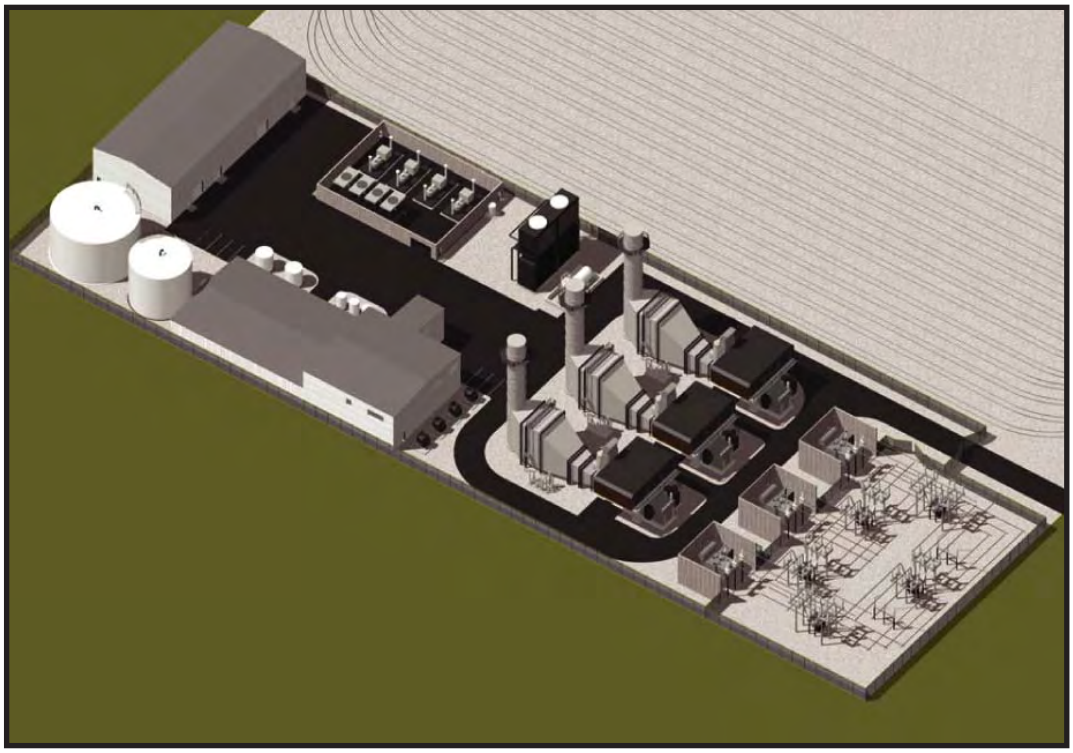
CALIFORNIA
ENERGY
COMMISSION

# SAN FRANCISCO ELECTRIC RELIABILITY PROJECT

## Application For Certification (04-AFC-1)
## The City and County of San Francisco



## PRESIDING MEMBER'S PROPOSED DECISION

AUGUST 2006
(04-AFC-1)
CEC-800-2006-007-PMPD

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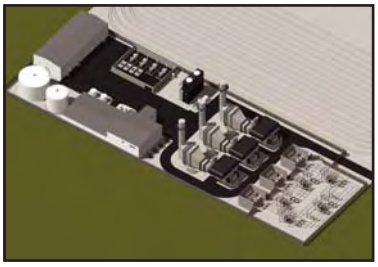

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CEC-800-2006-007-PMPD

**CALIFORNIA ENERGY COMMISSION**

1516 9th Street
Sacramento, CA 95814
*http://www.energy.ca.gov/sitingcases/sanfrancisco/index.html*

JAMES D. BOYD
*Presiding Committee Member*

JOHN L. GEESMAN
*Associate Committee Member*

STANLEY VALKOSKY
*Chief Hearing Adviser*

GARY FAY
*Hearing Officer*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

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

The Committee hereby submits its Presiding Member's Proposed Decision for the ***SAN FRANCISCO ELECTRIC RELIABILITY PROJECT*** (Docket Number 04-AFC-1). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code of Regs., §§1749-1752.5).

