificate based on the finished construction to demonstrate compliance with Section 335-5 of the Humboldt County Flood Ordinance.

SOIL & WATER-5 The project owner shall use groundwater as its primary water supply for construction and operations, including cooling, process, and other approved non-potable uses. Prior to construction, the project owner shall install or obtain access to a service or hydrant as supplied by PG&E's well No. 2 for use during construction for compaction and dust suppression, hydrostatic testing, and all other non-potable uses. Prior to commercial operation, the project owner shall install and maintain metering devices as part of the HBRP process water supply and distribution system to monitor and record in gallons per day the total volumes of water supplied to the HBRP from each water source. Those metering devices shall be operational for the life of the project. Potable water supply records can be those provided by HCSD.

The project owner shall prepare an annual Water Use Summary, which shall include the monthly range and monthly average of daily potable and process water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. For subsequent

years, the annual Water Use Summary shall also include the yearly range and yearly average water use by the project. The annual summary shall be submitted to the CPM as part of the annual compliance report.

Verification: At least 30 days prior to construction, the project owner shall submit proof to the CPM that it has installed or obtained access to a service or hydrant as supplied by PG&E's well no. 2 for use during construction for dust suppression, hydrostatic testing and all other non-potable uses. At least 60 days prior to commercial operation of the HBRP, the project owner shall submit to the CPM proof that metering devices have been installed and are operational on the reclaimed and potable water supply and distribution systems. Potable water use may be based on metering or billings from the supplier.

If there is a significant change in the water supply source(s), the new source(s) supply and distribution system shall also have metering devices. Any water used from the new source(s) shall be incorporated into the annual Water Use Summary within 30 days of hook-up.

The project owner shall submit a Water Use Summary to the CPM in the annual compliance report. The summary report shall distinguish between recorded water use of reclaimed and potable water. Included in the summary report of water use, the project owner shall submit copies of meter records documenting the quantities of water provided. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report.

SOIL & WATER-6 The project owner shall file an Application/Report of Waste Discharge and obtain an NPDES Permit from the North Coast Regional Water Quality Control Board to assure the discharge of groundwater associated with dewatering HBRP site excavations during construction and for discharge of stormwater during both construction and operation, would not impair the quality of surface water in Buhne Slough. The NPDES Permit issued by the North Coast RWQCB shall be received prior to initiating any grading and/or excavation activities associated with HBRP construction. As an alternative and if applicable, the project owner may either provide documentation from the North Coast RWQCB that HBRP's discharge of groundwater and stormwater to Buhne Slough would be permitted under the General NPDES Permits that would be utilized in accordance with Conditions of Certification **SOIL & WATER-2 and -3** or has obtained a permit from the Humboldt Community Services District for disposal.

Verification: No later than 180 days prior to start of site mobilization, the project owner shall submit an Application/Report of Waste Discharge to the North Coast RWQCB, with a copy to the CPM. Alternatively, the project owner may provide documentation from the North Coast RWQCB that HBRP's discharge of groundwater and stormwater to Buhne Slough would be permitted under the

General NPDES Permits that would be utilized in accordance with Conditions of Certification **SOIL & WATER-2 and -3** or has obtained a permit from the Humboldt Community Services District for disposal**.** The NPDES Permit issued by the North Coast RWQCB, or either documentation from the North Coast RWQCB indicating the sufficiency of the General NPDES Permits or the Humboldt Community Services District permit, shall be received and a copy provided to the CPM prior to initiating any grading and/or excavation activities associated with HBRP construction. The project owner shall provide the CPM with copies of all correspondence between itself and the North Coast RWQCB within 10 days of mailing or of receipt as related to the application and permit.

SOIL & WATER-7 The project owner shall secure a Water Supply Service Agreement for potable water service from HCSD. The project owner shall report to the CPM any incidents of non-compliance with the terms of the Water Supply Service Agreement, and remedies to avoid recurrence.

Verification: At least 30 days prior to HBRP commercial operation, the project owner shall provide the CPM with a copy of its Water Service Agreement with HCSD. The CPM shall be notified within 10 days of any incidents of non-compliance with the terms of the Water Supply Service Agreement, including proposed remedies to avoid recurrence, and the results of implementing those remedies.

SOIL & WATER-8 The project owner shall obtain a Permit for Industrial Wastewater Discharge and comply with the wastewater discharge limitations, pretreatment requirements, peak flow restrictions, dewatering discharges, payment of fees, and monitoring and reporting requirements of Humboldt Community Services District.

Verification: At least 30 days prior to HBRP commercial operation, the project owner shall provide the CPM with a copy of its Permit for Industrial Wastewater Discharge from HCSD. The CPM shall be notified in writing within 10 days of any reported non-compliance with HCSD's discharge requirements, including corrective measures for non-compliance and the results of implementing those measures.

C. CULTURAL RESOURCES

The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Res. Code, § 5024.1; Cal. Code Regs., tit. 14 § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Res. Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures.[13]

The CEQA Guidelines provide a definition of a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR", or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place,

[13] The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age since there is often a five year lag between resource evaluation and the date that eligibility is decided.

record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." [Cal. Code Regs., tit. 14, § 15064.5(a).] Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. [Pub. Res. Code, § 5024.1(d).]

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: it is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, it is associated with the lives of persons significant in our past (Criterion 2); or, that it embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3); or, that it has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). [Pub. Res. Code § 5024.1.] In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. [Cal. Code of Regs., tit. 14, § 4852(c); Pub. Res. Code §§ 5020.1 (j) or 5024.1.] Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The proposed site is on a filled marsh on the northeast side of Buhne Hill. (Ex. 1, p. 2-28; pp. 8.4-1–8.4-2.) The town of King Salmon occupies the southwestern part of the Buhne Point peninsula, sharing it with the HBPP, located to the northeast (*Id.*, p. 8.6-1; fig. 2). The HBPP property has been used for industrial purposes since the late 1950s, but surrounding land use is mostly agricultural and rural residential. The HBPP property is bounded by Humboldt Bay to the north, by the town of King Salmon to the southwest, by Northwestern Pacific Railroad tracks to the east, and by King Salmon Avenue to the south. (*Id.*, p. 8.6-1.)

The proposed HBRP project would be constructed on a 5.4-acre parcel in the east-central part of the existing HBPP property. The new generating equipment would allow the decommissioning of the existing natural-gas–fired Units 1 and 2 (combined capacity of 105 MW) and the two diesel-fired Mobile Emergency Power Plants (MEPPs) (15 MW each) that currently produce all of the HBPP's power. A non-functional nuclear-powered generating facility, Unit 3, is also located on the HBPP property, but it is currently being decommissioned under a program overseen by the NRC. The position of PG&E is that the demolition of Units 1 and 2, the removal of the fuel pipeline that conveyed the liquid fuel formerly used by Units 1 and 2, the decommissioning of Unit 3, and the removal of the MEPPs are not part of the HBRP project description. (Exs. 1, p. 2-2; 45.) Nevertheless, several structures, that currently occupy the part of the HBPP parcel proposed for the construction of the HBRP would have to be removed and are therefore part of the HBRP project description. (Exs. 1, p. 2-1; 200, p. 4.3-5.)

a. Pre-Historic Background

The earliest radiocarbon date for this sub region (2,260 ± 210 years B.P. or before the present), was obtained from hearths at the base of the historic Tolowa village of *Taiga'n*, a large site at Point St. George, north of Crescent City. More local to the project are sites of the late prehistoric period, dating after 1,100 years B.P., including a large mound known to have been the ethnographic Wiyot village of *Tolowot*, on Gunther Island[14] in Humboldt Bay, about seven miles north of the proposed HBRP site. The earliest date for the village is a radio-carbon date of 1,050 ± 200 years B.P., taken from the peat at the base of the mound. The village was abandoned after the 1860 massacre of many of its Wiyot inhabitants by American settlers. (Exs. 1, p. 8.3-2; 200, p. 4.3-22.)

Prior to the arrival of Europeans in the region, Humboldt Bay was home to the Wiyot, an Algonquin-speaking group. Historically, Wiyot territory included the coast from south of the Little River to north of the Bear River Ridge. Estimates of the pre-contact Wiyot population have ranged from 1,000 to 3,300. The Wiyot constructed rectangular houses of vertical split redwood planks, with pitched roofs of the same material, where two or more families resided. They also made many items associated with fishing, including dugout redwood boats. (Exs. 1, p. 8.3-2; 200, p. 4.3-24.)

When the Americans came, in the 1850s, the Wiyot were occupying the only flat land adjacent to a good harbor between San Francisco and Humboldt Bay and they were rapidly displaced by white settlers, often with violence. By the early twentieth century, and continuing up through 1968, fewer than 200 persons identified as Wiyot could be counted in the Humboldt Bay area. (*Id.*)

[14] The name of the town is also transcribed as *Tuluwat*. Gunther Island is also known as Indian Island.

On May 4, 2006, the Applicant contacted the Native American Heritage Commission and requested that they search their files to determine if any sacred sites or traditional cultural properties are known for the project area. (Ex. 1, App. 8.3E.) An archaeological field survey was conducted by the HBRP Applicant that included coverage of Units 1 and 2, the construction laydown area, two temporary construction parking areas, a temporary construction access road, and a new water pipeline alignment. (Ex. 1, Figs. 2.3-1 and 8.3-1.)

The number of archaeological/ethnographic village sites near the project area indicates that the HBRP location would have a relatively high archaeological sensitivity if it were not for the considerable ground disturbance that has occurred in connection with the mid-twentieth-century development of the peninsula. However, the April 10, 2006, archaeological field survey of the HBPP/HBRP identified no archaeological resources (Ex. 1, p. 8.3-6), and the subsequent March 6, 2007 survey of 30 acres of wetland mitigation land and a worker access trail also identified no cultural resources. (Ex. 18, Attachment WSQ11-1.)

b. Historic Background

Europeans had explored the northern California coast by sea as early as the fifteenth century, with the first landing made at Patrick's Point in 1775 by Juan Francisco de Bodega to claim the country for the King of Spain. Captain Jonathan Winship and a large party of Aleut hunters on the ship, *Ocean*, made the first recorded entry into Humboldt Bay by sea in June, 1806. Afterward the bay was apparently forgotten until Gold Rush days. (Ex. 1, p. 8.3-3; Historic Record Co. 1915, chap. III; 200, p.4.3-6.)

In 1848, gold was found in the Trinity River, and the search began for a suitable port for further exploration of the northwest coast region. In 1849, an overland expedition rediscovered Humboldt Bay and in 1850 a shipboard expedition, sailing on the schooner *Laura Virginia*, rediscovered the entrance to the bay.

They established the first town on Humboldt Bay at Buhne Point, which they named for H. H. Buhne, the pilot of the *Laura Virginia* who had successfully maneuvered the ship over the sand bar at the mouth of the bay. The settlers named their new town Wernersville. The town, as platted, was approximately one mile wide and extended along 3 to 4 miles of shoreline, including the HBPP property. Only some 12 houses were ever built in the town, however, and the town site was abandoned by the late 1800s. A 1950 aerial photograph shows no remaining standing structures on the HBPP property. It is assumed that any archaeological remains of the town were destroyed when the HBPP was constructed in the late 1950s. (Ex. 1, p. 8.3-3; Forsyth, 2007; PAR 2003, p. 10; Historic Record Co. 1915, chap. III.)

In the early 1850s, two towns were established on Humboldt Bay to provide for the needs of the many miners who came to take gold from the region's rivers. Supply ships entered the bay over the treacherous sand bar and off-loaded goods and supplies at Eureka and Union (renamed Arcata in 1860). Miners soon gave way to lumbermen, and after only four years in existence, Eureka had seven lumber mills. Ships began carrying lumber out of the Humboldt Bay ports to California's growing coastal cities to the south. Some settlers took up cattle-raising on unforested land. Relations with the local Native Americans were uneasy due to the encroachments of the whites on resources long owned and used by the Wiyot. (Ex. 200, p. 4.3-7.)

Tensions lead to the raising of civilian "militias" in many settlements in northwest California and one of these, the "Humboldt Volunteers," attacked the Wiyot village of *Tolowot* in the early morning hours of February 26, 1860, during the Wiyot traditional annual World Renewal Ceremony. The settlers killed some 200 people, including women, children, and elders. The northern California "Indian Wars" of the early 1860s followed this event. Native Americans from all over the northwestern region were rounded up, imprisoned at Fort Humboldt, and

eventually removed to reservations. Fort Humboldt, located in Eureka, is recorded as California State Historical Landmark No. 154. (*Id.*)

Except for the commerce via shipping, the region remained unconnected with the wider world for a comparatively long time. The Transcontinental Railroad tied Sacramento to the rest of the nation in 1869, but it was not until 1915 that the Northwest Pacific Railroad (NWPRR), running from Sausalito to Arcata at the north end of Humboldt Bay, connected the northwest coast region with the rest of California and the country. In 1983, Southern Pacific, by then the owner of the NWPRR, shut down the rail line north of Willets. An independent company was formed and served the line north of Willets for several years as the Eureka Southern Railroad before succumbing to bankruptcy. The Humboldt Bay region finally lost its rail connection to San Francisco permanently in 1992 when an earthquake and landslide at Scotia Bluff crumpled and buried the tracks. The old NWPRR tracks run along the southeast side of the HBPP, immediately adjacent to the proposed HBRP site. A spur line, long disused, runs southwest from the old tracks onto the HBPP. It was built in 1954 to facilitate the construction of the HBPP. (Ex. 200, p. 4.3-8.)

Electric generation in Humboldt County was directly tied to the lumber industry. The machines in the mills were, at first, steam-powered, so installing a steam-powered generator to produce electricity for lighting the mill buildings was a natural progression. The fuel used by mill steam plants was the waste from timber processing. Mills made a profit by supplying neighboring residential and downtown business districts first with street lighting, then with interior lighting. After a number of small local electric companies competed and merged in the various cities of Humboldt County, the Western States Gas and Electric Company of Chicago bought and consolidated all of them in 1911. PG&E took over the Western States system in 1927. PG&E's single steam generator plant in Eureka and transmission from the Sacramento Valley satisfied regional demand until after World War II.

After the war, however, regional demand to power new and expanding lumber mills shot up, due to the postwar boom in the housing industry across the country. The power available for PG&E to distribute was insufficient. To rapidly bridge the gap, PG&E acquired the salvaged stern of the *DonBass III*, a World War II tanker, with an operational 4.8-MW generator and steam plant. The partial ship was towed to Eureka, beached, and put into service generating electricity in December, 1946. To meet long-term growth needs, PG&E replaced its two generating plants at Eureka with the existing Unit 1 and Unit 2, put in service by 1958. (Ex. 1, pp. 8.3-3 to 8.3-4; PAR 2003, p. 11-12; 200, p. 4.3-8.)

2. Cultural Resources

PG&E's building of the HBPP on Humboldt Bay was a location choice typical for merchant fleet steam-turbine electric generation plants in California in the 1950s and 1960s. Such plants were commonly located near load centers, near fuel supplies, and near a large water source such as an ocean bay or inlet in order to facilitate "once-through cooling." (Ex. 1, p. 8.3-10.) While the HBPP location was typical of 1950s steam-electric plants, it lacked a nearby fuel supply. PG&E had to import fuel to run the plant and relied initially on fuel oil shipped in on tankers to nearby Olson's Wharf and run through an underwater pipeline into on-site storage tanks. (Ex. 200, p. 4.3-9.)

In 1958, a natural gas pipeline was built from the Sacramento Valley west to serve the plant and the Humboldt Bay region. (Ex. 1, App. 8.3B, pp. 19-20.) Diesel fuel was used to back up its natural gas supply. Even today, the HBPP still relies on imported diesel in the winter, when the needs of higher-priority users may curtail the gas available to the power plant.

The unique geographic isolation of the HBPP, remote as it is from fuel supplies, necessitated an unusual design feature in Units 1 and 2. The entire Humboldt Bay area has relied on this plant and the plant's dependence, since 1958, on a

single natural gas line and single electrical transmission line from the state grid. Both of these lines are subject to failure due to natural disasters in this region. Thus it is critical that the plant is able to respond very quickly to supply failures. To compensate, Units 1 and 2 were fitted with oversized steam drums which permitted them to shift from minimum load to full load in a matter of seconds. (Ex. 1, p. 8.3-10.)

In the 1950s PG&E determined that Humboldt County presented a situation where the use of fossil fuels to produce electricity was so expensive, due to the cost of transporting the fuels, that a nuclear plant could be as economic as a fossil-fuel plant. Humboldt County also had a growing electricity market that PG&E was already taxed to supply with its existing fossil-fuel–fired facilities, Units 1 and 2, at the HBPP. A Unit 3 had been planned for HBPP all along, and PG&E decided to make Unit 3 nuclear-fueled. (Ex. 1, § 8.3, App. 8.3B, pp. 19-20.)

PG&E built its nuclear unit and the fossil-fueled units to run in tandem. In a move that made the proposed HBPP Unit 3 even more economic, PG&E's engineers greatly reduced the cost of constructing the plant by designing a new, unique, and innovative containment system to replace the expensive dome of previous nuclear power plant designs. Called "a pressure suppression system," the new design entailed building an airtight, underground, concrete and steel chamber that could be partially filled with water to suppress steam condensation and release in the event of an accident. This suppression system subsequently became the industry standard for boiling water reactors (BWRs). Another PG&E innovation placed Unit 3's suppression chamber 90 feet underground without any excavation, which further reduced the construction cost. This was achieved by forming the chamber on the ground surface and shaping its edges like vertical blades. Water jets were placed at the edges and aimed straight down at the soil. As the water jets softened the soil, the chamber slowly sank of its own weight. (*Id.*, pp. 20-22.)

Licensed to produce 52 MW, Unit 3 began producing commercial power on August 1, 1963. The plant, dedicated on September 23, 1963, was described as the first nuclear plant "constructed and privately subsidized by one company based on electrical demand and competitive economics as a profit-making venture, rather than [on] research and development of a new technology." (Ex. 1, App. 8.3B, p. 48.) Its reliability, with a 92 percent availability rating, caused the Atomic Energy Commission to upgrade its license to 70 MW in 1965. (*Id.*, p. 30.)

Later the NRC responded to the several accidents at different nuclear facilities in the country and to the growing public concern, with more stringent regulations for new nuclear plants as well as with requirements for significant and costly upgrades at existing plants, including Unit 3. (*Id.*, pp. 31-32.) In addition, PG&E had learned that the Little Salmon Fault, over which Unit 3 at HBPP had been built, was an active fault. This necessitated an upgrade of Unit 3 for greater seismic safety. However, while the plant was shut down for refueling and seismic retrofitting in 1976, the NRC told PG&E it would not support restarting its nuclear plant until the seismic issues were resolved. In July 1983, based on its financial analysis of various options, PG&E decided to decommission Unit 3. (*Id.*, pp. 32-33.)

For decommissioning, PG&E chose the SAFSTOR process, which entails maintaining, and monitoring a nuclear reactor while its radioactivity decays, then dismantling it. Unit 3 entered SAFSTOR status in 1988 and can remain in this status until 2015, when the U.S. Department of Energy would assume responsibility for the disposition of the fuel. The Unit 3 250-foot-tall concrete vent stack was removed in 1998 to eliminate the earthquake danger it posed and to dispose of those parts of it that were contaminated by radioactivity. (*Id.*, p. 33.)

Unit 3 achieved another nuclear industry "first" when all of its spent fuel was removed from the reactor and stored in the adjacent spent fuel pool. Thus, Unit 3

was the first commercial nuclear plant to be decommissioned while keeping spent fuel on site. PG&E has recently removed Unit 3 spent fuel to the newly completed Independent Spent Fuel Storage Installation (ISFSI) (*Id.*, p. 34), beginning in the spring of 2008.

3. Potential Impacts and Mitigation

a. Staff Position

Based on the foregoing history of the HBPP site and its review of applicable criteria, Staff has identified as significant the entire site as a historical resource, the Humboldt Bay Power Plant Historic District (HBPPHD). Under California law, a historic district is a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. In Staff's view, the HBPPHD consists of 31 structures, including two currently operating fossil-fueled units and one retired nuclear-fueled unit, all linked by common plan, dedicated function, and experimental development, representing post-World War II power generation technology in California. Staff sees the HBPPHD as historically significant because of its role in the economic history of the region and state, and its role in the national history of nuclear power development. (Ex. 200, pp. 4.3-1, 4.3-13 to 4.3-21, 4.3-28.)

Having identified the HBPPHD, Staff's position is that the construction of the proposed HBRP would result in the immediate demolition of two structures associated with the historic district in order to accommodate building the HBRP. The structures are the railroad spur and a storage building.

Staff identified this immediate demolition of the structures as a significant, direct adverse impact on the HBPPHD, pursuant to the California Environmental Quality Act (CEQA). In addition to these direct impacts, Staff believes that the

eventual operation of the HBRP would render most of the other structures of the HBPPHD obsolete, leading, foreseeably, to their demolition, as well. This includes the existing Units 1 and 2. Staff has identified this eventual demolition as a significant, indirect adverse impact on the HBPPHD, under CEQA,. (Ex. 200 pp. 4.3-13 to 4.3-22.)

Staff has also concluded that the HBRP would have no impact on known significant archaeological or ethnographic resources. To mitigate potentially significant impacts to as-yet-undiscovered significant archaeological resources, Staff has recommended, and Applicant has agreed to, the adoption and implementation of Conditions of Certification **CUL-1** through **CUL-7**.

b. Applicant's Position

PG&E fundamentally disagrees with the Staff position. Applicant determined that the HBPP site is not eligible for the National Register of Historic Places as an historic district based on historical context, various building dates and construction phases, and its review of the National Historic Places guidelines for establishing the significance of a historic district. (Ex. 7, p. 6.) Furthermore, in PG&E's view, co-locating a nuclear plant in conjunction with an existing thermal plant to take advantage of the cooling water infrastructure and other economies of scale should not be considered of historic importance. (Ex. 59, p. 5.) Accordingly, Applicant's position is that the demolition of Units 1 and 2 would not be a significant indirect impact of constructing the HBRP. Rather, Applicant asserts that the eventual demolition of the two units is properly seen as a foreseeable future project that should be considered as a cumulative effect of the HBRP, and not an indirect impact. (Ex. 59, p. 5.) Prior to the evidentiary hearing, Applicant filed a motion asking the Committee to determine that the demolition of Units 1 and 2 was most appropriately reviewed by the Commission as a cumulative impact of the HBRP. (PG&E's *Motion in Limine to Strike CEC Staff Testimony,* filed 6/11/08.)

Applicant does agree with Staff that demolition of Unit 3, although not related to construction of the HBRP, is significant and is being addressed by requirements of the Nuclear Regulatory Commission. PG&E also notes that demolition of Units 1 and 2 will not be possible without first obtaining a Coastal Development Permit (CDP) from the California Coastal Commission (CCC). The CCC's CEQA review as part of the CDP process will include an evaluation of historic resources, including Units 1 and 2. (Ex. 53, p. 2.)

c. Mitigation

Staff's view of the need for a historic district and that demolition of Units 1 and 2 would be a significant indirect impact of the HBRP, led it to propose several mitigation measures including a requirement for a Historic American Engineering Record (HAER) document. (6/17/08 RT 83.) However, through negotiating efforts just prior to the evidentiary hearing, both parties eventually agreed to a plan on how to develop a HAER on a time-line that is acceptable to the Applicant and that still identifies and mitigates all potentially significant impacts of demolishing Units 1 and 2. (*Id.*) At the evidentiary hearing the parties introduced their agreed-upon language and Applicant withdrew its pending motion. (Ex. 76; 6/17/08 RT 83.) The language is reflected in Condition of Certification **CUL-10.** We find that this condition of certification will ensure adequate identification and mitigation of all potentially significant impacts related to demolishing Units 1 and 2.

Other agree-upon Conditions of Certification will protect archaeological resources encountered during construction and mitigate any significant impacts from the project on newly found archaeological resources which are assessed as significant. To accomplish this, the conditions provide for cultural resources awareness training for construction workers, a cultural resources survey, the archaeological and Native American monitoring of ground-disturbing activities,

the recovery of significant data from discovered archaeological deposits, the writing of a technical archaeological report on monitoring activities and results, and for the curation of recovered artifacts and other data. Conditions of Certification **CUL-1** through **CUL-10** will ensure that any impacts to known and unknown cultural resources located in the areas impacted by the HBRP are mitigated to a less-than-significant level. (Ex. 200, p. 4.3-43; 6/17/08 RT 83.)

FINDINGS AND CONCLUSIONS

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

1. Cultural resources exist in the general HBRP project area.
2. Construction activities associated with the HBRP project and related facilities present a potential for adverse impacts to cultural resources.
3. The potential for impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.
4. The evidence of record adequately describes the HBRP's environmental setting as it pertains to cultural resources as well as the potentially significant environmental impacts which the HBRP may have on those resources
5. The evidentiary record contains an adequate presentation of feasible mitigation measures which will eliminate or reduce any encountered significant impacts to less than significant level.
6. The project owner will obtain the services of a qualified Cultural Resources Specialist to manage monitoring and observation of ground disturbance activities in areas where ground disturbance will occur.
7. The project owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered.
8. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative adverse impacts to archeological , ethnic, or cultural resources resulting from project-related activities will be insignificant.
9. The project owner will provide Worker Environmental Awareness Program (WEAP) training to all new workers.

10. The project owner will develop a historic resources mitigation plan for the entire Humboldt Bay Power Plant property, including Units 1, 2, and 3 and all appurtenances.

The Commission therefore concludes that with implementation of the Conditions of Certification below, the HBRP will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision and will impose no significant impacts on the environment.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance,[15] the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternate CRSs, if alternates are needed. The CRS shall manage all monitoring, mitigation, duration and reporting activities required in accordance with the Conditions of Certification (Conditions). The CRS may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to CPM approval of the CRS and alternate CRSs, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for non-compliance on this or other projects.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in the Code of Federal Regulations, 36 CFR Part 61. In addition, the CRS shall have the following qualifications:

[15] "Ground disturbance" includes "preconstruction site mobilization"; "construction ground disturbance"; and "construction grading, boring and trenching," as defined in the General Conditions for this project.

1. the CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field;
2. at least three years of archaeological or historic, as appropriate (per nature of predominate cultural resources on the project site), resource mitigation and field experience in California; and
3. at least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to implement effectively the Conditions of Certification.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historical archaeology or a related field and one year experience monitoring in California; or
2. an AS or AA degree in anthropology, archaeology, historical archaeology or a related field, and four years experience monitoring in California; or
3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialists, e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification: At least 45 days prior to the start of ground disturbance, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the

project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. 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 shall remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resource monitoring required by this Condition. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs, at least five days prior to the CRMs beginning on-site duties.

At least 10 days prior to any specialists beginning tasks, the resume(s) of the technical specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources Conditions.

CUL-2 Prior to the start of ground disturbance, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, and confidential cultural resources reports for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1” = 200’) for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project will proceed in phases, maps and drawings not previously provided shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: At least 40 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, and confidential cultural resource documents to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

If there are changes to any project-related footprint, revised maps and drawings shall be provided at least 15 days prior to start of ground disturbance for those changes.

If project construction is phased, if not previously provided, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

On a weekly basis during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

Within five days of identifying changes, the project owner shall provide written notice of any changes to the scheduling of the construction phase.

CUL-3 Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall be provided in the Archaeological Resource Management Report (ARMR) format, and, per ARMR guidelines, the author's name shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. A proposed general research design that includes a discussion of archaeological research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. A prescriptive treatment plan may be included in the

CRMMP for limited resource types. A refined research design shall be prepared for any resource where data recovery is required.

2. The following statement included in the Introduction: “Any discussion, summary, or paraphrasing of the Conditions in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The Conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the Conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A.”

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground disturbance, construction, and post-construction analysis phases of the project.

4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.

5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.

6. A description of all impact-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 description shall address how these measures will be implemented prior to the start of construction and how long they would be needed to protect the resources from project-related effects.

7. A statement that all cultural resources encountered shall be recorded on a DPR form 523 and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, and data recovery) shall be curated in accordance with the California State Historical Resources Commission’s *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum.

8. A statement that the project owner will pay all curation fees for artifacts and related documentation recovered during cultural

resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.

9. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during construction and cannot be treated prescriptively.

10. A description of the contents and format of the Cultural Resource Report (CRR), which shall be prepared according to ARMR guidelines.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the subject CRMMP to the CPM for review and approval.

At least 30 days prior to the start of ground disturbance, a letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The CRR shall report on all field activities, including any new surveys of borrow sites, and shall include dates, times and locations, results, samplings, and analyses. All survey reports, Department of Parks and Recreation (DPR) 523 forms, and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR.

If the project owner requests a suspension of construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification: Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt

letters from the CHRIS or other verification of receipt shall be included in an appendix.

Within 90 days after completion of ground disturbance (including landscaping), the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, to accept cultural materials, if any, from this project. Any agreements concerning curation shall be retained and available for audit for the life of the project.

Within 10 days after CPM approval, the project owner shall provide documentation to the CPM confirming that copies of the CRR have been provided to the SHPO, the CHRIS, and the curating institution, if archaeological materials were collected.

Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

CUL-5 Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site and on the linear facilities. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt construction in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
4. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. An acknowledgement form signed by each worker indicating that they have received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification:

At least 30 days prior to the beginning of pre-construction site mobilization, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval, and the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

On a monthly basis, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers at the project site and on the linear facilities who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor full time all ground disturbance of native soils at the project site, along linear facilities and roads, and at parking and other ancillary areas, including wetlands mitigation areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all native-soil–disturbing activities on the construction site or along the linear facility routes for as long as the activities are ongoing. Full-time archaeological monitoring shall require at least one monitor per excavation area where machines are actively disturbing native soils. If an excavation area is too large for one monitor to effectively observe the native-soil disturbance, one or more additional monitors shall be retained to observe the area.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. Copies of

the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The CRS or alternate CRS shall report daily to the CPM on the status of cultural resources-related activities at the construction site, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

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.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

The project owner shall obtain a Native American monitor to monitor ground disturbance in any areas where Native American artifacts are discovered in native soils. Contact lists of concerned Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

During and after construction, the project owner shall fulfill the requests received from Native American tribes or groups to be notified if Native American artifacts are found.

Verification: At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log. While monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS.

Daily, as long as no cultural resources are found, the CRS shall provide a statement that “no cultural resources over 50 years of age were discovered” to the CPM as an e-mail or in some other form acceptable to the CPM. If the CRS concludes that daily reporting is no longer necessary, a letter or e-mail providing a detailed justification for the decision to reduce or end daily reporting shall be provided to the CPM for review and approval at least 24 hours prior to reducing or ending daily reporting.

At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.

No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairperson of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records and copies of any comments or information provided by the Native Americans in response.

CUL-7 The project owner shall grant authority to halt construction to the CRS, alternate CRS, and the CRMs in the event of a cultural resources discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources over 50 years of age or, if younger, considered exceptionally significant are found, or impacts to such resources can be anticipated, construction shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting as provided in CUL-6 shall continue during all ground-disturbing activities wherever project construction is not halted. The halting or redirection of construction shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning. Notification shall include a description of the discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of eligibility, and recommendations for mitigation of any cultural resources discoveries, whether or not a determination of significance has been made.

2. The CRS has completed field notes, measurements, and photography for a DPR 523 primary form. The "Description" entry of the DPR 523 form shall include a recommendation on the significance of the find. The project owner shall submit completed forms to the CPM.
3. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the 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.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction activities in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

Completed draft DPR 523 "Primary" forms, including locational data in the form of Universal Transverse Mercator (UTM) readings obtained using GPS units, for resources newly discovered during construction shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

CUL-8 Prior to the demolition of the rail spur associated with Unit 3, and the storage building (#7069) associated with Units 1 and 2; the project owner shall obtain the services of an architectural historian. The project owner shall provide the CPM with the name and resume of the architectural historian. No ground disturbance shall occur prior to CPM approval of the architectural historian, unless specifically approved by the CPM.

The resume for the architectural historian shall include names and telephone numbers of contacts familiar with the architectural historian's work and all information needed to demonstrate that the architectural historian has the following qualifications:

1. meets the Secretary of Interior's Professional Standards for architectural history;
2. has at least three years' experience in recording twentieth-century industrial structures; and

3. has completed at least one recordation project within the past five years involving coordination with the National Park Service's Heritage Documentation Program (HDP).

Verification: At least 45 days prior to demolition of the storage building (#7069) and the on-site railroad spur, the project owner shall submit the name and resume of the selected architectural historian to the CPM for review and approval.

At least 35 days prior to the demolition of the storage building (#7069) and the on-site railroad spur, the project owner shall confirm in writing to the CPM that the approved architectural historian is available for onsite work and provide a date by which the architectural historian will undertake the HAER documentation of the three structures.

CUL-9 Prior to the demolition of the rail spur associated with Unit 3, and the storage building (#7069) associated with Units 1 and 2, the project owner shall ensure that the approved architectural historian prepares documentation of these structures to the standards of the Historic American Engineering Record (HAER). The project owner shall ensure that the architectural historian consults with the HABS/HAER Coordinator in the Pacific West Regional Office of the HDP, in Oakland, and complies with the Coordinator's guidance on the extent and content of documentation appropriate for these structures, as contributing elements of a probable National Register of Historic Places-eligible district and as a significant historical resource under CEQA, and on the format and materials to be used in the documentation.

To provide for the contingency that the HDP may require additional information after reviewing the architectural historian's draft documentation, the project owner shall ensure that the architectural historian over-records (for example, "brackets" all photographs; takes duplicate photogrammetric readings and measurements, if required by the HDP; makes copies daily of all field notes and logs and retains them in a separate location), in the field, those physical aspects (e.g., measurements, photographs, and photogrammetry) of the storage building (#7069), transmission tower, and the on-site railroad spur that will not be accessible after these structures have been demolished.

No demolition of the rail spur or storage building (#7069) shall occur prior to the completion by the architectural historian of the over-recording (defined above), in the field, of the three structures, and the submission to and approval by the CPM of the draft HAER documentation, unless specifically allowed by the CPM.

The project owner may make available to the architectural historian original architectural drawings of Units 1 and 2 and associated

structures, and photographs of their construction held in its files, so these can be submitted as part of the HAER documentation instead of new measured drawings.

Verification: At least 20 days prior to demolition of the storage building (#7069) and the on-site railroad spur, the project owner shall submit to the CPM a letter or memorandum from the architectural historian detailing the scope of the HDP-recommended documentation of the three structures.

At least 15 days prior to demolition of the storage building (#7069) and the on-site railroad spur, the project owner shall provide a copy of the draft HAER documentation of these structures to the CPM for review and approval.

The owner shall retain copies of the CPM-approved HAER documentation of the rail spur and transmission line tower associated with Unit 3, and the storage building (#7069) associated with Units 1 and 2. In the event that the rest of the HBPPHD structures are also documented to HAER standards, the owner shall include the HAER documentation of the rail spur and transmission line tower associated with Unit 3, and the storage building (#7069) associated with Units 1 and 2, in the HBPPHD HAER documentation package and carry out the disposition that is provided in **CUL-10**.

CUL-10 The project owner shall develop a historic resources mitigation plan for the entire Humboldt Bay Power Plant property, including Units 1, 2, and 3 and all appurtenances. The plan shall be developed under the direction of a person meeting the Secretary of the Interior's professional qualifications for historian or architectural historian. The plan shall include the following elements:

A. A thorough historic background statement that describes in detail the development of the Humboldt Bay Power Plant (Units 1, 2, and 3 and all appurtenances) in the context of Humboldt County and the Humboldt Load Pocket, describes the history of power generation technology in the area and identifies the place of the Humboldt Bay Power Plant in local, regional, and national history.

B. A fully developed historic themes and contexts statement that identifies the key historic themes in association with which the Humboldt Bay Power Plant gains significance and the scope (topical and geographical) of significance at the national, regional, and local levels.

C. A fully developed mitigation plan that identifies, for the entire property and under the assumption that the entire property will be demolished, the key actions proposed to mitigate each significant aspect of the property, considering Units 1, 2, and 3 and all appurtenances on the PG&E property.

Mitigation actions can and shall include photographic recording to the standards of the Historic American Engineering Record (HAER), archiving of engineering drawings or other engineering documents, and archiving of historical photographs and documents relating to the development, construction, and operation of the facility. The plan shall address elements of the property's significance and the preservation of mitigation documents and other materials on a national, state, and local level.

The mitigation plan shall include the elements to be documented under Conditions **CUL-8** and **CUL-9**, notwithstanding that the mitigation of properties identified under **CUL-8** and **CUL-9** may be completed before the mitigation plan is finalized and reviewed by all parties.

Verification: The project owner shall submit the Historic Property Mitigation Plan to the CPM for review and approval and to the Heritage Documentation Program (HDP) of the National Park Service, California Coastal Commission (CCC), Humboldt County Community Development Department, and California Office of Historic Preservation for review and comment. The owner shall allow up to 180 days for the National Park Service and up to 90 days for the other entities to comment on the draft plan and shall consider their comments in revising the plan. In the event that the comments are in conflict or are inconsistent, comments and direction of the National Park Service shall take precedence. The project owner shall finalize the plan and provide copies of the final plan to the HDP, CCC, Humboldt County Community Development Services Department, Humboldt State University Library Humboldt Room, Humboldt County Library, COHP, and Nuclear Regulatory Commission 180 days before demolition of Units 1, 2, and 3 will begin. The plan shall be implemented prior to demolition.

CUL-11 If fill soils must be acquired from a non-commercial borrow site or disposed of to a non-commercial disposal site, the CRS shall survey the borrow and/or disposal site/s for cultural resources and record on DPR 523 forms any that are identified, unless less-than-five-year-old cultural resources surveys of these sites are submitted to and approved by the CPM. When the survey is completed, the CRS shall convey the results and recommendations for further action to the project owner and the CPM, who will determine what, if any, further action is required. If the CPM determines that significant archaeological resources that cannot be avoided are present at the borrow site, **CUL-6** and **CUL-7** shall apply. The CRS shall report on the methods and results of these surveys in the CRR.

Verification: As soon as it is determined that a non-commercial borrow site and/or disposal site will be used, the project owner shall notify the CRS and CPM

and provide documentation of previous archaeological survey, if any, dating within the past 5 years, for CPM approval.

In the absence of documentation of recent archaeological survey, at least 30 days prior to any soil borrow or disposal activities on the non-commercial borrow and/or disposal sites, the CRS shall survey the site/s for archaeological resources. The CRS shall notify the project owner and the CPM of the results of the cultural resources survey, with recommendations, if any, for further action.

D. GEOLOGY AND PALEONTOLOGY

This section reviews the project's potential impacts on significant geological and paleontological resources. It evaluates whether project-related activities could result in exposure to geological hazards, as well as whether the facility can be designed and constructed to avoid any such hazard which could affect its proper functioning. These include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches. The analysis of record also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present, and whether the project will impact geologic or mineralogical resources. The parties did not dispute any matters in this discipline. (6/17/08 RT 43-44; Exs. 1, § 8.4 and 8.8; 16; 18; 41; 45; 61; 75; 200, § 5.2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Geologic Hazards

The HBRP is within the Coast Ranges physiographic/tectonic province. The geology of the region around the site is very complex, reflecting geologically rapid processes driven by recent (i.e., within the last 10,000 years) tectonics and rapid erosion. (Ex. 1, p. 8.4-1.) This is a highly active seismic region. More than 120 earthquakes greater than magnitude 5 have been recorded within 100 miles of the site, including 10 that have exceeded magnitude 7. (Ex. 1, p. 8.4-2.)

The HBRP site lies within the Eel River Basin, which is at the north end of the Coast Ranges geomorphic province. This segment of the northern coast of California is characterized by young and very active tectonism. The Mendocino Triple Junction (MTJ), which represents the zone of collision of the northward-moving Pacific Oceanic Plate, the eastward-moving Gorda Oceanic Plate, and the stationary North American Continental Plate, is located approximately 30 to

35 miles south to southwest of Humboldt Bay. The Coast Ranges geomorphic province south of the MTJ is generally characterized by north-northwest trending right-lateral strike-slip faults similar to the San Andreas Fault Zone. (Ex. 200, p. 5.2-4.)

Nearly all of the major faults and fault zones in the HBRP regional area are northwest to north-northwest striking reverse faults that dip to the northeast. The nearest is the Little Salmon Fault Zone, part of which passes through the project area. The surface trace of the Little Salmon Fault is approximately 1.4 miles southwest of the HBRP site and has been projected to be between 4,000 to 5,000 feet below the site. The Little Salmon Fault is a designated Alquist-Priolo Special Studies Zone (SSZ), but the northern boundary of the zone is about one mile south of the HBRP. Other fault zones in the region include the Mad River Fault Zone, which is located 11 miles to the northeast of the HBRP site; the Goose Lake Fault Zone, located 9.5 miles to the southwest; and the Russ Fault Zone, located 15.5 miles to the southwest. (Ex. 200, pp. 5.2-4 to 5.2-5.)

Published information indicates that the closest active fault is the Little Salmon Fault. (Ex. 200, p. 5-8.) Fault traces thought to be part of the Little Salmon Fault Zone are present at the western and eastern edges of HBRP site. (Ex. 200, p. 5.2-5.) The evidence further indicates that splays of the Little Salmon Fault (i.e., the Buhne Point and Discharge Coastal Faults) are also active. While the actual locations of these latter faults are somewhat uncertain, the faults have been included in the evidentiary analysis of record, however, no known active faults cross the boundary of new construction on the HBRP site. (Ex. 200, p. 5.2-9.)

The HBRP lies on a flat to gently sloping coastal plain that varies from 8 to 12 feet above sea level. The surface material at the site is 2 to 6 feet of silty clay to sandy, clayey gravel fill. This fill overlies Holocene age bay deposits, consisting of organic rich clays, silts, and occasional clayey sands that are 2 to 20 feet thick

overall. These soils are compressible and range from soft or loose to stiff or medium dense. (Ex. 200, p. 5.2-5.)

The evidence of record establishes that there is a low potential that geologic hazards such as dynamic compaction, hydrocompaction, subsidence, or landslides will impact the power plant during its practical design life. (Ex. 200, pp. 5.2-8 to 5.2-11.) However, groundshaking and rupture, localized liquefaction, and tsunami inundation resulting from an offshore earthquake pose potential problems. (Exs. 1, p. 8.4-14; 200, p. 5.2-7.)

These potential hazards are mitigated to a less than significant level through proper design as required in Conditions of Certification **GEN-1**, **GEN-5** and **CIVIL-1** in the **Facility Design** section of this Decision, as well as in **GEO-1**, below. (Ex. 200, p. 5.2-7.) For example, while there is the potential for high ground acceleration during a seismic event in the area, occupied buildings and other important facility structures will be designed to accommodate vertical displacements of about 12 inches and lateral offsets of about 4 inches. This can be accomplished by use of post-tensioned floor slabs, increased concrete reinforcement, and stronger connectors. (Ex. 200, p. 5.2-15.) This design criterion is sufficient to withstand the estimated peak horizontal bedrock ground acceleration of 1.081g. The evidence shows that this design level complies with the Seismic Zone 4 standards of the 2007 California Building Code (CBC) and is sufficient to minimize the exposure of personnel to risks associated with large seismic events. (Exs. 1, p. 8.4-20; 200, p. 5.2-9.)

The project is located on Holocence soil that is potentially liquefiable and subject to lateral spreading and settlement therefore the foundations will be designed to withstand potential movement by incorporating the recommendations of a geotechnical engineer. (Ex. 1, p. 8.4-20.) Similarly, although the HBRP is in a known tsunami inundation zone and potentially subject to flooding, the applicable design criteria (such as anchoring all structures to prevent flotation, collapse, or

lateral movement) contained in the Conditions of Certification require it to be constructed in a manner which minimizes the adverse effects of inundation and potentially high wave forces. (Exs. 1, pp. 8.4-20 to 21; 200, pp. 5.2-11 to 5.2-12.) The evidence establishes that the measures which will be incorporated into the HBRP's design will ensure that the project does not increase the risk of tsunami damage to persons or property off-site. (Ex. 1, p. 8.4-21.)

2. Mineralogic and Paleontologic Impacts

The evidence indicates that there are no mineralogical resources such as sand, gravel, and precious or base metals within two miles of the project site. (Exs. 1, p. 8.4-21; 200, p. 5.2-12.)

The HBRP's footprint location will be on 2 to 6 feet of fill underlain by Holocene bay deposits and Pleistocene marine and non-marine sediments. Construction activities that excavate beneath this fill and Holocene bay deposits, at depths of 9 feet at the south and west ends to 22 feet at the east end, will encounter the Pleistocene Hookton Formation. This formation is considered to have high paleontological sensitivity due the historic occurrence of vertebrate fossils. (Ex. 200, pp. 5.2-12 to 5.12-13.)

While no fossil remains were discovered in Applicant's recent paleontological survey, significant resources have been documented in Pleistocene sediments within 1.5 miles of the project site. Project development activities such as grading, excavating, and trenching may lead to the discovery of more resources. (Ex. 200, p. 5.2-13.) The evidence establishes that any potential impacts to these resources may be satisfactorily mitigated through measures such as the presence of an on-site Paleontologic Resource Specialist to monitor activities and the implementation of a Paleontologic Monitoring and Mitigation Plan. These mitigation measures are incorporated in Conditions of Certification **PAL-1** through **PAL-7**, below.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, we make the following findings and reach the following conclusions:

1. The project is located in Seismic Zone 4.

2. Final project design will comply with the requirements for Seismic Zone 4 established in the 2007 California Building Code and will include measures to mitigate potential risk from ground shaking, ground rupture, liquefaction, and flooding associated with strong seismic shaking.

3. There is the potential for flooding and inundation due to tsunamis at the site.

4. The HBRP project will be designed and constructed to minimize the risk from potential flooding and inundation impacts.

5. There is no evidence of existing or potential geological or mineralogical resources at the project site or along the linear alignments.

6. Paleontological resources have been indentified within 1.5 miles of the site and there is a probability of encountering paleontologic resources during project construction.

7. The project owner will implement several mitigation measures to avoid impacts to paleontological resources, including preparing a Paleontological Monitoring and Mitigation Plan and having a Paleontologic Resource Specialist on-site.

8. Compliance with the Conditions of Certification specified below will ensure the HBRP conforms with all applicable laws, ordinances, regulations, and standards, including the Coastal Act, related to geological, mineralogical, and paleontological resources as indentified in **Appendix A** of this Decision

The Commission therefore concludes that the implementation of the Conditions of Certification in the **Facility Design** section of this Decision and the Conditions listed below ensure that project activities will not cause adverse impacts to geological, mineralogical, or paleontological resources. We further conclude that the project will be designed and constructed in a manner sufficient to withstand reasonably foreseeable geologic hazards.

CONDITIONS OF CERTIFICATION

GEO-1 All occupied structures (Control Room/Office/Workshop Buildings) shall be designed to withstand a reasonable level of vertical and horizontal fault offset directly beneath the building. The design ground rupture shall be for a single event based on geological estimates of total offset along the Canal Discharge fault and probable recurrence intervals. In accordance with the current California Building Code (CBC, 2007), the design requires only that occupants can be safely evacuated but not necessarily that the structure remain serviceable.

Verification: At least 30 days prior to start of grading, the project owner shall submit to the CPM a letter from the project structural engineer describing the offset resistant design and verifying that the design intent is to resist the prescribed magnitudes of horizontal and vertical movement.

PAL-1 The project owner shall provide the Compliance Project Manager (CPM) with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall submit to the CPM, to keep on file, resumes of the qualified Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified Paleontological Resource Monitors to monitor as he or she deems necessary on the project. Paleontologic Resource Monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.

Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines are acceptable for this purpose. The plan drawings shall show the location, depth, and extent of all ground disturbances and can be at a scale of 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Prior to work commencing on affected

phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur before any ground disturbance begins. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the

project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;

4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for the monitoring and sampling;
6. A discussion of the procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum which meets the Society of Vertebrate Paleontology standards and requirements for the curation of paleontological resources;
9. Identification of the institution that has agreed to receive any data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological Conditions of Certification.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance and for the duration of construction, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for all recently employed project managers, construction supervisors, and workers who are involved with or operate ground disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. A CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern. No ground

disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

The WEAP shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP Certification of Completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures the workers are to follow.

At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for review and approval. In the Monthly Compliance Report (MCR) the project owner shall provide copies of the WEAP Certification of Completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading, excavation, trenching, and augering in areas where potentially fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. Unless determined otherwise in the PRMMP, monitoring is not required for on-site excavations 6 feet deep or less and for linear-related excavations,

outside the power plant site, that do not extend more than 3 feet below existing grade. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring different from the accepted schedule presented in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and included in the Monthly Compliance Report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.
2. The project owner shall ensure that the PRM(s) keeps a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS immediately (i.e., within 24 hours) notifies the CPM of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours (or Monday morning in the case of a weekend) when construction has been halted due to a paleontological find.

The project owner shall ensure that the PRS prepares a summary of the monitoring and other paleontological activities, and that the summary is placed in the Monthly Compliance Reports (MCR). The summary shall include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, etc. A section of the report shall include the geologic units or subunits encountered descriptions of sampling within each unit, and a list of identified fossils. A final section of the report shall address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance and any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the

month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction.

Verification: The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resources Report (see **PAL-7**). The project owner shall be responsible to pay any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and submitted to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

Verification: Within 90 days after completion of ground disturbing activities, including landscaping, the project owner shall submit the Paleontological Resources Report, under confidential cover, to the CPM.

Certification of Completion
Worker Environmental Awareness Program
Humboldt Bay Repowering Project (06-AFC-7)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on-site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title / Company	Signature
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25.			