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 25, 2006, at Sacramento, California.

JAMES D. BOYD
Vice Chair and Presiding Committee Member
San Francisco Electric Reliability Project AFC Committee

JOHN L. GEESMAN
Commissioner and Associate Committee Member
San Francisco Electric Reliability 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 San Francisco Electric Reliability Project (SFERP) complies with all applicable laws, ordinances, regulations, and standards, and may therefore be licensed. It is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the SFERP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On March 18, 2004, the City and County of San Francisco (CCSF or Applicant) submitted an Application for Certification (AFC) to construct and operate a nominal 145 MW simple cycle peaking power plant, referred to as the San Francisco Electric Reliability Project (SFERP). The project was initially to be located at the former Potrero power plant site owned by Mirant Corporation. On November 4, 2004, Applicant requested a hiatus in the proceeding so that it could evaluate an alternative site. CCSF then filed an amendment to the project application, Supplement A, on March 25, 2005. This amendment involved relocating the proposed project to a site approximately 1/4 mile south of the original site. The new location, a 4-acre parcel owned by the CCSF, is located south of 25th Street and approximately 900 feet east of Illinois Street. It is near San Francisco Bay in the Potrero District of Southeast San Francisco, adjacent to CCSF's planned Municipal Transportation Agency (MUNI) Metro East Light

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT, page __." 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.

Rail Vehicle Maintenance and Operations Facility. The site is zoned for industrial use.

Applicant also submitted two additional amendments. The first, on November 18, 2005, incorporated a revised system for surface water drainage on the project site. The second, on December 20, 2005, involved a change in the recycled water supply source, a new linear waste water supply pipeline route, and a modification to the planned on-site tertiary water treatment facility.

The project will include construction of a new 115 kilovolt (kV) switchyard on the north side of the site. Natural gas will be delivered through a new 900 foot long pipeline which will connect to Pacific Gas and Electric Company's (PG&E) existing gas line located at the intersection of Illinois and 25$^{th}$ Streets. Process water will be delivered from a water pump station located on Marin Street near Cesar Chavez Street to a new water treatment plant located on the project site. A pipeline approximately 0.76 of a mile long will connect the pump station and the on-site treatment plant; plant wastewater will be discharged into the City's combined sewer system.

Construction of the SFERP, from site preparation and grading to commercial operation, is expected to take approximately 12 months. Commercial operation is anticipated to begin in late 2007. During the peak construction period, the project will provide a maximum of 264 construction jobs with an average of 161 workers present per month. About 11 workers will be needed to maintain and operate the project. Applicant estimates capital costs associated with the project to be approximately $140 million.

Agencies, including the Bay Area Air Quality Management District (BAAQMD), the Department of Toxic Substances Control (DTSC), the National Marine Fisheries Service, the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Regional Board), the United States Fish and Wildlife Service

(USFWS), and the California Independent System Operator (CAISO) cooperated with the California Energy Commission staff in completing this review process.

## B. SITE CERTIFICATION PROCESS

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

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

Public participation is a valued part of the licensing process. The Commission's public outreach program is primarily facilitated by the Public Advisers Office (PAO). This is an ongoing process that encourages public participation[2] so that

[2] Outreach activities are specified in Exhibit 46, pages 1-5 to 1-6.

members of the public may become involved either informally or, on a more formal level, as Intervenors with an opportunity to present evidence and cross-examine witnesses. Formal Intervenors were Jeffrey S. Russell and Mark Osterholt, Mirant California, LLC; Steven Moss, San Francisco Community Power; Michael Boyd, Californians for Renewable Energy, Inc. (CARE); Lynne Brown – Member, CARE; Robert Sarvey; and Joseph Boss, Potrero Boosters and Dogpatch Neighborhood Associations.

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

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

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order and schedules formal evidentiary hearings. At these hearings, all entities that have formally intervened as parties may present sworn testimony,

which is subject to cross-examination by other parties and questioning by the Committee. Members of the public who have not intervened may present public comments. Evidence adduced during these hearings provides the basis for the Presiding Member's Proposed Decision (PMPD). In the PMPD, the Committee evaluates the evidence presented, determines a project's conformity with applicable laws, ordinances, regulations, and standards, and provides recommendations to the full Commission.

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

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

## C. PROCEDURAL HISTORY

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

On May 10, 2004, the Committee issued a notice of "Informational Hearing and Site Visit." The notice was mailed to members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the SFERP. The notice was also published in a local general circulation newspaper.

The Committee conducted this event in the City of San Francisco on June 15, 2004. The Committee, the parties, and other participants discussed the proposal for developing the SFERP, described the Commission's review process, and explained opportunities for public participation. The participants also viewed the site where the SFERP would be situated.

Thereafter, Applicant began exploring potential use of a site different from that discussed at the June 2004 hearing. On March 25, 2005, Applicant filed supplemental information proposing use of a site on property owned by the City. In response, the Committee issued, on April 7, 2005, a Notice of Committee Conference and Site Visit to be held on May 6, 2005. Discussions at that Conference were similar to those of the June 2004 Informational Hearing. The Committee subsequently issued an Interim Scheduling Order on May 19, 2005.

As part of the review process, Staff conducted public workshops on July 19, 2005, May 6, 2005, October 18, 2005, and March 6, 2006, to discuss issues of concern with the Applicant, governmental agencies, and interested members of the public. Staff issued its Preliminary Staff Assessment on September 12, 2005, and its Final Staff Assessment on February 17, 2006.

The Committee then held a Prehearing Conference on April 3, 2006, the purpose of which was to thoroughly discuss the process and procedures to be utilized during the Evidentiary Hearings. The Committee conducted its first set of Evidentiary Hearings in Sacramento on April 27 and May 1, 2006. The second

set of Evidentiary Hearings was held on May 22 and May 31, 2006, in San Francisco.

At these publicly noticed hearings all parties were afforded the opportunity to present evidence, cross examine witnesses, and rebut the testimony of other parties, thereby creating an evidentiary basis for this Commission Decision. The hearings also allowed all parties to argue their positions on disputed matters and provided a forum for the Committee to receive comments from the public and other governmental agencies.[3]

After reviewing the evidentiary record and exhibits, the Committee published the PMPD on August 25, 2006, and scheduled a Committee Conference for September 25, 2006 to discuss comments submitted. The 30-day comment period on the PMPD ended on September 25, 2006. The Commission considered the PMPD at a Special Business Meeting held on October 3, 2006.

[3] During this proceeding, the Committee issued approximately two dozen Rulings and/or Orders in response to various requests/motions of the parties. About two-thirds were in response to motions filed by CARE and Sarvey. These same intervenors also appealed a half-dozen Rulings to the full Commission.

# I. PROJECT DESCRIPTION AND PURPOSE

The San Francisco Electric Reliability Project (SFERP) will be located on a four acre parcel owned by the City and County of San Francisco (CCSF or Applicant). This parcel is located south of 25th Street and approximately 900 feet east of Illinois Street. The site is near San Francisco Bay in the Potrero District of an industrially zoned area, adjacent to the planned Municipal Transportation Agency (MUNI) Metro East Light Rail Vehicle Maintenance and Operations Facility. (Exs. 15, p. 2-3; 46, p. 3-1; see **Figure 1**.)

The San Francisco Public Utilities Commission (SFPUC) is pursuing a memorandum of understanding, based on a signed letter of intent, for an option to transfer the beneficial use of the property from the MUNI to the SFPUC. The memorandum of understanding will be subject to approval by MUNI's Board of Directors, the Public Utilities Commission, and the San Francisco Port Commission.