Cultural Trainer:_____Signature:_____Date:___/___/___

PaleoTrainer:_____Signature:_____Date:___/___/___

Biological Trainer:_____Signature: _____Date:___/___/___

VII. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise, Socioeconomics, including Environmental Justice, Traffic and Transportation, and Visual Resources.**

A. LAND USE

The land use analysis focuses on two main issues: (1) whether the project is consistent with local land use plans, ordinances, and policies; and (2) whether the project is compatible with existing and planned uses. During our process we must determine whether, in general, a power plant and its related facilities could be incompatible with surrounding land uses and whether the project may cause unmitigated impacts in the areas of noise, dust, public health, traffic, and visual resources. These individual resource areas are discussed in detail in separate sections of this document. A power plant may also create a significant land use impact if it converts prime or unique farmland or farmland of statewide importance to non-agricultural uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. The Site

The 5.4-acre HBRP site is within the 143-acre parcel (APN 305-131-34) owned by PG&E and known as the Humboldt Bay Power Plant (HBPP) site, in the unincorporated area of Humboldt County. The site is three miles south of Eureka, on Buhne Point along Humboldt Bay. The existing Humboldt Bay Power Plant is situated west of the HBRP site. The proposed project site is zoned coastal dependant industrial (MC) with combining district designations for coastal

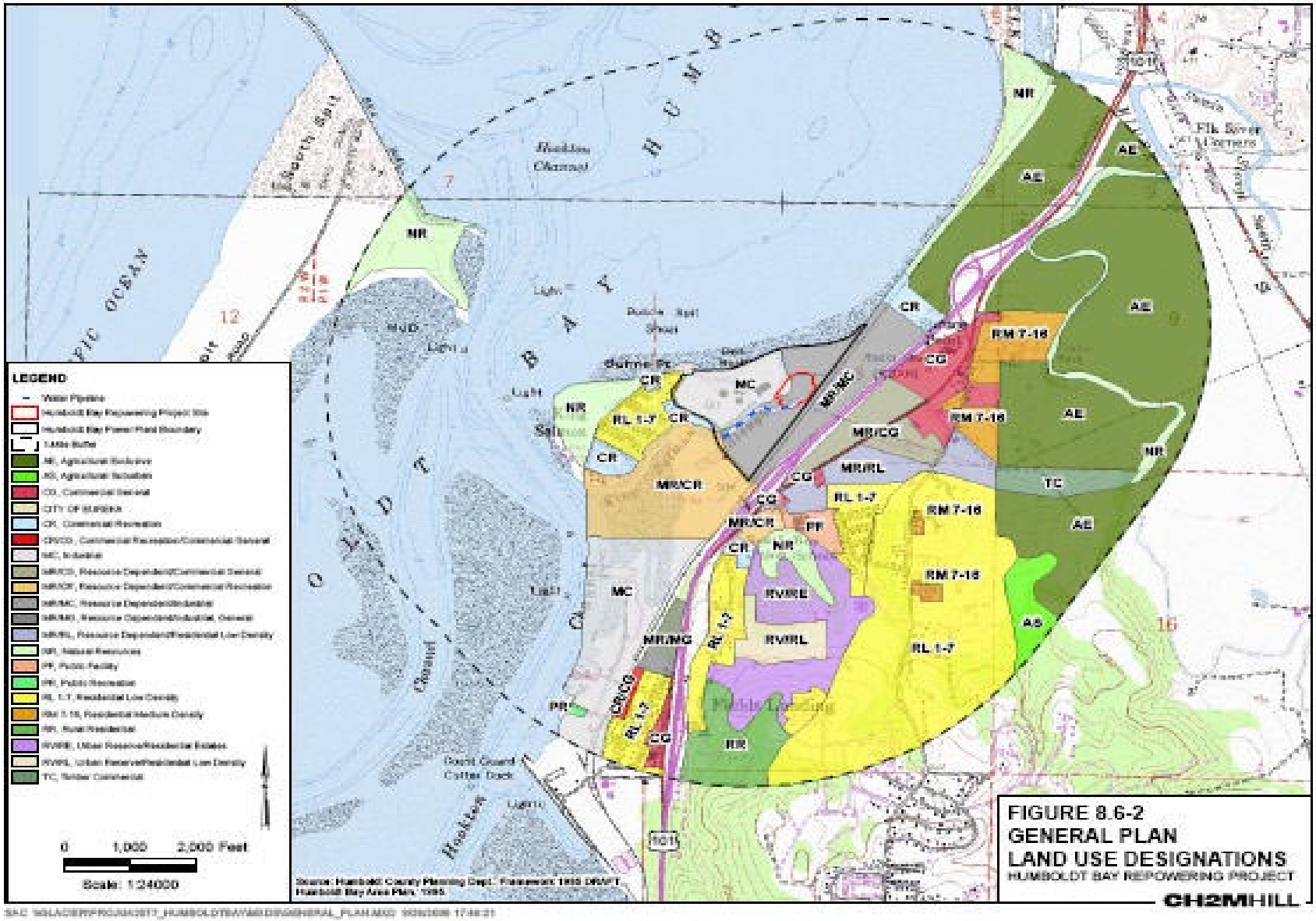
resource dependant (C), flood hazard (F), and coastal wetland (W). The Humboldt County land use designations for the site are MR/MC (Resource Dependent Industrial/Coastal Dependent). Land Use Figure 2 shows the zoning designations of the HBRP site and surrounding locations.

There are several small residential communities within five miles of the HBRP site, including King Salmon, Humboldt Hill, and Fields Landing. **Land Use Figure 1** shows the project location and surrounding land uses.

Land uses and natural features on the project parcel include industrial land, power plant cooling water intake and discharge canals, wetlands, and Buhne Slough. The property is bounded on the north by Humboldt Bay, on the west by the King Salmon community, on the east by Northwestern Pacific Railroad tracks, and on the south by King Salmon Avenue. Land uses surrounding the site include Highway 101, some rural residential, commercial development, wetland areas, the Humboldt Hill residential development, the community of Fields Landing, Humboldt Bay, a sand spit (South Spit) and the Pacific Ocean. An existing public trail that is part of the California Coastal Trail system (California Coastal Trail 2006) is on the north side of the Humboldt Bay Power Plant site along Humboldt Bay. (Exs. 1, p. 8.6-1; 200, p. 4.5-2.)

Buhne Slough is a local fishing area. The Elk River Wildlife Area is approximately 2,000 feet to the northeast of the HBRP site. Several recreational parks are in the City of Eureka, which is north of the site and located outside the one-mile radius. Within a one-mile radius of the HBRP site are South Bay Elementary School and a senior home, Sun Bridge Seaview Care Center, and two churches, the Redwood Christian Center and the Calvary Community Church. (*Id.*)

LAND USE FIGURE 1 – GENERAL PLAN LAND USE DESIGNATIONS



Source: Ex. 1

2. Potential Impacts

Significance criteria used in this document are based on the CEQA Guidelines and performance standards or thresholds identified by Applicant and Energy Commission staff, based on applicable LORS and utilized by other governmental regulatory agencies. An impact may be considered significant if the project results in:

- Conversion of Farmland;
- Physical disruption or division of an established community;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction over the project. This includes, but is not limited to, a General Plan, community or specific plan, local coastal program, airport land use compatibility plan, or zoning ordinance; and
- Individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable or compound or increase other environmental impacts.

Farm Conversion

Because the HBRP requires no offsite linear facilities beyond King Salmon Avenue near the entrance to HBPP, project implementation would not bring about any changes in the environment that could result in the conversion of farmland to nonagricultural use. Neither the construction nor operational activities of the proposed project would result in any impacts to existing agricultural operations or foreseeable future agricultural use.

Community Disruption

Neither the size nor the nature of the HBRP would result in a physical division or disruption of an established community, no new physical barriers would be

created by the project, and no existing roadways or pathways would be blocked. Because the HBRP lies completely within the boundaries of the existing HBPP site, it requires no off-site linear facilities other than the potable water connection on King Salmon Avenue. Therefore, project implementation would not present a new physical barrier within the community. Rather, project implementation would result in the continued industrial use of an industrial site. (Ex. 200, p. 4.5-4.)

Conservation Plans

Humboldt County does not have a multispecies Habitat Conservation Plan. The HBRP would impact U. S. Army Corps of Engineers (USACE) jurisdictional wetlands and Coastal Commission wetlands. However, mitigation measures proposed by Applicant and Staff will avoid and mitigate significant impacts to wetlands and other biological resources. With the Conditions of Certification contained in the Decision, the HBRP would comply with all applicable biological resources LORS, including the Coastal Act. Compliance with the terms and conditions of necessary permits and LORS, as well as implementation of Conditions of Certification, would be necessary to avoid, minimize, or mitigate impacts to biological resources from the project to less than significant levels. The analysis and the mitigation measures are discussed more completely in the **Biological Resources** section of this Decision.

3. Consistency with LORS

The project must demonstrate consistency with the local land use requirements as well as Coastal Act policies, which constitute the standards used by the Coastal Commission in its coastal development, permit decisions; these are discussed below.

California Coastal Act

The project site is within the Coastal Zone in an unincorporated area of Humboldt County. Although Humboldt County has a certified Local Coastal Program

(LCP), the HBRP site is within the retained jurisdiction of the Coastal Commission. Land Use Figure 3 shows the jurisdiction of the Coastal Commission and of local coastal plans. The Coastal Commission retains jurisdiction of tidelands trust and other public trust lands such as historical coastal wetlands within areas that would otherwise fall under the jurisdiction of the LCP. Within these areas the Coastal Commission issues Coastal Development Permits based on an evaluation of the project's conformity with the policies of the California Coastal Act of 1976. However, the Coastal Commission uses the policies of Humboldt County's LCP, general plan, and zoning ordinance as guidance. (Exs. 1, p. 8.6-16; 200, p. 4.5-6.) Because the Energy Commission has jurisdiction over power plants and all related facilities, the Energy Commission issues a license in lieu of any state or local permit and must make findings concerning whether the proposed modification conforms with LORS, including land use plans and zoning. To that end, we have used Humboldt County's LCP, general plan and zoning ordinance and the Coastal Commission's policies as guidance for our LORS determination.

California Coastal Act Consistency Determination

Energy Commission staff received a letter from the Coastal Commission (docketed on October 16, 2007) stating that due to its staff's substantial workload and limited resources, the Coastal Commission would be unable to participate in the Application for Certification review currently before the Energy Commission. (Ex. 35.) As a result, the Coastal Commission did not develop the report it normally would for the HBRP siting case pursuant to Coastal Act Section 30413(d). The Coastal Commission letter encouraged the Energy Commission staff to incorporate essential aspects of Coastal Act conformity into the Staff analysis and testimony. The Energy Commission staff have done so and presented their analysis in the Staff testimony. (*See*, Ex. 200 pp. 4.5-5 to 4.5-7.)

The Coastal Act section 30255 states: Coastal-dependent developments shall have priority over other developments on or near the shore line. The HBRP is a

repowering project for the existing Humboldt Bay Power Plant, which is a designated coastal-dependent facility by the Coastal Commission. The site is zoned coastal-dependent industrial (MC) by Humboldt County. The HBRP would be located on the same property as the existing power plant and would utilize the plant's existing infrastructure including the natural gas pipeline, electric transmission line, well water, and sanitary sewer pipeline. (Ex. 1) The Coastal Act section 30101 defines "Coastal-dependent development or use" as any development or use which requires a site on, or adjacent to, the sea to be able to function at all. Although the HBRP would not use ocean water for once-through cooling, locating the HBRP at the site of the existing Humboldt Bay Power Plant, which is a coastal-dependent facility, allows the HBRP to utilize the plant's infrastructure, and thus avoid offsite construction of linear facilities or other infrastructure. Constructing the HBRP on this existing site would avoid the need to develop in areas of Humboldt County unaccustomed or unsuited to this type of industrial development. Furthermore, because the HBRP would discontinue the use of once-through-cooling now used at the existing HBPP, construction of the new project would have positive impacts on biological resources.

The Humboldt Bay region needs an electric generating facility and constructing the HBRP on the Humboldt Bay Power Plant site prevents the need for development in another area of the Coastal Zone or elsewhere outside the Coastal Zone. The Humboldt Bay Power Plant has been an established industrial site since the 1950s and will continue to be for the foreseeable future. The proposed 2007-2008 addition of the Independent Spent Fuel Storage Installation (ISFSI) underground cask storage vault for spent nuclear fuel will require, for the foreseeable future, that the HBPP parcel remain as an industrial site. Therefore, the proposed HBRP would be a suitable use for this site. (Exs. 1, p. 8.6-16; 200, p. 4.5-6.)

Section 30260 of the Coastal Act encourages Coastal-dependent industrial facilities to locate or expand within existing sites. Because the HBRP project

would be sited within the boundary of the existing power plant site, it is consistent with this policy of the Coastal Act. In addition, Applicant's testimony states that the project qualifies as reasonable long-term growth of the existing facility because it is consistent with a 1978 Coastal Commission report that envisioned additional power generating equipment at the Humboldt Bay Power Plant. As shown in the 1978 report, the Coastal Commission anticipated reasonable expansion of the Humboldt Bay Power Plant in this location. (Ex. 1, p. 8.6-17.) Staff testimony agreed that the HBRP is consistent with Section 30260 of the Coastal Act. (Ex. 200, p. 4.5-7.)

The Coastal Act Section 30240(b) states: Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

From a land use perspective, construction and operation of the HBRP would not significantly impact environmentally sensitive habitat areas and parks, including the existing public trail on the north side of the HBRP site, because the HBRP would be entirely within the fenced perimeter of the HBPP site. Within the HBPP site, the project would affect some wetlands under the jurisdiction of the USACE and Coastal Commission. However, the undisputed testimony established that these effects would be mitigated as a result of PG&E's Buhne Point Wetlands Preserve Mitigation and Monitoring Plan as discussed under the **Biological Resources** section of this Decision. (*Id.*)

Public Access

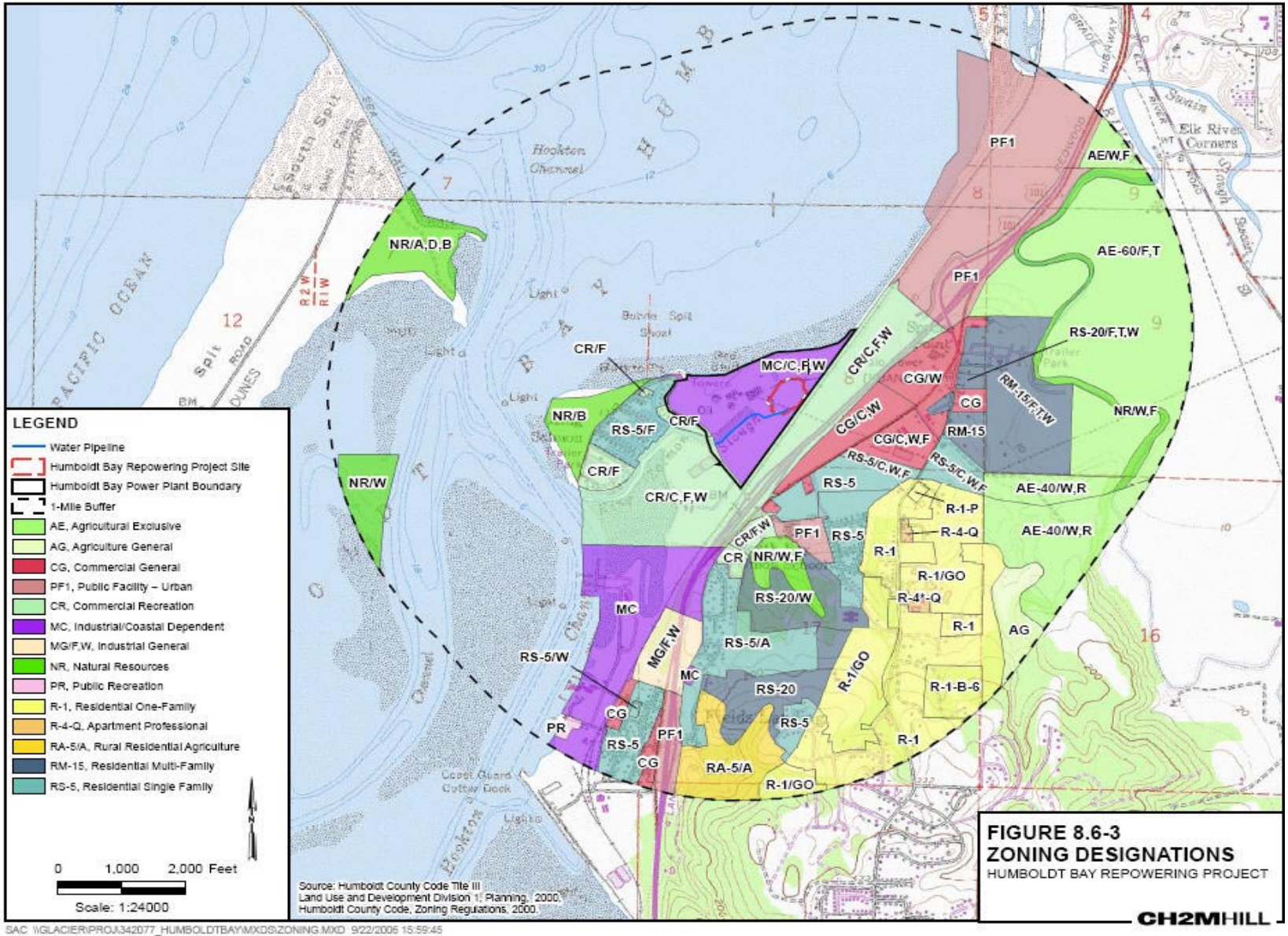
The Coastal Act Section 30211 states: Development shall not interfere with the public's right of access to the sea where acquired through the use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

The Coastal Act Section 30212 (a) requires public access from the nearest public roadway to the shoreline and along the coast.

PG&E initially stated in its AFC that adequate public access exists at the HBRP site because an existing trail along the Humboldt Bay shoreline crosses the property on which the HBRP site is located (the trail extends along the shoreline paralleling the northern fence line of the site boundary). This trail represents part of a planned coastal trail system that the California Coastal Conservancy envisions would eventually extend from Oregon to Mexico. As a Coastal Commission condition of approval for PG&E's ISFSI, PG&E is required to "maintain and enhance the existing access way." (Ex. 200, p. 4.5-7.)

While the existing trail satisfies the Coastal Commission's requirements for public access, section 25529 of the Warren-Alquist Act, also requires the Energy Commission to require the establishment of an area for public use as a Condition of Certification of a facility proposed in the Coastal Zone. To meet this requirement, Commission staff met with representatives from PG&E, Humboldt County, and the Redwood Community Action Agency to determine where opportunities for public use exist and how to best provide such an area within the community. Staff identified criteria for selection of an appropriate public use area. These criteria included factors such as evaluating the benefit to the community of any public use project, determining how the project would be funded, and evaluating how such a project could integrate with existing community plans. (Ex. 200, p. 4.5-9.)

LAND USE FIGURE 2 – ZONING DESIGNATIONS



Source: Ex. 1

Based on the identified criteria and the input received from the public, the Redwood Community Action Agency, the Applicant, and the City of Eureka, Staff determined that the Truesdale Vista Point to Hilfiker Lane Trail component of the Elk River Access Project would be the best option for meeting the statutory requirement for a public use area. The Truesdale Vista Point to Hilfiker Lane Trail has been identified in the City of Eureka's General Plan and Capital Improvement Program as a priority for local public access improvement projects. The Elk River Access Project is located within a two-mile radius of the HBRP site and is an important asset to the community. When completed, it will provide and enhance shoreline access within the 300-acre Elk River Wildlife Area. The trail project would provide an important link to the Humboldt Bay shoreline trail system, the California coastal trail, and would eventually tie into the existing trail at HBPP. (Ex. 200, p. 4.5-11.)

When constructed, the Truesdale Vista Point to Hilfiker Lane Trail would be about 2,265 feet long and 10 feet wide, with a crushed shale surface. Because of its designated priority, high use potential, and proximity to the HBRP site, the evidence established that the trail project would meet the requirements for a public use area, pursuant to section 25529 of the Warren Alquist Act. In addition, the City of Eureka has expressed its support for the funding of Truesdale Vista Point to Hilfiker Lane trail as provided in a letter to the Energy Commission dated April 7, 2008. (Ex. 200, p. 4.5-11.) To meet PG&E's request that it only be responsible for a one-time contribution, the City of Eureka has agreed to accept a check in the amount of $230,000 for this public use area. The City would then deposit the check in a dedicated account that would allow the expenditure of the funds to be used for the sole purpose of developing the Truesdale Vista Point to Hilfiker Lane Trail. To ensure satisfaction of this requirement, we have adopted Condition of Certification **LAND-2**.

Humboldt County

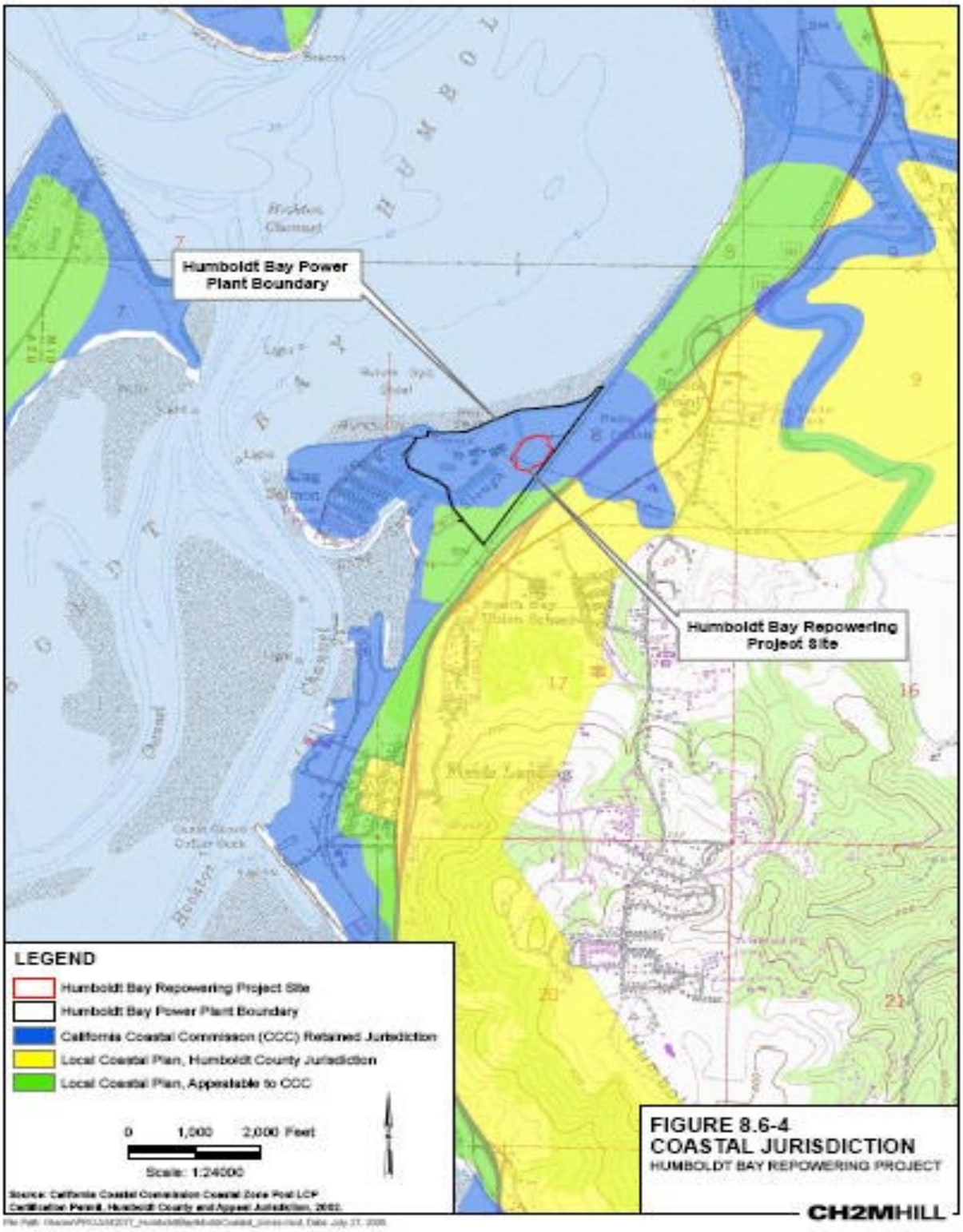
Although Humboldt County has a certified Local Coastal Program (LCP), the HBRP site is within the retained jurisdiction of the Coastal Commission. However, as noted above, the policies of Humboldt County's LCP, general plan, and zoning ordinance are used by the Coastal Commission and by the Energy Commission as guidance. (Ex. 200, p. 4.5-12.) The Staff testimony identified HBRP's consistency with policies in the Humboldt County General Plan Volume II: Humboldt Area Plan of the Humboldt County Local Coastal Program (HBAP). (Ex. 1, pp. 8.6-23 to 8.6-25; Ex. 200, pp. 4.5-13 to 4.5-14.)

4. Indirect and Cumulative Impacts

Staff does not expect the removal of Units 1 and 2 to contribute to indirect land use impacts. Construction of the HBRP will result in the end of operation and the surrendering of air permits for Units 1 and 2 as well as the Mobile Emergency Power Plants (MEPPs); but it will not directly result in the demolition of any of the structures and associated equipment that comprise Units 1 and 2. (Ex. 200, p. 4.5-16.)

The proposed project would not contribute to regional impacts related to new development and growth. The HBRP is a repowering project for the existing Humboldt Bay Power Plant, a coastal dependent facility. It would be located on the same property as the existing power plant and would use the plant's existing infrastructure (natural gas pipeline, electric transmission line, well water, and sanitary sewer). In addition to the HBRP, other activities occurring on the Humboldt Bay Power Plant parcel include PG&E's ISFSI project and the decommissioning of Unit 3. Because these projects would occur on-site, the undisputed testimony establishes that they would not disrupt or physically divide an established community, nor would they preclude or unduly restrict existing or planned uses, or contribute to significant adverse cumulative land use impacts. (Exs. 1, p. 8.6-26; 200, p. 4.5-17.)

LAND USE FIGURE 3 – COASTAL JURISDICTION



Source: Ex. 1

FINDINGS AND CONCLUSIONS

Based upon the undisputed evidence of record, we make the following findings and reach the following conclusions:

1. The HBRP is located in an industrially zoned area and is a compatible use within that area.

2. The project is consistent with Humboldt County's existing land use designation, land use plans, and zoning.

3. Pursuant to Public Resources Code Section 30413(d), the HBRP is consistent with the requirements of the Coastal Act.

4. The project would not disrupt or divide the physical arrangement of an established community.

5. The project would not preclude or unduly restrict existing or planned land uses, either industrial or residential.

6. The evidence of record considers the HBRP in conjunction with a number of proposed development projects in the vicinity.

7. The evidence of record persuasively establishes that the HBRP would not make a significant contribution to regional impacts related to new development and growth.

8. The Conditions of Certification ensure that the project will comply with all applicable local land use requirements.

We therefore conclude that the HBRP will not create significant adverse direct, indirect, or cumulative impacts and will comply with applicable laws, ordinances, regulations, and standards contained in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the design and performance standards for the MC Industrial/Coastal Dependent Zone set forth in the Humboldt County Zoning Ordinance, as follows:

- All manufacturing and fabricating areas shall be enclosed in buildings.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval written documentation including evidence of review by Humboldt County that the project conforms to the design and performance standards of the Zoning Ordinance.

LAND-2 The project owner shall make a $230,000 contribution to the City of Eureka for its Elk River Access Project for use by the City for the following capital improvement project: the Truesdale Vista Point to Hilfiker Lane Trail.

Verification: Within 180 days after the start of construction, the project owner shall provide to the CPM a receipt demonstrating the deposit of $230,000 with the City of Eureka in a dedicated account for the Truesdale Vista Point to Hilfiker Land Trail component of the Elk River Access Project.

B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the proposed project will affect the local area's transportation network. The evidence of record includes an analysis of: (1) the roads and routings that are proposed to be used for construction and operation; (2) potential traffic-related problems associated with the use of those routes; (3) the anticipated encroachment upon public rights-of-way during the construction of the proposed project and associated facilities; (4) the frequency of trips and probable routes associated with the delivery of hazardous materials; and (5) the possible effect of project operations on local airport flight traffic.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed project site is situated on Buhne Point approximately 3 miles south of the city of Eureka, just north of the unincorporated community of King Salmon, and west of the unincorporated community of Humboldt Hill. (Ex. 200, p. 4.10-3.)

U.S. Highway 101 (Hwy 101) and State Route 299 (SR 299) are the two nearest primary transportation corridors to the HBRP site. There are three airports within the project vicinity: Eureka Municipal Airport (2.5 miles north), Murray Field Airport (6 miles northeast), and Eureka/Arcata Airport (23 miles north). Additionally, there is a railroad at the eastern boundary of the site (Northwestern Pacific Railroad) as well as bus/transit service (Redwood Transit System) with a bus stop on the east and west sides of the intersection of King Salmon Avenue and Hwy 101. (Ex. 200, p. 4.10-3.)

Access to the temporary parking and laydown area would be from a new temporary construction access road, which would be constructed immediately east of the HBPP intake channel. Temporary construction parking will be located off of King Salmon Avenue at the north end of the HBRP temporary construction access road and off King Salmon Avenue west of the HBRP temporary

construction access road. A short-term delivery parking area adjacent to King Salmon Avenue would be used if necessary. (Ex. 200, p. 4.10-3.)

The project's construction and operation traffic routes connecting to highways are located within the sphere of influence of the City of Eureka in the County of Humboldt. The key roads and highways in the vicinity of the HBRP include SR-299, US Highway 101, and King Salmon Avenue. (Ex. 200, pp. 4.10-3; see **Traffic and Transportation Figure 1**.)

The Levels of Service (LOS)[16] for street intersections in the vicinity are shown in **Table 1**, below.

TRAFFIC AND TRANSPORTATION Table 1
Level of Service Summary for Existing Conditions

Name	Segment	Hourly Design Capacity	Peak-Hour Volume	V/C	LOS
Hwy 101	East of King Salmon Avenue	7,200	2,850	0.39	A
King Salmon Avenue	HBRP to Hwy 101	800	353	0.44	A

Source: Ex. 1, p. 8.12-8.

As shown, the HBRP will not cause degradation in the LOS on area streets. This conclusion is based upon the evidence presented below.

[16] The operating conditions of a roadway (surface street) system, including intersections, are described using the term "level of service." Level of service (LOS) is a description of a driver's experience at an intersection or roadway based on the level of congestion (delay). LOS can range from "A," representing free-flow conditions with little or no delay to "F," representing saturated conditions with substantial delay.

TRAFFIC AND TRANSPORTATION – FIGURE 1

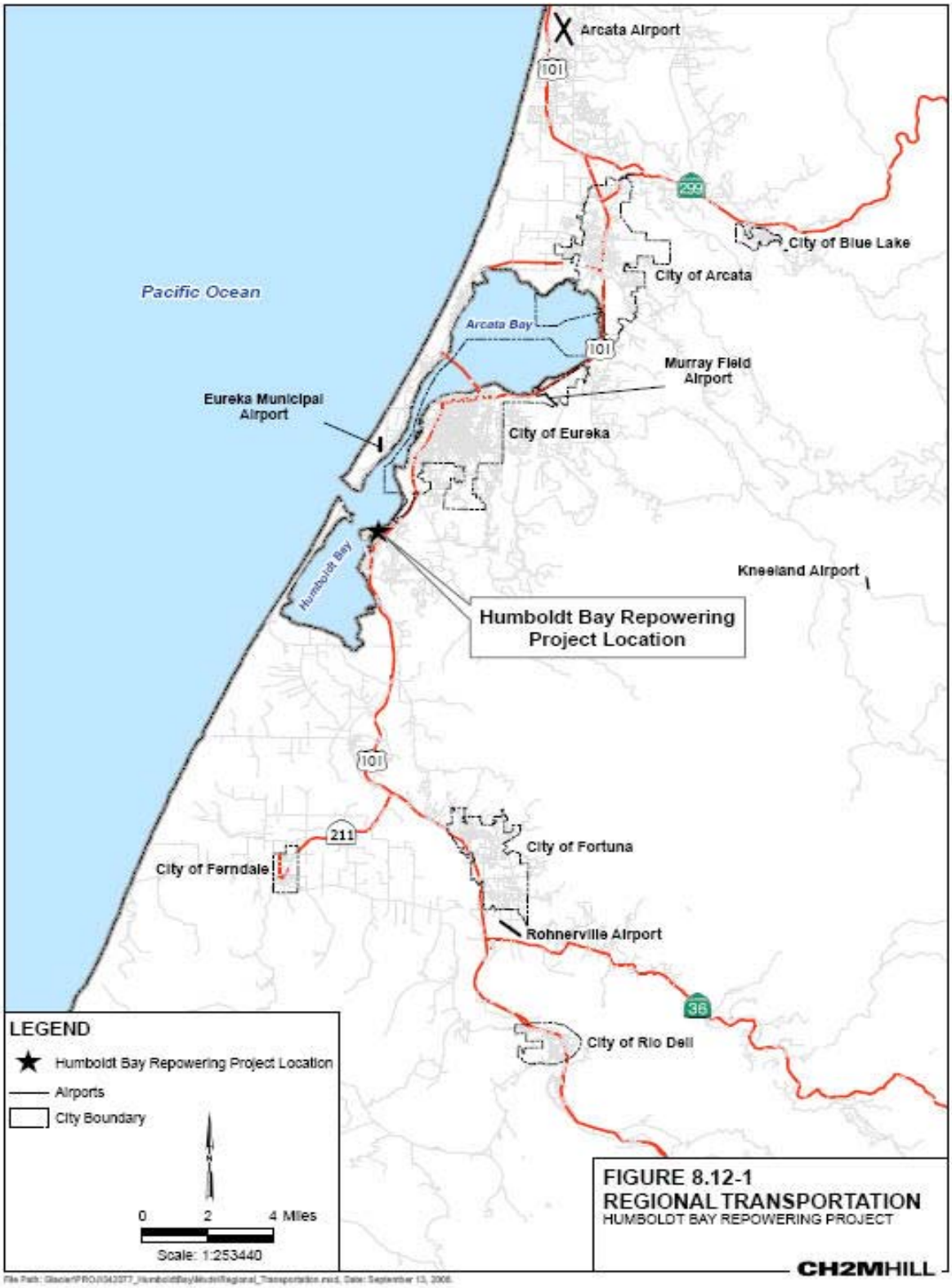


Exhibit 1

1. Construction

Facility construction is projected to take place over 18 months. The construction workforce is expected to come from Humboldt County, particularly from within the Eureka area. The workforce is expected to use southbound Hwy 101 to commute to/from the project site. The maximum expected traffic volume from construction workers commuting to and from the project site would be 236 vehicles commuting via Hwy 101 and accessing the project site from King Salmon Avenue. (Ex. 200, p. 4.10-8.)

The maximum number of construction workers commuting to the project site during peak hours is estimated to be 236 daily workers. The peak daily round trips generated by construction traffic are estimated to be approximately 290 which would occur during months 11 and 12 of construction. A daily average of 118 round trips is expected. These trips would be generated by construction-related vehicles, delivery trucks, and heavy vehicles commuting to and from the project site. (Exs. 1, p. 8.10-15; 200, p. 4.10-7.)

Traffic and Transportation Table 2 shows the predicted change to critical road segment LOS levels during construction of the HBRP project.

TRAFFIC AND TRANSPORTATION Table 2

Existing Level of Service and Estimated Construction Level of Service

Name	Segment	Hourly Design Capacity	Existing Peak-Hour Volume	Construction Peak-Hour Volume	Existing V/C	Construction V/C	Existing LOS	Construction LOS
Highway 101	East of King Salmon Avenue	7,200	2,850	3,086	0.39	0.43	A	A
King Salmon Avenue	Highway 101 to HBRP site	800	353	589	0.44	0.74	A	C

Source: Ex. 1, pp. 8.12-8, 8.12-13.

As shown in **Traffic and Transportation Table 2,** the addition of 236 vehicles would cause the LOS on King Salmon Avenue from Hwy 101 to the project site to decline during the peak hour from LOS A to LOS C. Although the LOS C level is acceptable in Humboldt County (Ex. 1, p. 8.12-13) the drop in LOS from A to C is a substantial impact to circulation along King Salmon Avenue. Therefore, condition of certification **TRANS-1** will require the applicant to prepare a Traffic Control Plan prior to construction in order to reduce the impact of a decreased LOS along King Salmon Avenue. Hwy 101, east of King Salmon Avenue, currently operates at LOS A during peak-hours and would remain at LOS A during peak construction. (Ex. 1, pp. 8.12-8, 8.12-13; Ex. 200, p. 4.10-9.)

There are two elementary schools within 2.5 miles of the project site. The proposed construction workforce travel route does not pass either of the above schools. There are several school bus stops in the King Salmon neighborhood located southwest of the HBRP that can only be accessed via King Salmon Avenue. However, construction-related traffic would not pass any of these bus stops and would therefore not present a safety hazard to students waiting at or walking to or from a bus stop. Staff analysis determined that both during construction and operation, the project would not generate commuter or truck traffic trips through a residential area or directly adjacent to a school facility or school bus stop. (Ex. 200 pp. 4.10-11, 4.10-18.)

During the construction period, small quantities of hazardous materials would be used, for example, cleaning solvents, paint, and antifreeze. However, no acutely toxic hazardous materials would be used on-site during construction. (Ex. 200, p. 4.10-8.)

Construction related truck traffic (deliveries to the HBRP site and hauling from the HBRP site) would occur throughout the day. Construction-related truck traffic (54 daily trips at peak) is not expected to reduce LOS or substantially increase congestion. There is, however, potential for unexpected damage to roads by

vehicles and equipment within the project area. Therefore, Condition of Certification **TRANS-2** requires repair of any road damaged by project construction to its original condition. (Ex. 200, p. 4.10-9.)

HBRP construction workers would park in a temporary construction parking area to be constructed at the north end of the temporary access road. Both the temporary access road and construction parking area would be removed after construction and the area restored. Construction workers would also park in a temporary remote parking area containing 104 parking spaces, previously used for construction of the HBPP, which is located off King Salmon Avenue, west of the HBRP temporary construction access road.
Condition of Certification **TRANS-1** requires the Applicant to provide verification that the temporary construction parking areas will accommodate 236 construction vehicles. (Ex. 200, pp. 4.10-9 to 4.10-10.)

Construction of the HBRP would directly result in the cessation of operation of the HBPP; however, there is no schedule for demolition of Units 1 and 2. (Ex. 1, p. 2-4.) As stated in the HBRP AFC, Units 1 and 2 must be fully operational to serve the Humboldt County load until the HBRP is constructed, commissioned, and fully operational. Therefore, any demolition of these units would occur after the HBRP is constructed, and thus the HBRP and the demolition of Units 1 and 2 would not combine to have a significant adverse cumulative impact on traffic flow. Likewise, the Independent Spent Fuel Storage Installation (ISFSI), an underground facility to provide long-term, safe storage of the spent fuel rods currently stored within Unit 3 of the HBPP, is substantially completed with spent fuel loading scheduled to be completed by 2009. The ISFSI construction will not overlap with HBRP construction, and thus there would be no cumulative impacts associated with construction and operation of ISFSI and the construction and operation of the HBRP. (Ex. 200, pp. 4.10-14 to 4.10-15.)

1. Operation

Operation of the HBRP would require 17 employees. Truck traffic associated with operation of the HBRP would not exceed 20 trips per month, except in the event of an emergency which could require up to 24 deliveries of diesel fuel per day. However, the expected average daily truck deliveries under normal operation conditions would be two or less trips per day. Therefore, HBRP operations would not significantly impact traffic. Condition of certification **TRANS-3**, requires the Applicant to provide adequate parking as needed for operational and maintenance staff in compliance with Coastal Commission and/or Humboldt County Community Development Service Department rules for onsite parking. (Ex. 200, pp. 4.10-11 to 4.10-12.)

The Applicant is required to comply with all LORS governing the transport, storage, and use of hazardous materials. The California Department of Motor Vehicles specifically licenses all drivers who carry hazardous materials. Drivers are required to check for weight limits and conduct periodic brake inspections. Commercial truck operators handling hazardous materials are required to take instruction in first aid and procedures on handling hazardous waste spills. Drivers transporting hazardous waste are required to carry a manifest which is available for review by the California Highway Patrol at inspection stations along major highways and interstates. Assuming compliance with existing federal and state standards, deliveries of hazardous materials such as aqueous ammonia and water treatment chemicals will not likely create adverse impacts.

Furthermore, to avoid potential conflicts or accidents between school buses and vehicles transporting hazardous materials, Condition of Certification **HAZ-6** requires the Applicant to schedule delivery of aqueous ammonia and diesel fuel to the site so as not to coincide with school bus traffic. For a more detailed discussion on the handling and disposal of hazardous substances, see the

Hazardous Materials Management section of this Decision. (Ex. 200, pp. 4.10-13 to 4.10-14.)

The Eureka Municipal Airport, located approximately 2.5 miles north of the HBRP, is the closest airport to the project site. This airport is a public general-aviation airport with one runway designated for powered aircraft which averages 96 flights per week. The Engineering Department of the City of Eureka oversees the operation of the Eureka Municipal Airport (FAA Identifier O33). Flight patterns for this airport do not over fly either Humboldt Bay or the city of Eureka and the HBRP would be located well outside its flight patterns. The county facilities at Murray Field Airport are over five miles east of the Eureka Municipal Airport and its flight patterns are even more removed from the location of the proposed site. Therefore, hot exhaust from the HBRP would not affect aircraft maneuverability from area airports. In addition, the HBRP does not have any structure exceeding 200 feet in height, which would require notifying the FAA of a potential hazard to air traffic.

The California Highway Patrol (CHP) currently conducts monthly deployments out of the Redding Field Office for traffic enforcement. The CHP primarily uses airplanes for traffic enforcement that fly at a minimum of 500 feet above ground level (AGL). The CHP flies over Hwy 101 and SR 299 at a minimum of two to three times per month and a maximum of four to five times per month. Project-generated thermal plumes would not present a hazard to aircraft originating from area airports flying at or above 1,000 feet above ground level and the presence of the plant would not significantly influence the potential for an aircraft accident during normal airport operations. To avoid any risk to CHP airplanes resulting from thermal plumes, Condition of Certification **TRANS-4** requires the Applicant to submit written notification to the CHP, Humboldt Area Office informing them of the start date of commercial operation for the power plant, and advising them that potential turbulence caused by thermal plumes emitted from the engine exhaust stacks may adversely affect aircraft flying directly over the power plant.

Overall, the evidence of record contains no credible assertion that the HBRP will cause or contribute to adverse impacts to the area's transportation network.

FINDINGS AND CONCLUSIONS

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

1. Construction of the HBRP will cause temporary, short-term increases in road congestion.
2. Temporary, short-term increases in congestion resulting from construction of the project will be adequately offset by development and implementation of a construction traffic control and implementation plan.
3. Construction of the HBRP and other identified projects in the same time frame will not result in a significant adverse cumulative impact on local traffic flow.
4. Measures contained in the Conditions of Certification will ensure enough parking spaces to accommodate 236 vehicles during construction.
5. Measures contained in the Conditions of Certification will ensure compliance with Coastal Commission requirements and local rules regarding minimum onsite parking during operation.
6. Applicant will restore any road damage caused by project construction to its original condition.
7. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws as well as Conditions of Certification in the Hazardous Materials Management Section of this Decision.
8. During operation, workforce and truck traffic to and from the facility will not result in a substantial increase in congestion, or deterioration of the existing LOS any time in the daily traffic cycle and will not result in a significant adverse impact along the routes or roadway intersections used to access the HBRP site.
9. During construction and operation, the project will not generate commuter or truck traffic trips through any residential area or directly adjacent to a school facility or school bus stop.
10. Project-generated thermal plumes will not present a hazard to aircraft originating from area airports flying at or above 1,000 feet above ground level and the presence of the plant will not significantly influence the potential for an aircraft accident during normal airport operations.

11. Prior to commencement of operation, Applicant must advise CHP of potential aircraft turbulence caused by thermal plumes emitting from plant exhaust stacks.

The Commission, therefore, concludes that construction and operation of the project, as mitigated herein, will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system.

CONDITIONS OF CERTIFICATION

Traffic Control and Implementation Plan

TRANS-1 The project owner shall prepare and implement a construction traffic control and implementation plan for the HBRP and its associated facilities, containing:

- A Traffic Management Plan (TMP) addressing the movement of vehicles and materials, including arrival and departure schedules outside of peak travel periods and school bus pick-up/drop-off and designated workforce and delivery routes and coordination with Caltrans, and other traffic-related activities and resulting impacts during construction of the project.
- Redirection of construction traffic with a flag person.
- Signing, lighting, and traffic control device placement.
- A Heavy Haul Plan (HHP), addressing the transport and delivery of heavy and oversized loads requiring permits from Caltrans or other state and federal agencies.
- A Parking Plan to ensure designated parking areas are adequate to accommodate construction workforce vehicles and parking spaces comply with county length and width dimensions.
- Access and entry for emergency service vehicles to the project site.

The project owner shall consult with the Coastal Commission, Humboldt County Public Works Department, and Caltrans in the preparation and implementation of the traffic control and implementation plan and shall submit the proposed traffic control plan to the Coastal Commission, Humboldt County and Caltrans in

sufficient time for review and comment and to the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan. The project owner shall provide a copy of any written comments from the Coastal Commission, Humboldt County or Caltrans and any changes to the traffic control plan to the CPM prior to the proposed start of construction.

Verification: At least 60 calendar days prior to the start of each phase of construction (Phase 1 consisting of site mobilization, demolition, site remediation and construction of the access road, and Phase 2 consisting of all other construction activity), the project owner shall submit the corresponding proposed traffic control and implementation plan to the Coastal Commission, Humboldt County Public Works Department and Caltrans for review and comment and shall provide at least 30 days for these agencies to respond and comment on the plan. Additionally, the project owner shall submit the proposed traffic control and implementation plan to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the Coastal Commission, Humboldt County and Caltrans requesting review and comment.

At least 30 calendar days prior to the start of each phase of construction, the project owner shall provide copies of any comment letters received from either the Coastal Commission, Humboldt County or Caltrans, along with any changes to the proposed plan to the CPM for review and approval.

Repair of Public Right-of-Way

TRANS-2 The project owner shall restore all public roads, easements, and rights-of-way (ROW) that have been damaged due to project-related construction activities to original or near original condition in a timely manner.

Prior to the start of site mobilization, the project owner shall consult with Humboldt County and Caltrans (if applicable) and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the local jurisdiction and Caltrans consider postponement of public ROW repair or improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner any concurrent construction-related activities that are planned or in progress and cannot be postponed.

Verification: At least 30-days prior to the start of mobilization, the project owner shall photograph or videotape all affected public roads, easements, and ROW segment(s) and/or intersections and shall provide the CPM, the affected local jurisdiction(s) and Caltrans (if applicable) with a copy of these images.

Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the affected local jurisdiction(s) and Caltrans (if applicable),

to identify sections of public ROW to be repaired. At that time the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public ROW repairs, the project owner shall provide a letter signed by the affected local jurisdiction(s) and Caltrans stating their satisfaction with the repairs to the CPM.

Parking Standards

TRANS-3 The project owner shall comply with the applicable parking standards for project operation as established by the Coastal Commission and Humboldt County.

Verification: At least 30 days prior to start of construction, the project owner shall submit written evidence to the CPM that the project conforms to all applicable parking standards as established by the Coastal Commission and Humboldt County standards. The submittal to the CPM shall include evidence of review by the Coastal Commission and Humboldt County.

California Highway Patrol Notification

TRANS-4 Prior to the start of commercial operation the project owner shall submit written notification to the California Highway Patrol (CHP), Humboldt Area Office informing them of the start of commercial operation date for the power plant, and advising them that potential turbulence caused by thermal plumes emitted from the power plant's engine exhaust may adversely affect aircraft flying directly over the power plant below an elevation of 1,000 feet above ground level.

Verification: The project owner shall provide to the CPM a copy of the transmittal letter submitted to the CHP, Humboldt Area Office. The project owner shall provide any written comment(s) received on the written notification from the CHP Humboldt Area Office to the CPM for review.

Encroachment Permit

TRANS-5 Prior to any ground disturbance or obstruction of traffic (for example, temporary delays) within any public road, easement, or ROW, the project owner or its contractor(s) shall coordinate with the Humboldt County Public Works Department and Caltrans (if applicable), and obtain all required permits. All activities by the project owner or its contractor(s) shall comply with the applicable requirements of any affected local jurisdiction and Caltrans.

Verification: At least 20 days prior to ground disturbance or interruption of traffic in or along any public road, easement, or ROW, the project owner shall provide copies of all permit(s) received from Caltrans or other affected jurisdictions to the CPM. In addition, the project owner shall retain copies of the issued/approved permit(s) and supporting documentation in its compliance file for a minimum of 180 calendar days after the start of commercial operation.

C. SOCIOECONOMICS

The first portion of the this topic focuses on pertinent demographic information within radii of one and six miles of the project site, evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities and other public services, as well as the fiscal and physical capacities of local government to meet those needs. The public benefits of the project are also reviewed. As part of this review, the analysis examines both the beneficial impacts on local finances from property and sales taxes as well as the potential adverse impacts upon public services. The evidence of record is undisputed on these matters. (Ex. 200, p. 4.8-1.)