Project construction, from the site preparation through commercial operation, will take about twelve months. Operation is anticipated by late 2007.

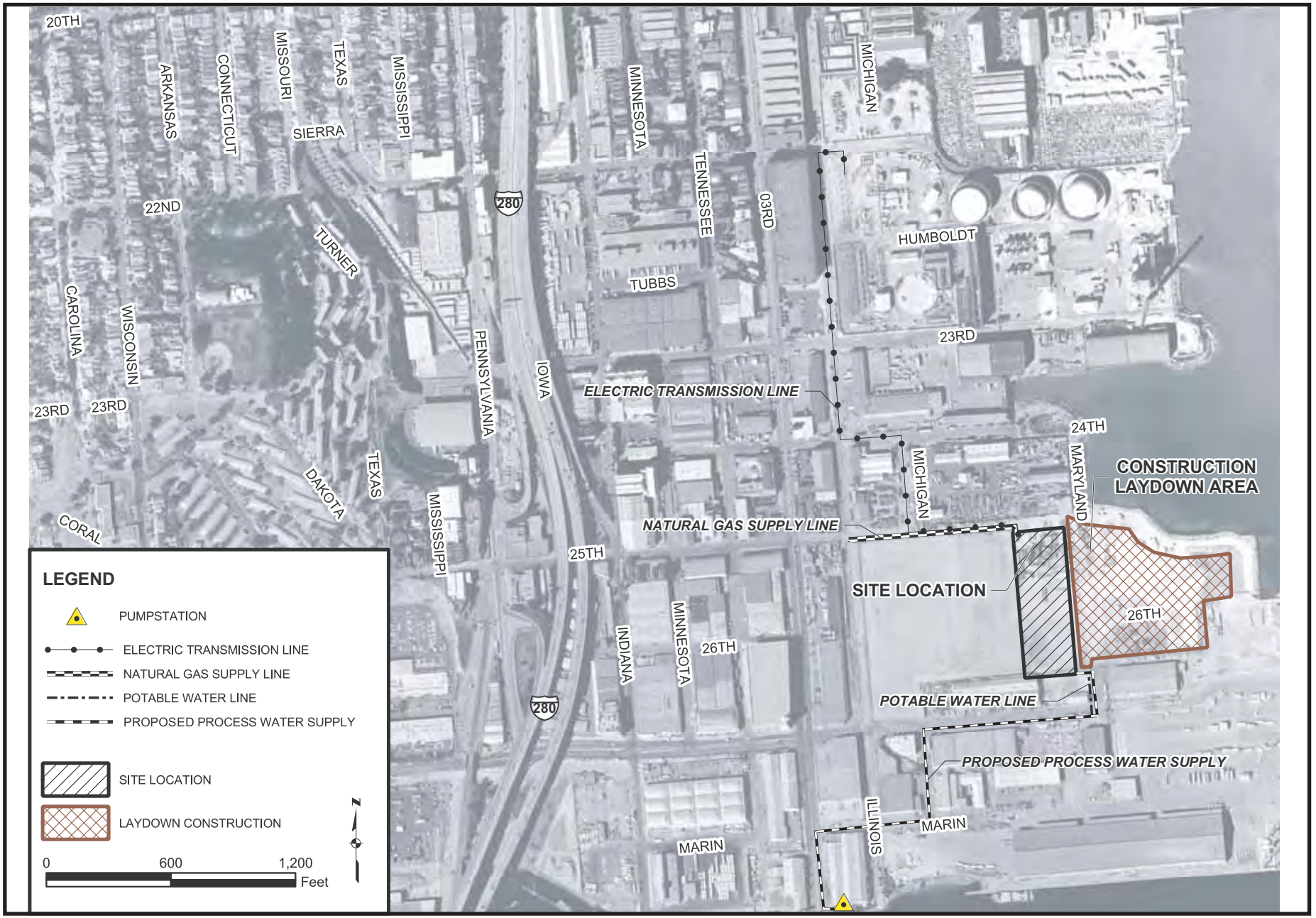
## 1. Site Conditions

Access to the facility will be via a 20 foot wide plant access roadway located on the west side of the project site off of 25th street. The construction laydown area will be approximately 8.5 acres, and is located on land leased from the Port of San Francisco. The laydown area is located directly east and adjacent to the project site between it and the waterfront. Currently, there are some temporary facilities on the project site including construction trailers, a construction laydown area, and a concrete batch plant. These will be removed prior to construction of the SFERP.