Discussion concerning the Environmental Justice aspects and the analysis conducted to determine whether project-related activities would result in disproportionate impacts on low income and/or minority populations follows in subsection "2" below.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Demographics, Services, and Finances

The construction phase is typically the focus of this stage of the Socioeconomics analysis because of the potential influx of workers into the area. Impacts are considered significant if a large influx of non-resident workers and dependents occur in the project area, thus increasing demand for community resources.

The evidence establishes that about one-third of the labor force would come from areas nearby Eureka, Humboldt County, and surrounding areas. Two-thirds will be imported from other California and Western U.S. areas beyond a two-hour commute distance and would be likely to relocate. Since the supply of permanent and temporary housing would be adequate to accommodate the estimated 67

average non-local construction workers who would relocate, the influx of workers during the construction phase would not displace the local population. (Ex. 200, p. 4.8-7.)

Project construction (power generation facility including the natural gas pipeline) is expected to occur over an 18-month period. The greatest number of construction workers (peak) would occur in the 11th and 12th month of construction. The number of construction workers would range from about four in the last month of construction to 236 workers at peak construction. The HBRP's peak construction activity represents about t10 percent of the North Coast Region's labor market construction workforce of 2,300. There would be an average of 101 workers per month during construction. (Ex. 200, p. 4.8-4.)

During operation of the project, about 17 workers would be needed to maintain and operate the project. The operational workers are expected to come from Humboldt County. Staff estimated that this small increase in employment would have little effect on employment rates. (Ex. 200, p. 4.8-5.)

The capital cost for project construction is approximately $250 million. The total construction payroll is $30 million and the estimated value of materials and supplies that will be purchased within Humboldt County during construction is $2.6 million. (Ex. 200, p. 4.8-5.)

The total sales tax estimated during construction is expected to be $5.8 million annually. Total property taxes are estimated at $2.8 million annually. The total payroll for the operation phase is estimated to be $2.1 million annually. In addition, there will be about $150,000 in local expenditures per year on materials and supplies during operation. Sales tax revenue from locally purchased materials during operation will be approximately $377,000 annually. (Ex. 200, p. 4.8-6.)

The following Table provides a summary of socioeconomic data and information, with emphasis on the economic effects of the HBRP.

SOCIOECONOMICS Table 1
Data and Information

Estimated Project Capital Costs	$250 million
Estimate of Locally Purchased Materials	
Construction	$2.6 million
Operation (Operation and Maintenance)	$150,000 per year
Estimated Annual Property Taxes	$2.8 million annually
Estimated School Impact Fees	Zero
Estimated Direct Employment	
Construction (average)	101 jobs (average per month)
Operation	17 jobs
Estimated Secondary Employment	
Construction	84
Operation	49 jobs
Estimated Local Secondary Income	
Construction	$2,354,560
Operation	$1,495,820
Estimated Payroll	
Construction	$30 million
Operation	Average: $2.1 million annually
Estimated Sales Taxes	
Construction	$5.8 million
Operation	$377,000 annually
Existing Unemployment Rates	Existing – 5.3 percent in August 2006, for Humboldt County (Not Seasonally Adjusted)
Percent Minority Population (6 mile radius)	18.29 percent
Percent Poverty Population (6 mile radius and beyond)	20.4 percent
Percent Minority Population (1 mile radius)	17.53 percent
Percent Poverty Population (1 mile radius)	16.89 percent

Source: Exhibit 200, p. 4.8-12.

The analysis of record characterizes the capital expenditures, construction payroll, annual property taxes and sales taxes, and the value of locally purchased construction and operation equipment and materials as beneficial to Humboldt County. (Ex. 200, p. 4.8-11.) The evidence further establishes that since the workforce will likely commute to the project, neither the construction nor the operation workers will place an undue stress upon available housing.

Similarly, the evidence shows that existing educational, police, medical and emergency services will not be adversely impacted. (Ex. 200, pp. 4.8-7 to 4.8-9.)

Finally, the evidence shows the PG&E fuel oil pipeline removal from Olson's Wharf to the HBPP site would not coincide with the HBRP construction peak. The pipeline will have a very short-term construction period of three months, with a relatively small peak of 26 construction workers in the third month, using a different labor force than the HBRP. There would be no adverse socioeconomic cumulative impact from the PG&E fuel oil pipeline removal project and the HBRP. Because all the other known projects would not occur at the same time as construction of the HBRP, there would be no significant adverse cumulative socioeconomic impacts for the HBRP. (Ex. 200, p. 4.8-10.) Furthermore, the HBRP will not result in any significant adverse socioeconomic impacts to population, housing, or public services due to the small size and temporary nature of construction. Therefore, it is unlikely that it would contribute significantly to cumulative socioeconomic impacts. Thus, the HBRP's impact on socioeconomics, when combined with the existing impact of other projects, is not cumulatively considerable. (Ex. 200, p. 4.8-11.)

2. Environmental Justice

Section 65040.12 (c) of the Government Code defines "environmental justice" to mean "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." In addition, federal guidelines encourage governmental agencies to incorporate environmental justice principles in the environmental review of this project.

The steps recommended by these guidance documents to assure that environmental justice concerns are addressed include: (1) outreach and involvement; (2) a demographic screening to determine the existence of a

minority or low-income population; and (3) if warranted, a detailed examination of the distribution of impacts on segments of the population.

The evidence of record contains a demographic screening conducted in accordance with the "Final Guidance for Incorporating Environmental Justice Concerns in USEPA's National Environmental Policy Act (NEPA) Compliance Analysis" dated April 1998. The purpose of the demographic screening is to determine whether there exists a minority or low-income population within the potentially affected area. Minority populations exist, for purposes of an environmental justice analysis, where either:

- The minority population of the affected area is greater than 50 percent of the affected area's general population; or
- The minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- One or more census blocks in the affected area have a minority population greater than 50 percent.

Minority individuals, for present purposes, are those who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic. Low-income populations are identified based upon the annual statistical poverty thresholds from the Bureau of the Census's Current Population Reports on Income and Poverty. (Ex. 200, p. 4.8-2.)

The evidence of record shows that Census 2000 information indicates the minority population by census block (the smallest geographic unit for which the Census Bureau collects and tabulates data) is 18.29 percent and 17.53 percent which is less than the threshold of greater than 50 percent within a six-mile and one-mile radius of the proposed HBRP. Census 2000 by census block group (a combination of census blocks and subdivision of a census tract) information shows that the below poverty population is 20.4 percent within the six-mile radius

and 16.89 percent within the one-mile radius. Poverty status excludes institutionalized people, people in military quarters, people in college dormitories, and unrelated individuals under 15 years of age. (Ex. 200, p. 4.8-2.) Since the percentage of people living under the poverty level falls well below 50 percent, there is no evidence of potentially disproportionate impacts on low income populations.

FINDINGS AND CONCLUSIONS

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

1. HBRP will draw primarily upon non-local labor force for the construction workforce and local labor for the operation workforce.

2. The supply of permanent and temporary housing would be adequate to accommodate the non-local construction workers who would relocate, so the influx of workers during the construction phase would not displace the local population.

3. HBRP is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.

4. HBRP will have a construction payroll of approximately $30 million.

5. HBRP will result in one-time local direct construction expenditures of approximately $2.6 million and local direct operational expenditures of about $150,000 annually.

6. HBRP will likely result in increased revenue from sales taxes due to construction activities.

7. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

8. Siting of HBRP and the analysis thereof, are consistent with the principles underlying environmental justice.

9. Although, federal environmental justice guidelines are not binding in this case, the analysis of record has been performed in conformity therewith.

10. HBRP will not cause or contribute to disproportionate impacts upon minority or low income groups.

11. All environmental impacts from the HBRP will be mitigated to below a level of significance.

12. HBRP's contribution to cumulative impacts, in conjunction with the impacts from other reasonably foreseeable projects, is adequately addressed in the record and in appropriate portions of this Decision.

We therefore conclude that the project construction and operation activities will create some degree of benefit to the local area and will conform to principles of environmental justice.

No Conditions of Certification are required for this topic.

D. NOISE AND VIBRATION

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting, which has the potential to cause structural damage and annoyance. The analysis of record summarized below evaluates whether noise and vibration produced during project construction and operation will be sufficiently mitigated to comply with applicable law. The evidence presented was uncontested. (Ex. 200, p. 4 6-1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The land use designation of the project site is Industrial and Industrial-Resource Dependent, and the land is zoned MC (Industrial/Coastal Dependent). To the east of the site lay Highway 101, rural parcels, and some commercial development. (Ex. 1, §§ 1.1, 2.0, 2.3, 8.7.2.1; Ex. 200, p. 4 6-5.)

Nearby sensitive noise receptors include the community of King Salmon, 1,500 feet to the west; the Humboldt Hill neighborhood and the South Bay Union School, 2,000 feet to the east; and the Sea View Mobile Estates neighborhood, 2,500 feet to the south. (Ex. 1, §§ 2.3, 8.7.2.1; Ex. 7, Data Response 33, Ex. 200, p. 4 6-5.)

The Applicant presented the results of two ambient noise surveys. (Ex. 1, § 8.7.2.2, Tables 8.7-3, 8.7.4, 8.7-5 and Figure 8.7-1.) The initial survey was performed from Monday, June 12, 2006 through Tuesday, June 13, 2006. The second survey was performed from Thursday, September 7, 2006 through Saturday, September 9, 2006, using acceptable equipment and techniques. (Ex.

200, p. 4 6-5.) The noise surveys monitored existing noise levels at the following monitoring locations:

1. **M1**: A small dock at the eastern edge of the community of King Salmon, approximately 1,500 feet from the HBRP site (the nearest residential noise receptors);

2. **M2**: A spot on the HBPP site, approximately 1,500 feet from the HBRP site and just west of a small hill that may shield some King Salmon residences from power plant noise;

3. **M3**: A chain link fence, approximately 2,000 feet south of the HBRP site, separating the South Bay Union School parking lot from the Humboldt Hill residential neighborhood;

4. **M4**: Sunshine Way in the Sea View Mobile Estates mobile home park, approximately 2,500 feet southeast of the HBRP site; and

5. **M5**: On Loma Avenue, in a commercial neighborhood adjacent to the east side of Highway 101, approximately 3,000 feet southwest of the HBRP site.

The Applicant's first noise monitoring survey was taken in June, when HBPP power output and noise was fairly low. The second survey was taken in September when power output and noise levels were slightly greater. (Ex. 200, Tables 8.7-3 and 8.7-4.) Staff selected data from Table 8.7-4 (September monitoring survey) as more representative of the existing noise regime because the power plant's neighbors are accustomed to this noise regime. (Ex. 200, p. 4 6-6.)

In general, the noise environment in the vicinity of the project site and in King Salmon is dominated by the HBPP and by traffic on Highway 101. The noise environment at the sensitive receptors across Highway 101 is dominated in the daytime by highway traffic and in the nighttime by the HBPP. (Ex. 200, p. 4 6-6.)

The ambient noise monitoring surveys recorded L_{eq} (energy average) and L_{90} (background) noise levels. These figures are summarized below in **NOISE AND VIBRATION Table 1**:

NOISE AND VIBRATION Table 1
Summary of Measured Ambient Noise Levels

Measurement Sites	Measured Noise Levels, dBA			
	Average During Nighttime Hours[1]		Average During Daytime[2]	L_{dn}
	L_{eq}	L_{90}	L_{eq}	
M1 – Dock representing nearest King Salmon residences	48	45	53	56
M2 – Power plant property west of hill	47	44	49	54
M3 – Humboldt Hill residential neighborhood	45	40	54	55
M4 – Sea View Mobile Estates	39	34	49	50
M5 – Loma Avenue commercial district	52[3]	35	—	N/A[4]

Source: Ex. 1, Tables 8.7-4, 8.7-5; Ex. 200, p. 4.6-7.
1. Staff calculations of average of four quietest consecutive hours of the nighttime.
2. Staff calculations of average of all daytime hours for which data is available.
3. Results of 20-minute sample at 1:12 a.m. (from Table 8.7-5).
4. L_{dn} not available because monitoring did not encompass a 24-hour period.

The project will create noise during both its construction and its operation.

1. Construction

Construction noise is a temporary event and in this case, is expected to last about 18 months. However, the Applicant has committed to limiting noisy construction to the hours between 7:00 a.m. and 8:00 p.m., seven days a week, to minimize noise impacts on sensitive receptors. (Ex. 1, § 8.7.5.3.) In order to ensure compliance with this restriction, we offer Condition of Certification **NOISE-6**, which would limit noisy construction to these hours. (Ex. 200, p. 4 6-7.)

Predicted construction noise levels are summarized below in **Table 2**.

NOISE AND VIBRATION Table 2
Predicted Construction Noise Levels

Receptor	Highest Construction Noise Level[1] (dBA L_{eq})	Measured Daytime Ambient[2] (dBA L_{eq})	Cumulative (dBA L_{eq})	**Change (dBA)**
M1 – Dock near King Salmon	59	53	60	**+7**
M2 – Power plant property west of hill	59	49	59	**+10**
M3 – Humboldt Hill residential neighborhood	57	54	59	**+5**
M4 – Sea View Mobile Estates	55	49	56	**+7**
M5 – Loma Avenue commercial district	**53**	**N/A[3]**	**—**	**—**

Source: Ex. 1, Table 8.7-7 and Ex 200, 4.6-8.
1. Source: PG&E 2006a, AFC Table 8.7-7 and Staff calculations.
2. Source: PG&E 2006a, AFC Table 8.7-4: average of daytime hours for which data is available.
3. Not available since only one 20-minute nighttime sample was taken.

The evidence indicates that construction noise varies continually with time and is most appropriately measured by, and compared to, the L_{eq} (energy average) metric. Construction noise at the nearest sensitive receptors, the residences in King Salmon (M1), may reach 59 dBA. The ambient daytime L_{eq} level at this location, according to **NOISE AND VIBRATION Table 2,** above, is 53 dBA on average. The addition of construction noise to the ambient would result in 60 dBA, an increase of 7 dBA over the ambient level. As noted by the Applicant (Ex. 1, § 8.7.3.2.1), the source figures used to produce the above construction noise estimates are from studies conducted 21 to 26 years ago. The evidence shows that construction equipment has grown noticeably quieter in the intervening years. Thus the actual increase in the ambient noise level at this location would be considerably less than 7 dBA, or barely noticeable at these residences. Because the HBRP construction noise is temporary in nature and noisy construction activities would occur only during daytime hours, the noise

effect of plant construction on these nearest sensitive receptors is considered to be less than significant.

The ambient noise level of 54 dBA at monitoring location **M3** (Humboldt Hill residences), when combined with the predicted HBRP construction noise level of 57 dBA L_{eq} at this location, would result in 59 dBA L_{eq}. This is 5 dBA above the ambient level or even less due to the quieter nature of modern construction equipment and shielding effects from intervening structures. Likewise, the ambient noise level of 49 dBA at monitoring location **M4** (Sea View Mobile Estates), when combined with the predicted HBRP construction noise level of 55 dBA at this location, would result in 56 dBA, an increase of 7 dBA above the ambient. The record indicates that these increases in noise impacts are insignificant.

Pile driving would be necessary for construction of the HBRP. (Ex. 1, § 8.7.3.2.2.) The Applicant's response to a data request revealed projected pile driving noise impacts at nearby sensitive receptors (Ex.7, Data Response 33, Table DR33-1); see **NOISE AND VIBRATION Table 3** below**.**

NOISE AND VIBRATION Table 3
Projected Pile Driving Noise Impacts

Receptor	**Pile Driving Noise Level (L_{eq})**	**Measured Daytime Ambient (dBA L_{eq})**	**Cumulative (dBA L_{eq})**	**Change (dBA L_{eq})**	**Pile Driving Noise Level (L_{max})**
M1 – Dock near King Salmon	65	53	65	+12	**72**
M2 – Power plant property west of hill	65	49	65	+16	**72**
M3 – Humboldt Hill residential neighborhood	62	54	63	+9	**69**
M4 – Sea View Mobile Estates	60	49	60	+11	**67**
M5 – Loma Avenue commercial district	**59**	**—**	**—**	**—**	**66**

Source: Ex.7, Data Response 33, Table DR33-1, Ex. 200, p. 4.6-10.

Pile driving noise is projected to reach average levels of 65 dBA L_{eq} at the nearest residential receptors in King Salmon (M1) and peak levels up to 72 dBA. This represents an increase of 12 dBA over the daytime ambient noise level at that location, with momentary peaks up to 19 dBA above ambient levels. Pile driving noise would likewise reach levels of 62 dBA at the residences on Humboldt Hill (M3) and 60 dBA at the Sea View Mobile Estates (M4), increases over ambient of 9 and 11 dBA, respectively. While this would produce a noticeable impact, the evidence indicates that the temporary nature of the pile driving, and its limitation to daytime hours would result in impacts that are tolerable to residents and insignificant. (Ex. 200, p. 4.6-10.) In the event that actual construction noise should annoy nearby workers or residents, Conditions of Certification **NOISE-1** and **NOISE-2** establish a Notification Requirement and a Noise Complaint Process that requires the Applicant to resolve any problems caused by construction noise.

No new offsite linear facilities will be constructed to serve the HBRP so all construction noise related to linear facilities will occur on-site and has been accounted for in the Applicant's estimates of construction noise (see above). (Ex. 200, p. 4 6-9.)

2. Operation

The noise emanating from a power plant during normal operation is generally broadband, steady state in nature. Noise emissions from the HBRP will differ from the existing HBPP, and from most other large power plants, in that noise levels from the plant will tend to drop steadily along with the electrical load on the plant. Power plant noise diminishes chiefly when a unit or units are shut down. When the load on a single unit is reduced, noise from the unit does not drop appreciably. Noise reductions from the existing HBPP, for example, occur only when each of the 15-MW gas turbine units is shut down, or when 52-MW Unit 1

or 53-MW Unit 2 is shut down, as load diminishes. Noise from the HBRP, however, would decrease at each 10-MW reduction in load. (Ex. 200, p. 4.6-12.)

The HBRP would consist of 10 discrete 16.3-MW generating units operating in load following mode. (Ex. 1, §§ 1.4, 2.5.2, 2.5.16, 2.7.1, 9.3, 10.2.2.) Further, the engine cooling radiators are to be equipped with variable speed fans. When the weather is cooler, as at night or during the winter, these fans run more slowly, thus producing less noise. The Applicant has modeled plant noise emissions on a warm day and at night or on a cool winter day, at full load and at various levels of reduced electrical load. (Ex. 1, § 8.7.3.3.3; Tables 8.7-11, 8.7-12.) The modeled noise levels at the nearest sensitive receptor, M1, are summarized in **NOISE AND VIBRATION Table 4** below.

NOISE AND VIBRATION Table 4
Predicted Power Plant Noise Levels at M1

Plant Electrical Load	Power Plant Noise at M1 (dBA L_{eq})	
	Daytime	Nighttime/Winter Day
100% (145-163 MW)	52.0	49.0
90% (129-144 MW)	51.5	48.5
80% (113-128 MW)	51.0	48.0
70% (97-112 MW)	50.5	47.5
60% (81-96 MW)	49.8	46.8
50% (65-80 MW)	49.0	46.0
40% (49-64 MW)	48.0	45.0
30% (33-48 MW)	46.8	43.8
20% 17-32 MW)	45.0	42.0
10% (8-16 MW)	42.0	39.0

Source: Ex. 1, Table 8.7-11, Ex. 200, p. 4.6-13.

Using these predictions, power plant noise impacts at night under full load at the various sensitive receptors are projected in **NOISE AND VIBRATION Table 5**:

NOISE AND VIBRATION Table 5
Nighttime Power Plant Noise Impacts at Sensitive Receptors – Full Load

Receptor	Measured Nighttime Ambient Level (dBA L_{90})	Power Plant Noise Level (dBA L_{eq})	Cumulative (dBA L_{eq})	**Change (dBA)**
M1 – Dock near King Salmon	45	49	50	**+5**
M3 – Humboldt Hill residential neighborhood	40	47	48	**+8**
M4 – Sea View Mobile Estates	**34**	**44**	**44**	**+10**

Source: Ex. 1, § 8.7.3.3.3; Tables 8.7-4, 8.7-11, 8.7-12; and Ex. 200, p. 4.6-13.

The County noise ordinance states that an industrial project should not increase the ambient noise (L_{eq} or 24-hour average noise) by more than 5 dBA. Noise attributable to the HBRP at the average nighttime load of 30 MW would be five dBA or less over background (L_{90}) at M1, M3 and M4. If the HBRP were operating at 80 MW at night, the noise attributable to the project would not exceed background levels at the closest receptor (M1). However, as seen in **Noise and Vibration Table 5**, power plant noise could cause impacts at receptors **M3** and **M4** that may be considered significant, raising the nighttime ambient noise levels by eight to ten dBA respectively. (Ex. 1, § 8.7.3.3.3.)

Applicant's testimony established how extremely rare it is for the power plant to run at full load at night. A survey of historical operating data from the existing HBPP for the years 2003 through 2005 shows that plant load exceeded 49-MW (equivalent to four of the 10 HBRP gensets running) only 10 percent of nighttime hours, and exceeded 79-MW (equivalent to five of the 10 HBRP gensets running) only 0.7 percent of nighttime hours. The HBPP exceeded 80-MW less than one percent of the nighttime hours during the survey. (Ex. 1, § 8.7.3.3.3.)

Nevertheless, at full load (all 10 generator sets operating), maximum noise caused by the project would be similar to existing ambient levels on a 24 hour L_{eq} basis. The ambient L_{eq} at M1, for example, is 51 dBA, and maximum daytime

noise attributable to HBRP would be 52 dBA. The L_{eq} at M3 is 54, and noise attributable to the project would be 49 dBA. The ambient L_{eq} at M4 is 48 dBA and noise attributable to the HBRP at this location would be 47 dBA. This meets the County noise ordinance standard. In light of the evidence, the historical record demonstrates that nighttime exceedences have been so rare that they are not considered significant. (Ex. 1, § 8.7.3.3.3.)

NOISE AND VIBRATION Table 6 following, shows what power plant noise levels could actually be expected at the sensitive receptors:

NOISE AND VIBRATION Table 6
Power Plant Noise Impacts at Sensitive Receptors – Likely Nighttime Load

Receptor	Plant Load	Measured Nighttime Ambient Level (dBA L_{90})	Power Plant Noise Level (dBA L_{eq})	Cumulative (dBA L_{eq})	**Change (dBA)**
M1	49 MW	45	45	48	**+3**
	79 MW		46	49	**+4**
M3	49 MW	40	43	45	**+5**
	79 MW		44	45	**+5**
M4	49 MW	34	40	41	**+7**
	79 MW		**41**	**42**	**+8**

Source: Ex. 1, § 8.7.3.3.3; Tables 8.7-4, 8.7-11, 8.7-12; and Ex. 200, p. 4.6-13.

Likely power plant noise impacts on the nearest receptors, residences in King Salmon, are only three to four dBA; and on homes in the Humboldt Hill neighborhood, only five dBA. Such increases are slightly noticeable, and generally unlikely to prompt complaints. The evidence shows such increases as insignificant impacts. Noise impacts at the Sea View Mobile Estates (M4) may reach seven to eight dBA; such increases may be significant in some circumstances. However, the survey of historical operating data showed that the instances of relatively high output (79 MW) occurred during the months of November and December. It is highly likely that people in the affected residences have their windows closed at these times of the year, thus reducing noise

impacts even further. (Ex. 1, § 8.7.3.3.3.) The evidence indicates that noise from operation of the HBRP would constitute an insignificant impact on all affected residential receptors.

Two further noise receptors are the South Bay Union School, located at **M3**, and the Loma Avenue commercial district, at **M5**. Neither of these receptors is expected to be sensitive to nighttime noise levels; school classes and work occur during the daytime. The evidence shows that power plant noise at **M3**, the school, will raise daytime noise levels only one dBA which is nearly inaudible. Power plant noise impacts at **M5** are likely to be even less than at the school so the plant should be inaudible at **M5**.

One possible source of annoyance from the project could be strong tonal noises. Tonal noises are individual sounds (such as pure tones) that, while not louder than permissible levels, stand out in sound quality. To ensure that tonal noises do not cause annoyance, we have in addressed such tones in Condition of Certification **NOISE-4**. That condition also ensures that noise from the HBRP does not exceed projected levels. (Ex. 200, pp. 4.6-15, 4.6-12.)

In conclusion, the evidence establishes that a power plant such as the HBRP can be built and operated in compliance with all applicable noise and vibration LORS, and in a manner that will cause no significant adverse noise impacts on sensitive receptors. With the adoption of the Conditions of Certification, noise from construction and operation of the project would be limited to levels that would produce no significant adverse noise impacts, directly, indirectly or cumulatively. (Ex. 200, p. 4.6-17.)

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the HBRP will create noise.

2. Construction and operation of the HBRP will not significantly increase noise levels above existing ambient levels in the surrounding community.

3. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by employing measures such as sound reduction devices and limiting construction to daytime hours in accordance with local noise control laws and ordinances.