## PROJECTION DESCRIPTION - FIGURE 2

San Francisco Electric Reliability Project - Supplement A - Site and Linear Facilities Location








**SOURCE: Exhibit 15**

**CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION,** FEBRUARY 2006

SOURCE: AFC Supplement A, Figure 2-1

## 2. Power Plant

The SFERP is a nominal 145 MW simple-cycle peaking plant. Thermal energy will be produced in the three combustion turbine generators (CTGs) by burning natural gas. The aero derivative CTGs, known as LM 6000s, are made by General Electric. This technology is the most efficient simple-cycle CTG on the market and has a documented availability record of 97.8 percent. Each power train system will consist of a CTG with supporting systems and associated auxiliary equipment. The CTGs will have water injection for controlling oxides of nitrogen (NOx) emissions and for power augmentation. CTG exhaust emissions will be further reduced through the use of selective catalytic reduction (SCR) and oxidation catalyst systems. The project's heat rejection system will consist of a single two-cell wet counter flow cooling tower to remove the heat generated by the turbine inlet chillers and the heat generated by miscellaneous auxiliary heat loads such as lube oil coolers.

The CTGs will be equipped with the following required accessories to provide safe and reliable operation:

- Exhaust stacks – (85 feet high and 12 feet in diameter)
- Single two-cell cooling tower
- Inlet air chilling
- Inlet air filters
- Metal acoustical enclosure
- Lube oil cooler
- Water injection system
- Turbine enclosure vent fans
- Generator enclosure vent fans
- Fire detection and protection system

The plant will incorporate air pollution emission controls designed to meet the Best Available Control Technology's stringent standards as required by the State and the Bay Area Air Quality Management District (BAAQMD). These controls will include water injection for combustion control of nitrogen emissions, a selective catalytic reduction system (SCR) for post combustion control oxides of nitrogen emissions, and an oxidation catalyst system to control carbon monoxide and precursor organic compound emissions. (Ex. 55.)

There will be a variety of chemicals stored and used during construction and operation of the SFERP. They will be stored in appropriate chemical storage facilities, in storage tanks, or in returnable delivery containers. Chemical storage and chemical feed areas will be designed to contain leaks and spills. Berm and drain piping design will allow a full-tank capacity spill without overflowing the berms. (Ex. 46, pp. 3.2 to 3.4.)

CCSF intends to operate the proposed facility 24 hours per day, 7 days per week, up to a maximum of 12,000 total hours per year for the three combustion turbines combined. This is equivalent to each of the three turbines operating approximately 46 percent of the year. (Ex.1, sec. 2.4.1; Ex 46, p. 5.3-2.)[1]

3. Associated Facilities

The associated transmission facilities will consist of two underground 115-kV circuits extending approximately 3,000 feet from the project's 115-kV switchyard to the connection point at Pacific Gas and Electric Company's (PG&E) Potrero Substation to the northeast. These facilities include two underground-to-above-ground transition structures at the project site and the Potrero Substation connection point. PG&E is currently performing a Facilities Study to evaluate

[1] For example; 4,000 hours of operation times three turbines = 12,000 hours per year. The evidence of record is clear that the SFERP consists of three turbines, and specifically does not include a fourth which may be sited near the airport. (4/27/06 RT 50-56; Ex. 46, p. 4.1-15.)

whether the SFERP circuits will enter the switchyard underground from Illinois Street or continue underground north to 22nd Street. In the latter instance, circuits would then run east beneath 22nd Street to an underground/overhead transition structure located on the eastern portion of the Potrero switchyard. This overhead line would then connect with the switchyard bus. Electrical generation will be at 13.8 kV, which will be stepped up with 115-kV step-up transformers. Electric equipment insulating materials will be free of PCBs.