4. Measures contained in the Conditions of Certification and compliance with local LORS will assure that pile driving activities are mitigated to below a level of significance.

5. Isolated nighttime noise attributable to the HBRP may occasionally exceed 5 dBA over ambient noise levels, although the record shows that the frequency of these exceedences is so rare that it is not significant.

6. Operational noise will not cause significant adverse impacts to nearby residences.

7. Measures contained in the Conditions of Certification will protect workers from injury due to excessive noise levels.

8. The HBRP will not create ground or airborne vibrations which cause significant off-site impacts.

9. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

The Commission, therefore, concludes that implementation of the following Conditions of Certification ensure that the HBRP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of this Decision, and that the project will not cause indirect, direct, or cumulative significant adverse noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within three-quarter 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, and include that telephone number in the above notice. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

Noise Complaint Process

NOISE-2 Throughout the construction and operation of the HBRP, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;

- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant, stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 5 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form 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 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program, and a statement, signed by the project owner's project manager, verifying that the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program and the project owner's project manager's signed statement. The project owner shall make the program available to Cal-OSHA upon request.

Noise Restrictions

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to full load plant operation during the quietest four hours of the nighttime to exceed an average of 49 dBA L_{eq} measured at monitoring location M1 in the community of King Salmon, an average of 47 dBA L_{eq} measured at monitoring location M3 on Humboldt Hill, or an average of 44 dBA L_{eq} at monitoring location M4 at the Sea View Mobile Estates. No new pure-tone components may be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (*e.g.,* 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.

A. When the project first achieves a sustained output of 95 percent or greater of rated capacity, the project owner shall conduct a community noise survey at monitoring locations M1, M3 and M4, or at closer locations acceptable to the CPM. This survey shall be performed during power plant full load operation or some other

level of operation deemed feasible and acceptable to the CPM, and shall also include measurement of one-third octave band sound pressure levels to determine whether new pure-tone noise components have been caused by the project.

B. If the results from the noise survey indicate that the power plant average noise level (L_{eq}) at any affected receptor site exceeds the above value, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 30 days of the project first achieving a sustained output of 95 percent or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 Following the project first achieving a sustained output of 95 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

Construction Time Restrictions

NOISE-6 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times of day delineated below:

Any day – Monday through Sunday, 7 a.m. to 8 p.m.

Haul trucks and other engine-powered equipment shall be equipped with mufflers that meet all applicable regulations. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Humboldt Bay Repowering Project
(06-AFC-7)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number:

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____
Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____
Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____(copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

E. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings. (Cal. Code Regs., tit. 14 § 15382, Appendix G.)

The evidence presented on this topic was undisputed. (6/17/08 RT 47-49; Exs. 1, 13, 36, 38, 42, 73 and 200, pp. 4.12-1 to 4.12-49.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The HBRP will be constructed on a parcel with terrain that varies from submerged and low tidal land protected by dikes and tide gates, to a high bluff along the southwestern boundary. The property currently contains the 50-year old Humboldt Bay Power Plant, cooling water intake and discharge canals, various large cylindrical storage tanks, emergent marshes, seasonal wetlands, and Buhne Slough. (Ex. 200, p. 4.12-3.)

In the area of the project site is the Pacific Ocean two miles to the west. Humboldt Hill (elevation 500 feet), located 1.5 miles to the southeast contains several small residential neighborhoods. The Elk River Wildlife Area is to the northeast. Coastal hills are 3-4 miles to the east and extend from the north to the southeast. The tops of these hills range from 1,500 to 2,500 feet in elevation. Further east is a mostly inaccessible mountainous area. Land uses in the vicinity can generally be described as rural residential, port-related industrial, agricultural, and recreational uses. To the southwest of the PG&E property is King Salmon Resort, a bay front community established consisting of several hundred new and old single family residences many with water access to the

bay. King Salmon Resort includes public and private recreation facilities that include a public beach, picnic and recreational vehicle camping area, a boat marina, fresh seafood markets, and a restaurant. To the east is U.S. Highway 101. (Ex. 200, p. 4.12-4.)

The existing HBPP is a 105-MW natural gas-fired power plant that covers a 19-acre area of the PG&E property. It operates two 100-foot tall steam boiler turbine-generators (Units 1 and 2) with 120-foot tall exhaust stacks, two 15-MW diesel-fueled gas turbine mobile emergency power plants (MEPPs), fuel tanks, administration and service buildings, and an inoperable 63-MW nuclear-powered boiling water reactor generating unit, Unit 3, which was shutdown in 1976. A segment of public trail maintained by PG&E and the Humboldt Bay Harbor Recreation and Conservation District, runs along the shoreline of the PG&E property. (Ex. 200, p. 4.12-4.)

The HBRP's most publicly visible structures would include ten 100-foot tall, seven-foot diameter exhaust stacks, three 78-foot tall tubular steel electric transmission poles, a 46-foot tall by 62-foot diameter diesel tank, and a 45-foot tall by 90- foot long by 230-foot wide engine hall. (Ex. 200, p. 4.12-4.)

A visual resources analysis has an inherently subjective aspect. However, the evidence indicates that the use of an ascertainable methodology is also necessary to accurately evaluate visual impacts. The evidence describes this methodology as including an assessment of compliance with applicable laws, the extent of any alteration to the existing viewshed including blockage of desirable views, creation of a decrease in visual quality, and the introduction of a substantial change to nighttime or daytime lighting levels. The type of visual change, duration of impact, viewer sensitivity, and number of viewers are additional factors relevant to a visual resources analysis. (Ex. 200, p. 4.12-6.)

To assess the significance of a visual impact, it is necessary to determine whether the project would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or night time views in the area. (14 Cal. Code Regs., App. G.)

1. Scenic Vistas

A scenic vista is defined as a distant view through and along a corridor or opening that exhibits a high degree of pictorial quality. There are no scenic vistas from any of the key observations point (KOP) viewsheds. The proposed project would not cause a significant visual impact to a scenic vista. (Ex. 200, p. 4.12-7.)

2. Scenic Resources

A scenic resource includes a unique water feature (waterfall, transitional water, part of a stream or river, estuary); a unique physical geological terrain feature (rock masses, outcroppings, layers or spires); a tree having a unique visual/historical importance to a community (a tree linked to a famous event or person, an ancient old growth tree); historic building; or a designated federal scenic byway or state scenic highway corridor. (Ex. 200, p. 4.12-7.)

The record indicates that there are no officially designated state scenic highways in Humboldt County. Humboldt Bay is California's second largest natural bay and estuary, and is the only deep-water port on the North Coast. Portions of the bay can be seen from Humboldt Hill, Spruce Vista Point, and South Spit Wildlife

Area, however, the visible portions of the bay are not identified as a scenic resource. The proposed project would not damage views of an identified scenic resource and would not cause a significant visual impact to a scenic resource. (Ex. 200, pp. 4.12-7 to 4.12-8.)

3. Visual Character or Quality

The evaluation of record under this criterion includes an analysis of the impacts of the construction of the project and its appurtenant facilities, as well as the effect of the completed project, including the plumes, upon the existing viewshed.

Construction activities for the project would occur over an approximate 18-month period. Public visibility of the construction site and related activities from locations at U.S. Highway 101, King Salmon Avenue, the public shoreline trail, Loma Avenue and Spruce Vista Point would gradually occur as project structures are erected that exceed the height of onsite trees and structures. During the construction period, materials and heavy equipment on the laydown area would also be publicly visible to viewers from the public shoreline trail and Spruce Vista Point. (Ex. 200, p. 4.12-9.)

There are now ornamental plantings of gum trees, Monterey cypress, Monterey pine, and irrigated hedgerows of Rhododendron underlain with sweet vernal grass along the east side of the intake canal and Buhne Slough. The trees provide partial visual screening of existing power plant structures to the public from U.S. Highway 101, King Salmon Avenue, and Loma Avenue. The construction access road and primary construction employee parking area for the HBRP would be located along the east side of the intake channel. (Ex. 1, p. 8.13-30.) The evidence discloses that while many of the ornamental plantings may be removed during construction, the area will be restored and revegetated with native species after construction is complete. (Ex. 1, p. 8.2-49; Ex. 200, pp. 4.12-9 to 4.12-10.)

The project includes the reuse of another area that had previously been used for vehicle parking years ago. The remote parking area would be used when the number of construction workers exceeds the number of available spaces in the primary parking area. This is estimated to take place during nine months of the construction period. The reuse of the area involves the removal of the existing fence, onsite debris and vegetation (weeds), the spreading of new aggregate surfacing, and installation of a new six-foot tall chain link fence on its perimeter. Construction worker vehicles would be publicly visible on the 0.96 acre area from King Salmon Avenue and from residences in King Salmon Resort. The parking area would be approximately 60 feet from the nearest residence. The visible parking of vehicles on the remote parking area would not visually dominate the streetscape of King Salmon Avenue due to existing trees and shrubs to the east and in the backdrop to the north. (Ex. 200, p. 4.12-10.)

Project construction activities would take place mostly during daylight hours. Lighting that may be required to facilitate nighttime construction activities would, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. The use of shielded directional exterior lights and fixtures of a non-glare type on the project site, in the construction laydown area, the remote parking area and along the pedestrian trail would minimize offsite light and glare impacts introduced by construction activities. (Ex. 200, p. 4.12-11.)

Existing pole and light fixtures in the parking area and adjacent pedestrian trail are to be replaced with fixtures that are hooded and directed downward. Lights used in the parking area would be visible to residences in King Salmon Resort. The Applicant proposes that in addition to using hooded fixtures, they will add shields to the lights where appropriate to further mitigate the visibility of the lights from the King Salmon Avenue residents. Measures in Condition of Certification **VIS-1 and VIS-2** will mitigate the lighting impacts during construction to ensure a less than significant visual impact. (Ex. 200, p. 4.12-10.).

The Applicant proposes to bury project related linear pipelines. With the burying of pipelines and the restoration of the ground surfaces, the linear routes and parking and laydown areas would not create a change to the existing visual condition. Condition of Certification **VIS-2** provides for the restoration of ground surfaces affected by construction activities on the primary and remote parking areas, construction access road, laydown area and pipe alignments to ensure that these construction activities are temporary in nature and would not result in a long-term visual degradation. (Ex. 200, p. 4.12-11.)

4. Operation Impacts

The project would introduce to the area a 90-foot tall rectangular engine hall, four large off-white colored cylinder fuel tanks, a steam turbine-generator structure and its two groups of five rust-colored steel exhaust stacks (100-feet tall), the switchyard, steel vertical poles, overhead wires, an 80-foot lattice tower, and two diesel-fueled gas turbine mobile emergency power plants. A 46-foot tall diesel storage tank would be located east of the engine hall. Project structures would be painted a neutral, non-reflective gray color. (Ex. 200, p. 4.12-13.)

The existing visible physical environmental setting is evaluated from a fixed vantage point (called a “Key Observation Point” or “KOP”) and the visual change introduced by the proposed project to the view from that KOP. The view as seen from the KOP is referred to as the viewshed. KOPs are selected to be representative of the most critical viewshed locations from which the project would be seen. The six KOPs used in this analysis are:

- KOP 1 – Northbound U.S. Interstate 101 Looking West;
- KOP 2 – King Salmon Avenue Looking North;
- KOP 3 – Humboldt Bay Public Shoreline Trail Looking South;
- KOP 4 – Loma Avenue on Humboldt Hill Looking Northwest;
- KOP 5 – Spruce Vista Point Looking Southwest; and,

- KOP 6 – South Spit Wildlife Area Looking Across Humboldt Bay.

(Ex. 200, pp. 4.12-6 to 4.12-7.)

KOP 1 - Northbound U.S. Interstate 101 Looking West

Viewers at this KOP location would mainly consist of motorists on U.S. Highway 101. The KOP 1 viewshed does not include a scenic resource or vista. There is no scenic focal point or unique feature in the viewshed that draws the viewer's eye (*e.g.,* rock outcroppings, historic building, etc.). The HBPP's 100-foot steam turbine-generator structure and exhaust stacks are a focal point in the viewshed. Viewers at this KOP would be exposed to a short duration, relatively unobstructed view of the potential project. The posted speed limit along this segment of the highway is 65 miles per hour so motorists traveling northbound U.S. Hwy. 101 through the KOP 1 viewshed would be exposed to the view for no more than 10 to 20 seconds. The evidence indicates that the overall visual sensitivity for motorists would be considered moderate from KOP 1 in light of the moderate visual quality, moderately low viewer concern, and a moderately high overall viewer exposure. (Ex. 200, p. 4.12-12.)

The introduction of HBRP structures would not substantially degrade the existing viewshed at KOP 1. When considering the moderate overall visual sensitivity and the moderate overall visual change, the introduction of the proposed project's publicly visible structures would generate a less than significant visual impact from this KOP. (Ex. 200, p. 4.12-13.)

KOP 2 – King Salmon Avenue Looking North

Viewers at this KOP location would mainly consist of residents traveling to and from King Salmon Resort. The viewshed does not include a designated scenic resource or vista. From this KOP, viewers would have a relatively unobstructed view of the project site. Viewers would be exposed to a short duration, relatively unobstructed view of the potential project. The evidence indicates that the duration of view for individuals traveling on King Salmon Avenue through the

KOP 2 viewshed to be 20 to 60 seconds which is considered moderate. Overall exposure for viewers on King Salmon Avenue is considered to be moderate. (Ex. 200, p. 4.12-14.)

Proposed landscaping would replace and expand the amount of screening seen from King Salmon Avenue. (Ex. 1, pp. 8.13-13.) Landscaping would include the installation of native, evergreen trees and shrubs to screen views of the project and the existing facilities. The approximate maximum height of the trees would be 65-feet and spread a canopy of 60 feet. Condition of Certification **VIS-5** provides for the submittal and approval of a landscaping plan. (Ex. 200, p. 4.12-15.)

The introduction of HBRP's structures would not substantially degrade the existing viewshed at KOP 2. When considering the moderate overall visual sensitivity and the moderate overall visual change, the introduction of the proposed project's publicly visible structures would generate a less than significant visual impact at this KOP. (Ex. 200, p. 4.12-15.)

KOP 3 – Humboldt Bay Public Shoreline Trail Looking South

From this KOP, viewers would have an unobstructed view of the project site and the construction laydown area. The project's visibility and viewer exposure is considered moderately high. Viewers would tend to be directed towards the bay and away from the project. There is no scenic focal point in the viewshed. The HBPP's current 100-foot tall steam boiler turbine generator with its plume emission tends to draw the viewer's eye. The estimated level of viewer concern towards preserving the existing KOP 3 viewshed is considered to be low. (Ex. 200, p. 4.12-16.)

The landscape plan shows new trees being planted along the north boundary of the PG&E property, east of the discharge canal. The approximate maximum height of the trees would be 65-feet and spread of canopy 60-feet at maturity.

Over time, as the project's landscaping matures, the visual impact at KOP 3 would be reduced. (Ex. 200, p. 4.12-16.)

The evidence indicates that the introduction of the project's publicly visible structures would not substantially degrade the existing viewshed at KOP 3. When considering the moderately low overall visual sensitivity and the high overall visual change, the introduction of the project structures would generate a less than significant visual impact at this KOP. (Ex. 200, p. 4.12-17.)

KOP 4 – Loma Avenue on Humboldt Hill Looking Northwest

Viewers at this KOP location would mainly consist of residents on Humboldt Hill. Humboldt Hill has several residential neighborhoods. The residential enclave at this KOP location consists of approximately 40-60 residences with a relatively unobstructed view of the project site. This number of viewer exposures would be considered moderately high because residential viewers are considered to be highly sensitive to modifications of a viewshed. From this KOP, viewers have a relatively unobstructed view of the project site. (Ex. 200, p. 4.12-17.)

However, the proportionate size relationship of the visible project structures to other man-made and natural elements would occupy a small portion of the total field-of-view of KOP 4. The structures would visually appear co-dominant when compared to other elements currently in the KOP 4 view. Also, a small portion of a view of Humboldt Bay would be disrupted by the introduction of project structures, specifically the exhaust stacks; however, the evidence shows that this view disruption is considered to be moderately low. Therefore, the dominance of the structures in the KOP 4 viewshed is considered to be moderately low. (Ex. 200, p. 4.12-18.)

Thus, the evidence indicates that the introduction of project structures would not substantially degrade the existing viewshed at KOP 4. When considering the moderately high overall visual sensitivity and the moderate overall visual change,

the introduction of the proposed project's publicly visible structures would generate a less than significant visual impact at this KOP. (Ex. 200, p. 4.12-18.)

KOP 5 – Spruce Vista Point Looking Southwest

Viewers at this KOP location would involve individuals who have diverted from U.S. Highway 101 to read the Humboldt Harbor Historical District landmark (marker) and see an elevated open view of Humboldt Bay. The view disruption is considered to be low. From this KOP, new power plant structures would block a view of existing power plant structures, trees and a small amount of sky. No view of Humboldt Bay would be disrupted by project structures from this KOP. (Ex. 200, p. 4.12-19.)

The overall visual change caused by the introduction of project structures into the viewshed is considered to be moderate as a result of a high visual contrast, moderately low visual scale, and a low view disruption. The introduction of project structures would not substantially degrade the existing viewshed at KOP 5. When considering the moderate overall visual sensitivity and the moderate overall visual change, the introduction of the proposed project's publicly visible structures would generate a less than significant visual impact at this KOP. (Ex. 200, p. 4.12-19.)

KOP 6 – South Spit Wildlife Area Looking Across Humboldt Bay

Viewers at this KOP location would consist of individuals engaged in passive recreational activities such as bird watching, hiking, and fishing. The estimated level of viewer concern towards preserving the KOP 6 viewshed is considered high. However, from this KOP, viewers would have a disrupted and distant view of the project site. The visibility of the proposed power plant's structures at this KOP would be moderately low. Viewers at this KOP location would be exposed to an extended duration view of power plant structures. Overall exposure for viewers at this KOP is considered to be moderate. (Ex. 200, pp. 4.12-19 to 4.12-20.)

The proportionate size relationship of the visible project structures to other man-made and natural elements would occupy a very small portion of the total field-of-view of KOP 6. The structures would visually appear subordinate when compared to other elements in the KOP 6 view, so the dominance of the structures in the KOP 6 viewshed is considered low. Therefore, the introduction of project structures would not substantially degrade the existing viewshed at KOP 6. When considering the moderately high overall visual sensitivity and the low overall visual change, the introduction of the proposed project's publicly visible structures would generate a less than significant visual impact at this KOP. (Ex. 200, pp. 4.12-20 to 4.12-21.)

The HBRP interconnection would include three transmission lines that would all be located within the PG&E property. All three tie lines would be interconnected to the high sides of their respective generator step-up transformers from take-off structures near the generator switchyard to existing structures in the Humboldt Bay Power Plant Substation. Each tie line would require the installation of one new steel pole with bypass switches and would be composed of only two spans. (Ex. 12, p. 5-1-11.) The degree of view blockage by the steel poles and overhead wires would be low, so the onsite overhead transmission lines would introduce a less than significant visual disturbance. (Ex. 200, p. 4.12-21.)

The HBRP would use an air radiator cooling array and does not involve the use of a wet cooling tower. In addition, as a result of the very high exhaust temperature of the proposed project's lean burn engines and generators, under normal weather conditions, there is no potential for visible water vapor plumes to form above the exhaust stacks. (Ex. 200, pp. 4.12-21 to 4.12-22.)

The HBRP would introduce new nighttime lighting to the property due to safety and security needs. Lighting would be directed onsite; and would be shielded from public view using non-glare fixtures and switches, sensors, and timers to minimize the time that lights operate. Condition of Certification **VIS-4** requires

submittal and approval of a lighting control plan. With the effective implementation of the proposed light mitigation measures, the HBRP would not result in a substantial new source of light that could adversely affect existing nighttime views. Light and glare impacts generated by the HBRP in addition to HBPP and the proposed Independent Spent Fuel Storage Installation projects are not anticipated to be cumulatively considerable. (Ex. 200, pp. 4.12-22 to 4.12-23.)

The Humboldt County Zoning Ordinance (Section 313-3.4 Maximum Structure Height) specifies a maximum height of 50 feet, plus one foot for each foot of front yard setback over 50 feet, up to a maximum height of 75 feet. However, to improve air dispersion characteristics (as discussed in the **Air Quality** section of this Decision), the HBRP stack height was changed from 75 feet to 100 feet. Because the Coastal Commission is responsible for issuing Coastal Development Permits in its retained jurisdiction, Humboldt County's LCP and zoning ordinance would not directly apply to this project.(see Chapter 3, Section 30251 of the Coastal Act). (Ex. 200, pp. 4.5-15, 4.12-32 to 4.12-33.)

The evidence, in the **Land Use** section of this Decision, addresses the proposed 100-foot stack height in the context of Section 30251 and concluded that it (1) would not substantially degrade the current setting along the ocean, (2) would not alter existing landforms, and (3) would be visually compatible with the character of the surrounding area. As a comparison to existing conditions at HBPP, the two exhaust stacks for Units 1 and 2 are 120 feet high. Therefore, allowing the stacks to exceed the 75-foot local height restriction would neither impair the integrity of the zoning district or the surrounding area, nor violate any applicable LORS. (Ex. 200, pp. 4.5-15 to 4.15-16.)

The photo simulations of the completed power plant provided by the Applicant show the use of a surface treatment on major project structures and buildings consisting of a neutral grey color and low gloss finish, and rust color stacks. All

new structures including permanent equipment and fencing will be treated or painted with a non-reflective finish so as to reduce potential glare effects. (Ex. 1, p. 8.13-19.) With effective implementation of the Applicant's proposed surface treatment, project structures would not be a source of substantial glare that could adversely affect daytime views. Condition of Certification **VIS-3** requires submittal of a surface treatment plan for power plant structures and the electric transmission line poles to ensure impacts are mitigated. (Ex. 200, p. 4.12-22.)

The record contains uncontroverted evidence that the introduction of the HBRP to the KOP 1-6 viewsheds will not generate a significant cumulative visual effect specific to aesthetics or preservation and protection of sensitive visual resources.

FINDINGS AND CONCLUSIONS

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

1. The HBRP will be located in the "Industrial/Coastal-Dependent" zone district within unincorporated Humboldt County, which has a mixture of residential, recreational, commercial and industrial use.
2. The project will not have a substantial adverse effect on an identified scenic vista or a scenic resource from the selected key observation points.
3. The project site does not have frontage on, or traverse a segment of a road recognized as a National Scenic Byway or All American Road, or a State Scenic Highway.
4. The project will not generate a significant visual impact to the viewsheds at the selected key observations points with the effective implementation of the recommended Conditions of Certification.
5. The project will not substantially degrade the existing visual character or quality of the site and its surroundings with the effective implementation of the Conditions of Certification.

6. The project will not generate a significant new source of light or glare to nighttime or daytime views with the effective implementation of the Conditions of Certification.

7. There would be no publicly visible water vapor plumes emitted by the project at operation during normal weather conditions based on the project owner's proposed facility design.

8. With the effective implementation of the landscaping and lighting design/construction measures described by the Applicant and Conditions of Certification, the incremental effects of the construction and operation of the project will not result in a cumulatively considerable visual impact to adjacent land uses.

9. Implementation of the Conditions of Certification will ensure that the project's visual impacts are less than significant.

10. The HBRP will not create or contribute to the creation of significant adverse cumulative visual impacts.

11. Implementation of the Conditions of Certification, below, will ensure that HBRP complies with all applicable laws, ordinances, regulations, and standards relating to visual resources.

We therefore conclude that, with implementation of the following Conditions of Certification, the HBRP project will not cause any significant adverse direct, indirect, or cumulative impacts to visual resources.

CONDITIONS OF CERTIFICATION

Construction Lighting

VIS-1 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

A. All lighting shall be of minimum necessary brightness consistent with worker safety and security;

B. All fixed position lighting shall be shielded/hooded, to direct light downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries);

C. Wherever feasible and safe and not needed for security, lighting shall be kept off when not in use; and

D. If the project owner receives a complaint about construction lighting, the project owner shall notify the Compliance Project Manager (CPM) and shall use the complaint resolution form shown in the General Conditions section of the Compliance Plan to record each lighting complaint and to document the resolution of that complaint. The project owner shall provide a copy of each complaint form to the CPM.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection.

If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 15 days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

Within 48 hours of receiving a lighting complaint, the project owner shall provide to the CPM a report of the complaint, a proposal to resolve the complaint, and a schedule for implementation of the proposal. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. The project owner shall provide a copy of the completed complaint resolution form to the CPM in the next Monthly Compliance Report.

Surface Restoration

VIS-2 The project owner shall remove all evidence of construction activities, and shall restore the ground surface to the original condition or better condition, including the replacement of any vegetation or paving removed during construction where project development does not preclude it. The project owner shall submit to the CPM for review and approval a surface restoration plan the proper implementation of which will satisfy these requirements. The project owner shall complete surface restoration within 60 days after the start of commercial operation. If the identified ground surface area has been specifically included in an approved biological resources mitigation plan by the California Energy Commission the timeframe specified in the mitigation plan for completion of restoration of the ground surface area shall apply.