Natural gas will be transported via a pipeline tie-in to the existing PG&E natural gas transmission line at the intersection of Illinois and 25th streets. Natural gas for the facility will be delivered through a new 900-foot-long, 12-inch-diameter (or less) pipeline. This service will be connected to a booster compressor station that will be part of the SFERP facility.

The SFERP will obtain treated secondary effluent for cooling via a new pressurized pipeline leading to a manhole in the Southeast Waste Water Treatment Plant (SEWWTP) outfall located approximately 2,600 feet away. Onsite water treatment will be limited to tertiary treatment as follows: incoming secondary effluent water supply will go through ultra-filtration followed by disinfection, and then be passed through a single-stage reverse osmosis treatment system. The resultant final water quality will meet California's Title 22 tertiary recycled water requirements.

The new wastewater supply pipeline will likely be installed in a relatively shallow trench, with a total excavation depth of approximately 7 feet. The width will be approximately 5 feet. Wastewater from the water treatment process, cooling/process water blowdown, and sanitary sewer discharges will routed to the SEWWTP via the combined sewer system. The interconnection to the combined sewer system will be located in Cesar Chavez Street, on the south side of the project site.

Post-construction treatment of storm water will be accomplished by directing surface water flow from both the power plant site and 25th Street in front of the power plant into a storm water treatment feature incorporating a dry, vegetated swale. An oil/water separator may be used if deemed necessary through on-site review. The finished plant site will be an impervious surface, as is the existing street. Thus, all surface water will flow easterly to the vegetated swale that will flow northward into San Francisco Bay. (Exs. 1, 2, 10, 12, 15, 16, 17, 18, 19, 25, 29, 39, 45, 46; 4/27/06 RT 18-54.)

4. Project Ownership and Objectives

Applicant's policy objectives are contained in the San Francisco Electricity Resources Plan (marked for identification as Ex. 96) which establishes the following priorities:

- Maximize Energy Efficiency
- Develop Renewable Power
- Assure Reliable Power
- Support Affordable Electric Bills
- Improve Air Quality and Prevent Other Environmental Impacts
- Support Environmental Justice
- Promote Opportunities for Economic Development
- Increase Local Control Over Energy Resources

Applicant also maintains that it has an interest in closing down the existing Potrero Power Plant.[2]

To achieve these goals, including closure of existing generation within the City, the Electricity Resource Plan provides for development of a portfolio of new

[2] This potential action is also discussed in the **"Environmental Justice"** portion of the **Socioeconomics** and in the **Alternatives** sections, *infra.*

energy resources that includes energy efficiency improvements, renewable resources, distributed generation using renewable and clean technologies, transmission additions, and new highly-efficient and operationally flexible generation at appropriate sites. Working collaboratively, CCSF and the California Independent System Operator (CAISO) developed a "Revised Action Plan" which would facilitate/allow the release of the existing Potrero units from their "Reliability Must Run" (RMR) agreements. (Ex. 50, p. 3.) The SFERP is part of the generation component which would contribute toward achieving this goal.

Dispute has arisen, however, concerning the issue of whether the SFERP would actually result in the closure of Mirant's existing Potrero Unit 3. This issue has also been somewhat clouded by casual reference to the "need" for the SFERP. (See Applicant Opening Brief, pp. 8-10; Reply Brief, pp. 44-45; CARE Opening Brief, pp. 7-8; Reply Brief, pp. 8-10.)