Verification: At least 60 days prior to the start of commercial operation, the project owner shall submit the surface restoration plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the surface restoration plan are needed, within 30 days of receiving that notification, the project owner shall submit to the CPM, a plan with the specified revisions.

The project owner shall complete surface restoration within 60 days after the start of commercial operation unless the timeframe is specifically otherwise in a biological resources mitigation plan approved by the California Energy Commission. The project owner shall notify the CPM within seven days after completion of surface restoration that the restoration is ready for inspection.

Surface Treatment of Project Structures and Buildings

VIS-3 The project owner shall color and finish the surfaces of all project structures and buildings visible to the public to ensure that they minimize visual intrusion and contrast by blending with the landscape, minimize glare, and comply with local design policies and ordinances. The transmission line conductors shall be non-specular and non-reflective and the insulators shall be non-reflective and non-refractive.

The project owner shall submit a surface treatment plan to the CPM for review and approval. The surface treatment plan shall include:

A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

B. A list of each major project structure and building (*e.g.,* building, tank, pipe, and wall; transmission line towers and/or poles; and fencing), specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;

C. One set of color brochures or color chips showing each proposed color and finish;

D. A specific schedule for completing the treatment; and

E. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not request vendor surface treatment of any buildings or structures during their manufacture, or perform final field treatment on any buildings or structures, until the project owner has received treatment plan approval by the CPM.

The project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection and shall submit one set of electronic color photographs from the selected KOPs 1, 2, and 3 showing the “as built” surface treated structures and buildings.

Verification: At least 45 days prior to applying vendor color(s) and finish(es) for structures or buildings to be surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval, and simultaneously to the Executive Director of the California Coastal Commission for review. The project owner shall allow the Executive Director of the California Coastal Commission 30 days to provide comment on the submitted surface treatment plan.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the Executive Director of the California Coastal Commission requesting their review of the submitted surface treatment plan.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

If the CPM determines that the plan requires revision, the project owner shall provide to the Executive Director of the California Coastal Commission a plan with the specified revision(s) for review before the plan is implemented.

Within 90 days after the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection; and shall submit one set of electronic color photographs from the selected KOPs 1, 2, and 3, at the least showing the "as built" surface treated structures and buildings.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify the condition of the surfaces of all structures and buildings at the end of the reporting year, major maintenance activities that occurred during the reporting year, and the schedule of major maintenance activities for the next year.

Permanent Exterior Lighting

VIS-4 To the extent feasible, consistent with safety and security considerations and commercial availability, the project owner shall design and install all permanent exterior lighting such that light fixtures do not cause obtrusive spill light beyond the project site; lighting does not cause excessive reflected glare; direct lighting does not illuminate the nighttime sky; illumination of the project and its immediate vicinity is minimized, and lighting complies with local policies and ordinances. The project owner shall submit to the CPM for review and approval and simultaneously to the Executive Director of the California Coastal Commission for review and comment, a lighting management plan that includes the following:

A. A process for addressing and mitigating lighting related complaints;

B. Lighting shall incorporate commercially available fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

C. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

D. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 45 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to determine the required documentation for the lighting management plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the Executive Director of the California Coastal Commission for review, a lighting management plan. The project owner shall allow the Executive Director of the California Coastal Commission 30 days to provide comment on the submitted lighting plan.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the Executive Director of the California Coastal Commission requesting their review of the submitted lighting plan.

The project owner shall provide the Executive Director of the California Coastal Commission comments to the CPM at least 10 days prior to the date lighting materials are ordered.

If the CPM determines that the lighting management plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval. Any modifications to the lighting management plan must be submitted to the CPM for review and approval.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting management plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been installed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule

for implementation. The project owner shall notify the CPM within 10 days after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

Landscaping

VIS-5 The project owner shall install landscaping consistent with the draft landscape plan, dated February 7, 2007, shown on **Visual Resources Figures 11a** and **Figure 11b**. The project owner shall submit to the CPM for review and approval, and simultaneously to the Executive Director of the California Coastal Commission for review and comment, a landscaping plan.

The Executive Director of the California Coastal Commission shall have 30 calendar days to review the landscaping plan and provide written comments to the project owner. The project owner shall provide a copy of the Executive Director of the California Coastal Commission's written comments to the CPM for review and approval.

The project owner shall not implement the landscaping 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.

Verification: Prior to commercial operation and at least 45 days prior to installing the landscaping, the project owner shall provide a copy of the landscaping plan to the Executive Director of the California Coastal Commission for review. The project owner shall allow the Executive Director of the California Coastal Commission 30 days to provide comment on the submitted landscaping plan.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the Executive Director of the California Coastal Commission requesting their review of the submitted landscaping plan.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM, and the Executive Director of the California Coastal Commission a landscaping plan with the specified revision(s) for review, and to the CPM for final approval before the plan is implemented.

The project owner shall notify the CPM within 7 days after completing installation of the landscaping, that the landscaping is ready for inspection.

Signage

VIS-6 The project owner shall install minimal signage visible to the public, that shall a) have unobtrusive colors and finishes that prevent excessive glare;

and b) be consistent with the policies stipulated in the certified Humboldt County Local Coastal Program if the Humboldt Bay Redevelopment Project (HBRP) signage is to be located within the state designated coastal zone, or the applicable ordinances of the county of Humboldt if the signage is to be located outside of the designated state coastal zone. The design of any signs required by safety regulations shall conform to the criteria established by those regulations. The project owner shall submit signage for the project to the CPM for review and approval and simultaneously to the Executive Director of the California Coastal Commission, or the Humboldt County Community Development Services Department, Planning Division, if applicable, for review and comment.

The Executive Director of the California Coastal Commission, or the Humboldt County Community Development Services Department, Planning Division, if applicable, shall have 30 calendar days to review the HBRP signage and provide written comments to the project owner. The project owner shall provide a copy of the Executive Director of the California Coastal Commission and the Humboldt County Community Development Services Department, Planning Division written comments to the CPM for review.

The project owner shall not install any signage until the project owner receives approval from the CPM.

Verification: Prior to the start of commercial operation and at least 60 calendar days prior to installing signage, the project owner shall submit HBRP signage to the CPM for review and approval and simultaneously to the Executive Director of the California Coastal Commission, or the Humboldt County Community Development Services Department, Planning Division, if applicable, for review and comment.

The project owner shall allow the Executive Director of the California Coastal Commission, or the Humboldt County Community Development Services Department, Planning Division 30 days to provide comment on the submitted HBRP signage.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the Executive Director of the California Coastal Commission, or the Humboldt County Community Development Services Department, Planning Division requesting their review of the submitted HBRP signage.

If the CPM determines that HBRP signage requires revision, the project owner shall provide to the CPM the signage with the specified revision(s) for review and approval by the CPM before any signage visible to the public is installed.

The project owner shall provide the CPM with electronic color photographs within 30 days after completing installation of signage.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

APPENDICES

AIR QUALITY

Applicable Law	*Description*
FEDERAL	**U.S. Environmental Protection Agency (U.S. EPA)**
CAAA of 1990, 40 CFR 50	National Ambient Air Quality Standards (NAAQS).
CAA Sec. 171-193, 42 USC 7501	New Source Review (NSR) requires permits for new stationary sources (see NCUAQMD Rule 110).
40 CFR 52.21	Prevention of Significant Deterioration (PSD) requires major sources to obtain permits for emissions of attainment pollutants. PSD review requires the new or modified source to achieve the Best Available Control Technology (BACT) and to demonstrate that significant deterioration of ambient air quality would not occur. NCUAQMD implements the PSD program with U.S. EPA oversight (also NCUAQMD Rule 110). The existing HBPP is a major source and PSD review applies to the HBRP, which would be a major modification of the source.
40 CFR 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (also NCUAQMD Rule 104.11). Requires reduction compression ignition engine emissions to less than 1.2 grams of NOx per brake-horsepower-hour (g/bhp-hr) and 0.11 g/bhp-hr of diesel PM (DPM, according to U.S. EPA Method 5). Requires the emergency standby generator engine and fire water pump engine to meet U.S. EPA Tier 3 requirements.
40 CFR 70, CAA Sec 401, 42 USC 7651	Title V Operating Permit program requires filing of an application within one year after start of operation of modified or new sources (also NCUAQMD Regulation V).
40 CFR 72, CAA Sec 401 42 USC 7651	Title IV Acid Rain program requires federal Title IV permit and compliance with acid rain provisions. Applicable only to electrical generating units greater than 25 MW; not applicable to individual generating units at HBRP.
STATE	**California Air Resources Board and Energy Commission**
Health and Safety Code (HSC) Section 40910-40930	Permitting of source needs to be consistent with approved Clean Air Plan. The 1984 NCUAQMD New Source Review program of Rule 1-200(c) and 1-220 is consistent with the applicable air quality management plan, the State Implementation Plan (SIP).
California Health & Safety Code Section 41700	Public Nuisance Provisions – outlaws discharge of air contaminants causing nuisance, injury, detriment or annoyance
Title 17 CCR 93115	Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) Engines. Establishes operating requirements and emission standards for emergency standby diesel-fueled CI engines [17 CCR 93115.6] and emission standards

	for stationary prime diesel-fueled CI engines [17 CCR 93115.7]. The emission standard is 0.15 g/bhp-hr DPM for emergency engines used fewer than 50 hours per year for maintenance and engine testing. This standard applies to the Wärtsilä 18V50DF engines in emergency use (as defined in the ATCM). The emission standard of 0.01 g/bhp-hr DPM for prime engines does not apply to the Wärtsilä 18V50DF engines when operating in natural gas/ diesel pilot mode. All compression ignition engines proposed for HBRP are subject to the ATCM.
LOCAL	**North Coast Unified Air Quality Management District**
NCUAQMD Rule 102	Required Permits. Requires an Authority to Construction (ATC) and Permit to Operate (PTO) be issued by the Air Pollution Control Officer (APCO).
NCUAQMD Rule 104	Prohibitions. Prohibits excessive visible emissions (Rule 104.2), particulate matter from combustion (Rule 104.3.4.1), and sulfur dioxide emissions (Rule 104.5).
NCUAQMD Rule 110	NSR and PSD. Requires implementation of BACT that is technologically feasible and determined by the Air Pollution Control Officer to be cost-effective (Rule 110.5.1). Requires offsets be provided so new or modified sources cause no net increase (Rule 110.1.2). Requires air quality impact analysis that demonstrates that new or modified sources do not cause or worsen the violation of an ambient air quality standard (Rule 110.5.5 and 110.7). Requires power plants be subject to Preliminary and Final Determination of Compliance (PDOC and FDOC, respectively) by the NCUAQMD Air Pollution Control Officer with public notice and public comment. The NCUAQMD issued the PDOC on October 24, 2007 (NCUAQMD 2007) and the FDOC on April 15, 2008 (NCUAQMD 2008a). The FDOC serves as an ATC only after the Energy Commission certifies HBRP (Rule 110.9).
NCUAQMD Rule 1-200(c) and 1-220	1984 NSR requirements (approved as part of SIP), consistent with federal PSD review and current Rule 110.

ALTERNATIVES

Applicable Law	*Description*
California Environmental Quality Act	The Energy Commission is required by agency regulations to examine the "feasibility of available site and facility alternatives to the Applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment." (Cal. Code Regs., tit. 20, § 1765). The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations, Section 15126.6(a), requires an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." In addition, the analysis must address the No Project Alternative. [Cal. Code Regs., tit. 14, § 15126.6(e).] The analysis should identify and compare the impacts of the various alternatives, but analysis of alternatives need not be in as much detail as the analysis of the proposed project. The range of alternatives is governed by the "rule of reason," which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f)(3).] However, if the range of alternatives is defined too narrowly, the analysis may be inadequate. (*City of Santee v. County of San Diego* [4th District, 1989] 214 Cal.App. 3d 1438.)
Warren-Alquist Act	The Warren–Alquist Act provides clarification as to when it may not be reasonable to require an Applicant to analyze alternative sites for a project. An alternative site analysis is not required as part of an AFC when a natural gas-fired thermal power plant is (1) proposed for development at an existing industrial site, and (2) "the project has a strong relationship to the existing industrial site and therefore it is reasonable not to analyze alternative sites for the project. [Pub. Res. Code § 25540.6 (b).]" The HBRP meets these criteria to be considered a repowering project. The existing

	HBPP site is zoned industrial and has been used to generate power since the 1950s. The HBRP is intended to replace the power currently being produced by the HBPP, which will be decommissioned as soon as the HBRP is commercially operational. Additionally, the site will be used for storage of spent fuel rods at the Independent Spent Fuel Storage Installation Project for an indefinite period into the future. The HBRP can also be considered to have a strong relationship to the existing site considering it will utilize virtually all the existing infrastructure including transmission, natural gas, water, and sanitary sewer systems.
California Coastal Act	The Coastal Act provides guidance for siting a thermal electric generating plant within a coastal zone, stating "new or expanded thermal electric generating plants may be constructed in the coastal zone if the proposed coastal site has been determined by the State Energy Resources Conservation and Development Commission (Energy Commission) to have greater relative merit pursuant to the provisions of Section 25516.1 (Pub. Res. Code, Div. 15), than available alternative sites and related facilities for an Applicant's service area which have been determined to be acceptable …". (Pub. Res. Code, § 30264). In addition, the Coastal Act specifies with regard to location, "Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division (Division 20 – California Coastal Act). However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section … if 1) alternative locations are infeasible or more environmentally damaging; 2) to do otherwise would adversely affect the public welfare; and 3) adverse environmental effects are mitigated to the maximum extent feasible (Pub. Res. Code, § 30260). With regard to wetlands, the Coastal Act states, "The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited

	to the following: 1) new or expanded port, energy, and coastal-dependent industrial facilities…“ (Pub. Res. Code, § 30233)

BIOLOGICAL RESOURCES

Applicable Law	*Description*
FEDERAL	
Clean Water Act (CWA) of 1977	Title 33, United States Code, Sections 1251–1376 and Code of Federal Regulations, part 30, Section 330.5(a)(26) prohibit the discharge of dredged or fill material into the waters of the United States without a permit. The administering agency is the U.S. Army Corps of Engineers.
Endangered Species Act (ESA) of 1973	Title 16, United States Code, Section 1531 et seq. and Title 50, Code of Federal Regulations, part 17.1 et seq. designate and provide for the protection of threatened and endangered plant and animal species and their critical habitat. The administering agency is the U.S. Fish and Wildlife Service (USFWS).
Migratory Bird Treaty Act	Title 16, United States Code, Sections 703–712 prohibit the take of migratory birds, including nests with viable eggs. The administering agency is the USFWS.
Bald and Golden Eagle Protection Act	Title 16, United States Code, Section 668 prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions.
STATE	
	The administering agency for the following state LORS is the California Department of Fish and Game (CDFG), except for the CWA Section 401 Water Quality Certification, which is administered by the Regional Water Quality Control Board and the California Coastal Act, administered by the California Coastal Commission.
California Endangered Species Act (CESA) of 1984	Fish and Game Code Sections 2050–2098 protect California's rare, threatened, and endangered species.
California Code of Regulations	California Code of Regulations Title 14, Division 1, Subdivision 3, Chapter 3, Sections 670.2 and 670.5 list plants and animals of California that are designated as rare, threatened, or endangered.
Fully Protected Species	Fish and Game Code Sections 3511, 4700, 5050, and 5515 prohibit the take of animals that are classified as Fully Protected in California.

Nest or Eggs – Take, Possess, or Destroy	Fish and Game Code Section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.
Birds of Prey – Take, Possess, or Destroy	Fish and Game Code Section 3503.5 specifically protects California's birds of prey in the orders *Falconiformes* and *Strigiformes* by making it unlawful to take, possess, or destroy any such birds of prey or to take, possess, or destroy the nest or eggs of any such bird.
Migratory Birds – Take or Possession	Fish and Game Code Section 3513 protects California's migratory non-game birds by making it unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act or any part of such migratory non-game bird.
Significant Natural Areas	Fish and Game Code Sections 1930 et seq. designate certain areas in California such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.
Native Plant Protection Act of 1977	Fish and Game Code Sections 1900 et seq. designate rare, threatened, and endangered plants in the state of California.
Streambed Alteration Agreement	Fish and Game Code Sections 1603 et seq. regulate activities by private utilities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by the CDFG in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.
Regional Water Quality Control Board (RWQCB)	By federal law every applicant for a federal permit or license for an activity which may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.
California Coastal Act	The California Coastal Act sets out a series of policies to protect and enhance the California Coastal Zone. The Coastal Act addresses marine resources, biological productivity, environmentally sensitive habitat areas, wetlands, and other issues.
LOCAL	
Humboldt County General Plan	Chapter 3 of the Framework Plan includes biological resources policies that focus on protection and minimization of impacts to sensitive biological resources including wetlands and special-status species.

CULTURAL RESOURCES

Applicable Law	***Description***
STATE	
Public Resources Code, Section 21083.2	The lead agency may require reasonable steps to preserve a unique archaeological resource in place. Otherwise, the project applicant is required to fund mitigation measures to the extent prescribed in this section. This section also allows a lead agency to make provisions for archaeological resources unexpectedly encountered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA).
California Code of Regulations, Title 14, Section 15064.5, subsections (d), (e), and (f)	Subsection (d) allows the project applicant to develop an agreement with Native Americans on a plan for the disposition of remains from known Native American burials impacted by the project. Subsection (e) requires the landowner [or an authorized representative] to rebury Native American remains elsewhere on the property if other disposition cannot be negotiated within 24 hours of accidental discovery and required construction stoppage. Subsection (f) directs the lead agency to make provisions for historical or unique archaeological resources that are accidentally discovered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA Guidelines).
California Code of Regulations, Title 14, Section 15126.4(b)	This section describes options for the lead agency and for the project applicant to arrive at appropriate, reasonable, enforceable mitigation measures for minimizing significant adverse impacts from a project. It prescribes the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project's impact on a historical resource; discusses documentation as a mitigation measure; and advises mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan (CEQA Guidelines).

Applicable Law	*Description*
STATE	
Public Resources Code 5024.1	Establishes the California Register of Historic Resources (CRHR) to include properties determined eligible for the National Register of Historic Places (NRHP, State Historic Landmark No. 770 and subsequent numbered landmarks, Points of Historical Interest recommended for listing by the State Historic Resources Commission, and historical resources, historic districts, and landmarks designated or listed by a city or county under a local ordinance. CRHR criteria are 1) events, 2) important persons, 3) distinctive construction, and 4) data.
Public Resources Code 5020.1 (h)	"Historic district" means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.
California Health and Safety Code, Section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
LOCAL	
Humboldt County General Plan, Section 3500	The Humboldt County General Plan includes measures to provide for the identification and protection of archaeological sites and historic structures.
Humboldt County Local Coastal Plan, Goal 3.18	This goal provides for the protection of archaeological resources.

FACILITY DESIGN

Applicable Law	*Description*
FEDERAL	
	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards
STATE	
	2007 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
LOCAL	
	Humboldt County, Regulations and Ordinances
GENERAL	
	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

GEOLOGY AND PALEONTOLOGY

Applicable Law	*Description*
FEDERAL	
	The proposed HBRP is not located on federal land. There are no federal LORS for geologic hazards and resources for this site.
STATE	
California Building Code (2007)	The CBC includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control).
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code Section 2621–2630	Mitigates against surface fault rupture of active faults. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. The site is not located within, but is near, a designated Alquist-Priolo Fault Zone.
The Seismic Hazards Mapping Act, Public Resources Code Section 2690–2699	Areas subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches, are identified.
California Coastal Act Sections 30244 and 30253	Section 30244 requires mitigation for adversely impacted archaeological and paleontological resources. Section 30253 requires that risks to life and property that may result from geologic, flood, and fire hazards be minimized and that the “stability and structural integrity” of the site and natural landforms in the surrounding area be maintained.
Public Resources Code Section 25527 and 25550.5(i)	The Warren-Alquist Act requires the California Energy Commission to “give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites…” With respect to paleontologic resources, the Energy Commission relies on guidelines from the Society for Vertebrate Paleontology (SVP), indicated below. Section 25550.5(i) defines the criteria for a repowering project that involves modification of an existing power plant rather than construction of a new facility.
California Environmental Quality Act (CEQA), Appendix G	Mandates that public and private entities identify the potential impacts on the environment during proposed activities. Appendix G outlines the requirements for compliance with CEQA and provides a definition of significant impacts on a fossil site.

Applicable Law	***Description***
Society for Vertebrate Paleontology (SVP), 1995	The “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 by the Society for Vertebrate Paleontology, a national organization of professional scientists.
LOCAL	
Humboldt County Zoning Regulations	Requires compliance with a number of development standards. Applicable standards include preparation of and compliance with preliminary geological engineering and soils reports, preparation of a Supplementary Information Report for projects located in coastal zones, and compliance with construction standards in accordance with the Uniform Building Code, Section 2312, Earthquake Regulations, and sections of the California Coastal Act.
Humboldt County General Plan	Requires compliance with construction standards in accordance with the California Coastal Act and preparation of a project geotechnical report. The Plan also specifies design criteria for facilities to be constructed below the 100-year tsunami run-up elevation and within the 100-year flood plain.

HAZARDOUS MATERIALS MANAGEMENT

Applicable Law	*Description*
FEDERAL	
The Superfund Amendments and Reauthorization Act of 1986 (42 United States Code (USC) §9601 et seq.)	Contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III)
The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended)	Establishes a nationwide emergency planning and response program and imposes reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials.
The CAA section on Risk Management Plans (42 USC §112(r)	Requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.
49 Code of Federal Regulations Parts 172-800 (49 CFR 172-800)	U.S. Department of Transportation (U.S. DOT) requirement that suppliers of hazardous materials prepare and implement security plans.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written Spill Prevention, Control, and Countermeasures (SPCC) plan to be prepared for facilities that store significant volumes of oil that may leak into navigable waters.
49 CFR Part 190	Outlines gas pipeline safety program procedures.
49 CFR Part 191	Addresses transportation of Natural and Other Gas by Pipeline: Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days.
49 CFR Part 192	Addresses transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, specifies minimum safety requirements for pipelines and includes material selection, design requirements, and corrosion protection. The safety requirements for

Applicable Law	*Description*
	pipeline construction vary according to the population density and land uses that characterize the surrounding land. This part also contains regulations governing pipeline construction that must be followed for Class 2 and Class 3 pipelines, and requirements for preparing a Pipeline Integrity Management Program.
6 CFR Part 27	The Chemical Facility Anti-Terrorism Standard (CFATS) regulation of the U.S. Department of Homeland Security (DHS) requires facilities that use or store certain hazardous materials to submit information to the DHS so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.
STATE	
California Health and Safety Code, section 25531 to 25543.4	The California Accidental Release Program (Cal-ARP) requires the preparation of a Risk Management Plan (RMP) and Off-site Consequence Analysis (OCA) and submittal to the local Certified Unified Program Agency (CUPA) for approval.
Title 8, Cal. Code Regs., Section 5189	Requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.
Title 8, Cal. Code Regs., Section 458 and Sections 500 to 515	Set forth requirements for design, construction and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.
California Health and Safety Code, section 41700	Requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity to be discharged into sources of drinking water.

The Certified Unified Program Agency (CUPA) with responsibility to review RMPs and Hazardous Materials Business Plans (HMBPs) is the Humboldt County Division of Environmental Health (DEH). In regards to seismic safety issues, the site is located in Seismic Risk Zone 4. Construction and design of buildings and vessels storing hazardous materials will meet the seismic requirements of California Code of Regulations, Title 24 and the 2007 California Building Code (PG&E 2006a, Section 8.4.1.4.2).

LAND USE

Applicable Law	*Description*
Responsible Agencies	
FEDERAL	
	The proposed project is not located on federally administered public lands and is therefore not subject to federal regulations pertaining to land use.
STATE	
California Coastal Commission Public Resources Code § 25500 et seq.	California Coastal Act of 1976, Public Resources Code §3000, et seq. §25529 of the Warren-Alquist Act
LOCAL	
Humboldt County	Humboldt County General Plan Volume II: Humboldt Bay Area Plan of the Humboldt County Local Coastal Program and Zoning Ordinance

NOISE AND VIBRATION

Applicable Law	*Description*
FEDERAL	
(OSHA): 29 U.S.C. §651 et seq.	The Department of Labor, Occupational Safety. and Health Administration (OSHA) has adopted regulations (29 C.F.R. §1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation. The only guidance available for evaluation of power plant vibration are guidelines published by the Federal Transit Administration (FTA) for assessing the impacts of ground-borne vibration associated with construction of rail projects. Other jurisdictions have applied these guidelines to assess ground-borne vibration of other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec. No federal laws govern off-site (community) noise.

Applicable Law	*Description*
STATE	
(Cal-OSHA): Cal. Code Regs., tit. 8, §§5095–5099	California Government Code section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§5095–5099) establishing employee noise exposure limits. These standards are equivalent to the federal OSHA standards. Protects workers from the effects of occupational noise exposure.
CEQA	The California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified and such impacts be reduced to less than significant or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in exposure of persons to, or generation of, noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies; exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Applicable Law	*Description*
LOCAL	
Humboldt County General Plan, §3240 - Noise: Land Use/Noise Compatibility Standards	Section 3240 (“Noise”) in Chapter 3 (“Hazards and Resources”) of the Humboldt County General Plan (Humboldt 1984) requires the use of Figure 3-2, a noise compatibility matrix entitled “Land Use/Noise Compatibility Standards,” in establishing requirements for new projects. This matrix regards noise impacts at single-family residential and mobile home uses as Clearly Acceptable up to 60 dBA L_{dn} and Normally Acceptable up to 65 dBA L_{dn}.
Humboldt County Zoning Regulations, Industrial Performance Standards, §313-103.1.3	The Humboldt County Zoning Regulations (Humboldt 2000) establishes performance standards for industrial development. For development that impacts residential zones, noise emissions must be limited, so they do not exceed the exterior ambient noise level by more than 5 dBA (§103.1.3.1), and vibration must be limited so that no vibrations are perceptible off the site (§103.1.3.4). For development impacting non-residential zones, noise emissions must be limited to 70 dBA anywhere off the site (§103.1.4.1), and vibration must be limited, as to not interfere with adjacent land uses (§103.1.4.4).
Humboldt County Zoning Regulations, Industrial Performance Standards, §313-103.1.4	Requires all noise generating operations be mitigated so noise in nonresidential zones does not exceed 70 dBA off the site (§ 103.1.4.1). Requires that vibrations not be permitted to interfere with adjacent non-residential land uses (§103.1.4.4)

POWER PLANT EFFICIENCY

No Federal, State or local/county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

POWER PLANT RELIABILITY

No Federal, State or local/county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

PUBLIC HEALTH

Applicable Law	*Description*
FEDERAL	
Clean Air Act section 112 (42 U.S. Code section 7412)	Requires new sources which emit more than ten tons per year of any specified hazardous air pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).
STATE	
California Health and Safety Code section 41700	This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
CA Health & Safety Code §40001	Prohibits emissions and other discharges (such as smoke and odors) from specific sources of air pollution in excess of specified levels.
CARB Air Toxics Control Measure (ATCM) for Compression Ignition Nonroad Engines PRC Title 17 section 93115	Regulates potential cancer risk and noncarcinogenic chronic health hazards of compression ignition nonroad engines.
Health and Safety Code 25249.5 et seq	These regulations implement Proposition 65, the statue that requires that notice be given to the public if exposure to chemicals known to cause cancer or reproductive toxicity exceed threshold levels.
Health and Safety Code Sections 44360 to 4366 (Air Toxics "Hot Spots" Information and Assessment Act—AB 2588)	Requires the preparation of a human health risk assessment that addresses public exposure to toxic air contaminants emitted from stationary sources and requires notification to the public and risk reduction measures identified by the local air district.
LOCAL	none

SOCIOECONOMICS

Applicable Law	***Description***
STATE	
California Government Code, Sections 65996-65997	These sections include provisions for school district levies against development projects. As Amended by Senate Bill (SB) 50 (Stats. 1998, ch. 407, sec. 23), these sections state that except for those fees established under Education Code 17620, public agencies at the state level may not impose fees, charges, or other financial requirements to offset the cost for school facilities.
LOCAL	none

SOIL & WATER

Applicable Law	*Description*
FEDERAL	
Clean Water Act (33 U.S.C. Section 1257 et seq.)	The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality, which includes regulation of stormwater discharges during construction and operation of a facility. These are normally addressed through a general National Pollutant Discharge Elimination System (NPDES) permit. For HBRP, regulation of water quality is administered by the North Coast Regional Water Quality Control Board (NCRWQCB).
Resource Conservation and Recovery Act	The Resource Conservation Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
STATE	
Water Code Section 13260	Requires filing with the appropriate Regional Board a report of waste discharge that could affect the water quality of the state, unless the requirement is waived pursuant to Water Code section 13269.
Coastal Act Section 30231	The biological productivity and the quality of coastal waters, streams, wetlands, estuaries and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.
LOCAL	
Humboldt County	Regulates all industrial activities in the County through review and approval of a Plan of Operation submitted to the Community Development Services Department. Flood Ordinance Section 335-4 regulates the construction of flood barriers, which will unnaturally divert flood waters, may increase flood hazards in other areas, and would require a Flood Plain Development Permit. The final Evaluation Certificate is based on the finished construction and is required to demonstrate compliance with Section 335-5.
State Policies and Guidance	
California Constitution, Article X, Section 2	This section requires that the water resources of the State be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use, or unreasonable method of use of water is prohibited.

Title 23, California Code of Regulations, Chapter 15, Division 3	These regulations require that the Regional Water Quality Control Board (Regional Board) issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
California Code of Regulations, Title 17	Title 17, Division 1, Chapter 5, addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines.
California Code of Regulations, Title 23	Title 23, Division 3, Chapter 15, requires that the Regional Board issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
SWRCB Water Quality Order 99-08	The SWRCB regulates stormwater discharges associated with construction projects affecting areas greater than or equal to 1 acre to protect state waters. Under Order 99-08, the SWRCB has issued a National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction activity for which applicants can qualify if they meet the criteria and upon preparing and implementing an acceptable Storm Water Pollution Prevention Plan (SWPPP) and notifying the SWRCB with a Notice of Intent.
California Water Code Section 100	Requires the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.
California Water Code Section 100.5	Declares to be the established policy of the State that conformity of a use, method of use, or method of diversion of water with local custom shall not be solely determinative of its reasonableness, but shall be considered as one factor to be weighed in the determination of the reasonableness of the use, method of use, or method of diversion of water, within the meaning of Article X, Section 2 of the California Constitution.
California Water Code Section 13146	Requires that state offices, departments and boards in carrying out activities, which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the State Water Resources Control Board in writing their authority for not complying with such policy.
California Water Code Section 13247	Requires that state offices, departments, and boards, in carrying out activities which may affect water quality, shall comply with water quality control plans (i.e., Basin Plans) approved or adopted by the State Water Resources Control Board unless otherwise directed or authorized by statute, in which case they shall indicate to the appropriate Regional Water Quality Control Boards in writing their authority for not complying with such plans.
SWRCB Resolution 68-16	This resolution (the “Anti-Degradation Policy”) declares that it is the State’s policy for maintaining existing high quality waters to the maximum extent possible. The existing high water quality must be maintained until demonstrated to the State that any proposed change will be consistent with the maximum benefit to the people of the state and will not unreasonably affect present or future beneficial uses.

SWRCB Resolution 75-58	The principal policy of the SWRCB that addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1976, by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. Resolution 75-58 defines fresh inland waters as those "which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish and wildlife". In a May 23, 2002 letter from the Chairman of the SWRCB to Energy Commission Commissioners, the principal of the policy was confirmed 'that the lowest quality cooling water reasonably available from both a technical and economic standpoint should be utilized as the source water for any evaporative cooling process utilized at these facilities.
SWRCB Resolution 88-63	Resolution 88-63 defines suitability of sources of drinking water. The total dissolved solids must exceed 3,000 mg/l for it to not be considered suitable, or potentially suitable, for municipal or domestic water supply.
The California Safe Drinking Water and Toxic Enforcement Act	This Act (California Health & Safety Code Section 25249.5 et seq.) prohibits actions contaminating drinking water with chemicals known to cause cancer or possessing reproductive toxicity. The Regional Water Quality Control Board administers the requirements of the Act.
Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et esq.)	In the 2003 IEPR, consistent with State Water Resources Control Board Policy 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating they will approve the use of fresh water for cooling purposes by power plants it licenses only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound."

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable Laws	*Description*
AVIATION SAFETY	
FEDERAL	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards.
FAA Advisory Circular No. 70/7460-1G, " Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard.
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	Not to exceed applicable local noise ordinances – (no design-specific federal or state regulations for noise from transmission lines).
Hazardous and Nuisance Shocks	
STATE	
CPUC GO-95, "Rules for Overhead Electric Line Construction"	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.

Applicable Laws	***Description***
Title 8, California Code of Regulations (CCR) Section 2700 et seq. “High Voltage Safety Orders”	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
Industry Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, “IEEE Guide for Fence Safety Clearances in Electric-Supply Stations”	Specifies the guidelines for grounding-related practices within the right-of-way and substations.
Electric and Magnetic Fields	
GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields for CPUC-regulated utilities.
Industry Standards	
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line.
Fire Hazards	
STATE	
14 CCR Sections 1250-1258, “Fire Prevention Standards for Electric Utilities”	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.

TRAFFIC AND TRANSPORTATION

Applicable Law	***Description***
FEDERAL	
Code of Federal Regulations (CFR), Title 14 Aeronautics and Space, Part 77 Objects Affecting Navigable Airspace (14 CFR 77)	This regulation establishes standards for determining physical obstructions to navigable airspace; sets noticing and hearing requirements; and provides for aeronautical studies to determine the effect of physical obstructions on the safe and efficient use of airspace.
CFR, Title 49, Subtitle B	49 CFR Subtitle B includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures), and provides safety measures for motor carriers and motor vehicles who operate on public highways.
STATE	
California Vehicle Code (CVC), Division 2, Chapter. 2.5, Div. 6, Chap. 7, Div. 13, Chap. 5, Div. 14.1, Chap. 1 & 2, Div. 14.8, Div. 15	Includes regulations pertaining to licensing, size, weight and load of vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials.
California Streets and Highway Code, Division 1 & 2, Chapter 3 & Chapter 5.5	Includes regulations for the care and protection of State and County highways, and provisions for the issuance of written permits.
LOCAL	
2002 Humboldt 2025 General Plan Update	Establishes regional transportation goals, policies and implementation measures for various modes of transportation, including intermodal and multimodal transportation activities.
Humboldt County Public Works Department	Requires encroachment permits for projects that occur on county right-of-ways (ROW) and for road improvements.

TRANSMISSION SYSTEM ENGINEERING

Applicable Law	***Description***
California Public Utilities Commission (CPUC) General Order 95 (GO-95),	"Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
California Public Utilities Commission (CPUC) General Order 128 (GO-128),	"Rules for Construction of Underground Electric Supply and Communications Systems," formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.
The National Electric Safety Code	1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
NERC/WECC Planning Standards	• The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is

	based to a large degree on Section I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2006).
North American Electric Reliability Council (NERC) Reliability Standards	The Bulk Electric Systems of North America provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Standards, certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards for Transmission System Contingency Performance. The NERC Reliability standards apply not only to interconnected system operation but also to individual service areas (NERC 2006).
California ISO Planning Standards	Provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The California ISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning

	Standards. With regard to power flow and stability simulations, these Planning Standards are similar to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The California ISO Standards apply to all participating transmission owners interconnecting to the California ISO controlled grid. They also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the California ISO (California ISO 2002a).
California ISO/FERC Electric Tariff	Provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the “Need” for the proposed project where it will promote economic efficiency or maintain System Reliability. The California ISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the California ISO grid (California ISO 2007a).

VISUAL RESOURCES

Applicable Laws	***Description***
FEDERAL	
Transportation Equity Act for the 21st Century of 1998, and Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005.	The project site does not involve federal managed lands, nor a recognized National Scenic Byway or All-American Road within its vicinity.
STATE	
California Coastal Act of 1976, Section 30251 – Scenic and Visual Qualities	The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.
California Streets and Highways Code, Sections 260 through 263 – Scenic Highways	Ensures the protection of highway corridors that reflect the State's natural scenic beauty.
LOCAL	
Humboldt County General Plan, Vol. II Humboldt Bay Area Plan of the Humboldt County Local Coastal Program, April 1995 (effectively certified by the California Coastal Commission on January 10, 1986)	This area plan represents one of six county coastal planning areas. It identifies land uses and standards by which development will be evaluated within the Coastal Zone. The plan identifies uses and provides standards adopted by the county of Humboldt, and certified by the California Coastal Commission that are in conformance and satisfy the polices and requirements for coastal land use contained in the California Coastal Act 1976.

-Section 3.13 Coastal-Dependent Development/Industrial (MC)

WASTE MANAGEMENT

Applicable Law	*Description*
FEDERAL	
42 U.S.C. § 6922 Resource Conservation and Recovery Act	The RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding: • Record keeping practices which identify quantities of hazardous wastes generated and their disposition, • Labeling practices and use of appropriate containers, • Use of a manifest system for transportation, and • Submission of periodic reports to the Environmental Protection Agency (EPA) or authorized state agency.
Clean Water Act (CWA)	Controls discharge of wastewater to the surface waters of the U.S.
STATE	
California Integrated Waste Management Act (CIWMA)	Provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. Counties are required to submit Integrated Waste Management Plans to the state.
California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended)	This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency (Cal EPA)) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes. The Humboldt County Department of Environmental Health enforces this Act.
Porter-Cologne water Quality Control Act	Controls discharge of wastewater to surface waters and groundwater of California.
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids.
LOCAL	
Humboldt County Integrated Waste Management Plan	Provides guidance for local management of solid waste and household hazardous waste. Responsible for administering and enforcing the CIWMA for solid, nonhazardous waste for HBRP.
Humboldt County General Plan, Public Services and Facilities, Chapter 4, Section 4600	Establishes County policies on reducing waste generation, meeting waste diversion goals, encouraging cleanup of contaminated sites, and ensuring adequate waste disposal capacity for the County's solid waste.

WORKER SAFETY AND FIRE PROTECTION

Applicable Law	*Description*
FEDERAL	
29 U.S. Code sections 651 et seq (Occupational Safety and Health Act of 1970)	This Act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).
29 CFR sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.
29 CFR sections 1952.170 to 1952.175	These sections provide Federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the Federal requirements found in 29 CFR §1910.1 to 1910.1500.
STATE	
8 CCR all applicable sections (Cal/OSHA regulations)	Requires that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling.
California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.)	Comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The California Building Standards Code incorporates current editions of the Uniform Building Code and includes the electrical, mechanical, energy, and fire codes applicable to the project.
Health and Safety Code section 25500, et seq.	Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	Requires a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.

LOCAL (or locally enforced)	
Specific hazardous material handling requirements	Provides response agencies with necessary information to address emergencies
Emergency Response Plan	Allows response agency to integrate HBRP emergency response activities into any response actions
Business Plan	Provides response agency with overview of HBRP purpose and operations
Risk Management Plan (CUPA)	Provides response agency with detailed review of risks and hazards located at HBRP and mitigation implemented to control risks or hazards
1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9)	NFPA standards are incorporated into the California Uniform Fire Code. The fire code contains general provisions for fire safety, including: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code incorporates current editions of the UFC standards.
International Code Council (ICC), International Existing Building Code (IEBC)	By January 2008, the Humboldt Fire District (HFD) states that it will be operating under the new ICC IEBC codes that are currently in the process of adoption in California (Ziemer 2007).
Uniform Fire Code, Article 80 1997	Contains standards of the American Society for Testing and Materials and the NFPA. It is the United State's premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition.

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

APPLICATION FOR CERTIFICATION FOR THE *HUMBOLDT BAY REPOWERING PROJECT* BY PACIFIC GAS AND ELECTRIC COMPANY	**DOCKET NO. 06-AFC-7**

EXHIBIT LIST

APPLICANT'S EXHIBITS

EXHIBIT 1 Humboldt Bay Repowering Project AFC, dated 09/29/06. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 2 Application for Determination of Compliance, dated 09/29/06. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 3 Request by North Coast Unified Air Quality Management District fulfilled by Sierra Research, dated 10/13/06. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 4 Data Adequacy Supplement, dated 11/01/06. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 5 Cumulative Impacts Analysis Letter to Nancy Matthews, dated 11/9/06. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 6 Web Team, Nancy Matthews Responses to Air Resources Board Questions, dated 01/11/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 7 Data Responses to Data Requests 1 through 57, dated 01/12/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 8 Drainage, Erosion, and Sediment Control Plan, dated 01/12/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 9 Responses to Questions from Simona Altman by Nancy Matthews, dated 01/17/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 10 Sierra Research's Responses to Emission Calculations from Nancy Matthews, dated 01/18/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 11 Transmittal of Electronic Copy of Draft Wetland Delineation Report, dated 01/19/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 12 Additional Responses to Questions from Simona Altman of the Air Resources Board, by Nancy Matthews of Sierra Research, dated 02/02/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 13 Submittal of Pacific Gas and Electric Responses to Staff Data Requests 58 through 78 and Workshop Query 1 through 22, dated 02/13/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 14 Response to Air Quality Workshop Query #1, dated 03/02/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 15 Wartsila Emission Factor Guarantees for the Humboldt Bay Repowering Project, dated 03/14/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 16 CH2M Hill Responses to Data Requests 79 through 85 and Workshop Queries, dated 03/16/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 17 Pacific Gas and Electric Responses to Workshop Queries 8 and 23 through 27, dated 03/23/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 18 Pacific Gas and Electric Responses to Workshop Queries 3, 11, 14, and 15 and Data Requests 11, 55, 82 and 83, dated 03/30/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 19 Pacific Gas and Electric Revisions to the Air Quality Analysis Baseline Period and Emission Reduction Credits, dated 04/04/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 20 Wartsila Memo Confirming the Emission Values Contained in the AFC, dated 04/11/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 21 Redwood Coast Energy Authority Support Letter for the Humboldt Bay Repowering Project, dated 4/11/07Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 22 Letter Report on Air Quality Modeling Methodology for the Humboldt Bay Repowering Project, Prepared by D. Bruce Turner, Trinity Consultants, dated 04/18/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 23 Humboldt Bay Repowering Project Preliminary Phase II ESA Report, dated 04/23/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 24 Revised Humboldt Bay Power Plant Activities, dated 05/04/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 25 U.S. Army Corps of Engineers Wetland Delineation Verification Letter and Map, dated April 23, 2007. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 26 Buhne Point Wetlands Preserve Mitigation and Monitoring Plan; and Coastal Access Enhancement Proposal, dated 07/06/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 27 Letter in Response to July 5, 2007 letter to Greg Lamberg/ Pacific Gas and Electric Regarding Revised Modeling Protocol Submitted June 13, 2007, dated 07/17/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 28 Modeling Protocol, Revised July 17, 2007, dated 07/17/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 29 CDP Application # E-07-005 for Proposed Offices and Parking at Humboldt, dated 10/12/07Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 30 Memo Regarding PM Control Efficiency of Diesel Oxidation Catalysts, dated 08/30/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 31 Revised Air Quality Analysis Section 8.1A through 8.1G, dated 09/12/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 32 Supplement to Address Revised Air Quality Modeling and Increased Stack Height, dated 09/28/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 33 Preliminary Determination of Compliance Permit to Construct Evaluation, dated 10/15/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 34 Letter from Coastal Commission Regarding Review of Projects Subject to the Application for Certification, dated 10/16/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 35 Preliminary Determination of Compliance, dated 10/22/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 36 Responses to CEC Staff Requests 86 through 105, dated 11/01/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 37 Applicant's Response to CEC Staff Data Request 100, dated 11/02/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 38 Applicant's Responses to CEC Staff Data Requests 104 and 105, dated 11/06/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 39 Supplemental Screening Health Risk Assessment, dated 11/09/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 40 Letter Regarding CDP #E07-005 for the SDPP, dated 11/15/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 41 Applicant's Responses to CEC Staff Data Request 103, dated

11/16/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 42 Revised Visual Simulations, dated 11/19/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 43 Pacific Gas and Electric Comments on the Humboldt Bay Repowering Project Preliminary Determination of Compliance, dated 11/20/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 44 Pacific Gas and Electric Pipeline Removal Project, dated 12/04/07. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 45 Pacific Gas and Electric Company's Supplemental Comments on the Preliminary Staff Assessment, dated 01/02/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 46 Amendment to Facility License (Amendment No. 23, License No. DPR-7), dated 01/16/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 47 Pacific Gas and Electric Company's Supplemental Screening Health Risk Assessment, dated 02/06/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 48 Applicant's Responses to CEC Staff Workshop Queries 16 and 17, dated 02/21/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 49 Post-Shutdown Decommissioning Activities Report, Humboldt Bay Power Plant Unit 3, dated 04/02/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 50 City of Eureka's Support for Pacific Gas and Electric Company's Contribution to a Public Use, dated 04/07/08. Sponsored by Applicant, and received into evidence on June 17, 2008.

EXHIBIT 51 See Exhibit 206.

EXHIBIT 52 See Exhibit 206.

EXHIBIT 53 Applicant's Supplemental Information in Responses to Workshop Queries Historical Resources Evaluation of the Humboldt Bay Power

Plant Units 1 and 2 Humboldt Bay Repowering Project, dated 04/17/08. Sponsored by Applicant and received into evidence on June 17, 2008.

EXHIBIT 54 Clean Water Act Section 404 Permit, dated 10/16/07. Sponsored by Applicant and received into evidence on June 17, 2008.

EXHIBIT 55 Project Description Testimony and Declaration of Greg Lamberg, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 56 Air Quality Testimony and Declaration of Gary Rubenstein, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 57 Alternatives Testimony and Declarations of Susan Strachan and Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 58 Biological Resources Testimony and Declaration of Debra Crowe, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 59 Cultural Resources Testimony and Declarations of Douglas Davy and Jessica Feldman, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 60 Facility Design, Efficiency and Reliability Testimony and Declaration of Kenneth F. Horn, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 61 Geology and Paleontology Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 62 Hazardous Materials Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 63 Land Use Testimony and Declaration of Susan Strachan, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 64 Noise and Vibration Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 65 Public Health Testimony and Declaration of Jerry Salamy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 66 Socioeconomics Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 67 Traffic and Transportation Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 68 Transmission Lines Safety and Nuisance Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 69 Transmission System Engineering Testimony and Declaration of Kenneth F, Horn, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 70 Waste Management Testimony and Declaration of Susan Strachan, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 71 Soil and Water Resources Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 72 Worker Safety Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 73 Visual Resources Testimony and Declaration of Douglas Davy, dated June 4, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 74 Repowering Humboldt Bay Power Plant, **"**Project Overview and Schedule Criticality," presented by PG&E, dated June 17, 2008. Sponsored by Applicant and received into evidence on June 17, 2008.

Exhibit 75 Pacific Gas & Electric Company and CEC Staff Joint Stipulation on Modifications to the Final Staff Assessment and Proposed Conditions of Certification, dated May 30, 2008. Sponsored by Applicant and

received into evidence on June 17, 2008.

Exhibit 76 Suggested Revision to Cultural Resources Conditions, dated June 16, 2008, Final Agreement. Sponsored by Applicant and received into evidence on June 17, 2008.

ENERGY COMMISSION STAFF'S EXHIBITS

EXHIBIT 200 Final Staff Assessment of the Humboldt Bay Repowering Project, dated May 15, 2008. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 201 E-mail from Mr. David Byrd, State Historian II, State Office of Historic Preservation to Ms. Beverly Bastian, dated December 12, 2007. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 202 Risk Assessment Forum, U. S. Environmental Protection Agency, *Guidelines for Carcinogen Risk Assessment*, dated March 2005. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 203 Peter M. J. Bos, Bert-Jan Baars, Marcel T. M. van Raaij, *Risk Assessment of Peak Exposure to Genotoxic Carcinogens: A Pragmatic Approach*, dated January 6, 2004. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 204 Facsimile communication from Dr. Edward Calabrese, Northeast Regional Environmental Health Center to Dr. Alvin Greenberg, dated January 12, 1996. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 205 Memorandum from Lorenz Rhomberg, Carcinogen Assessment Group, Office of Health and Environmental Assessment, United States Environmental Protection Agency on *Correcting Methylene Chloride Risk Estimates for Pharmacokinetic Dose-Rate Effects*, dated March 4, 1988. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 206 North Coast Unified Air Quality Management District's Final Determination of Compliance. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 207 Natural Resources Services Division of RCAA for the City of Eureka, Elk River Access Project Recommendations, dated August 22, 2002. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 208 Letter from David W. Tyson, City Manager, City of Eureka, to Mr. John Kessler, Regarding Support for PG&E's Contribution to a Public Use Area, dated April 7, 2008. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 209 Declaration of John S. Kessler for preparation of the Project Description section in the Final Staff Assessment. Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 210 Staff proposed changes to Public Health Condition of Certification, **PUBLIC HEALTH-1.** Sponsored by Staff; received into evidence on June 17, 2008.

EXHIBIT 211 Staff proposed changes to Cultural Resources Conditions of Certification, **CUL-8,** and **CUL-9,** dated 6/13/08**.** Sponsored by Staff; received into evidence on June 17, 2008.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE HUMBOLDT BAY REPOWERING PROJECT BY PACIFIC GAS AND ELECTRIC COMPANY	**Docket No. 06-AFC-7** **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. 06-AFC-07
1516 Ninth Street, MS-15
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docket@energy.state.ca.us

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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.

_____