From our perspective, it is necessary to understand two things. First, prior to January 1, 2000, the Public Resources Code directed the Commission to perform an "integrated assessment of need," taking into account 5 and 12-year forecasts of electricity supply and demand, as well as various competing interests, and to adopt the assessment in a biennial electricity report. In order to grant a license, the Commission was required to find that a proposed power plant was in conformance with the adopted integrated assessment of need for new resource additions. [former Pub. Resources Code, §§ 25523(f) and 25524(a).]

Effective January 1, 2000, Senate Bill 110 (Stats 1999, ch. 581) repealed Sections 25523(f) and 25524(a) of the Public Resources Code, and amended other provisions relating to the assessment of need for new generation resources. Specifically, this legislation removed the requirement that the Commission make a finding of need conformance in a certification Decision. As a result, an AFC (such as the present one) that reaches final Commission

decision after January 1, 2000, is not subject to a determination of need conformance.

Second, and as also discussed in other portions of this Decision, certification of the SFERP does not necessarily result in the closure of the existing Potrero units. While the SFERP may "facilitate" or "create the opportunity" for such closure, the evidence is clear that "…only the power plant owner (Mirant) can decide to retire their generator units." (Ex. 50, p. 3, lines 21-22.)

While we recognize the Applicant's desire to achieve this goal, it has in no way influenced our Decision. Rather, we have based our analysis on the project's objectively ascertainable elements. From our point of view, the closure of the Potrero units is largely irrelevant since, as discussed in appropriate portions of this Decision, all impacts of the SFERP are fully mitigated, with or without the continued generation at the Potrero site.

The evidence of record establishes that infrastructure improvements – a combination of both generation and transmission – are necessary to preserve electrical reliability in San Francisco. (Ex. 50, see **Local System Effects** section *infra*.) No evidence of record credibly challenges this fact.

5. Facility Closure

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

## FINDINGS AND CONCLUSIONS

Based on the evidentiary record, we find as follows:

1. The City and County of San Francisco, or a component thereof, will own and operate the SFERP project.

2. The SFERP project involves the construction and operation of a nominal 145 MW natural gas-fired, simple-cycle electrical generating facility in southeast San Francisco, California.

3. The SFERP will be used as a peaking facility, operating up to a maximum of 12,000 hours per year for the three combustion turbines combined.

4. The project includes associated transmission, gas supply, and water supply lines.

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

6. The project will permanently occupy approximately 4 acres of land owned by the City and County of San Francisco.

7. The SFERP will contribute to meeting the goals set forth in the San Francisco Electricity Resources Plan.

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

# II. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which represent the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.[6] (Cal. Code of Regs., tit. 14, §§ 15126.6(c) and (e); *see also*, tit. 20, § 1765.)

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 of 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*.)

Applicant provided an 'alternatives analysis' in the AFC and related data responses (Ex. 1, Vol. I, § 9.0; Exs. 3; 13; 15, §§ 3.0, 9.0), describing the site selection process and project configuration in light of project objectives. Staff included a similar analysis in the FSA. (Ex. 46, p. 6-1 et seq.) Intervenors CARE and Sarvey disagreed with the conclusions of the alternatives analysis; however, they failed to offer persuasive reasons for rejecting the methodology underlying the analysis or the evidence submitted in support of the analysis.

[6] Public Resources Code section 25540.6(b) requires an Applicant for a power plant such as the SFERP, 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. Based on the totality of the record and as reflected in our findings for each of the technical topics, the mitigated SFERP will not result in any significant adverse effects on the environment. Nevertheless, this alternatives analysis is necessary to ensure compliance with CEQA Guidelines and Commission regulations. (Cal. Code of Regs., tit. 14, § 15126.6 and tit. 20, § 1765.)

**SUMMARY AND DISCUSSION OF THE EVIDENCE**

Staff used the following methodology to analyze project alternatives:

- identified basic objectives of the project and its potentially significant adverse impacts (which are discussed by topic in this Decision);
- identified and evaluated alternative sites to determine whether an alternative site would mitigate impacts of the proposed site and whether an alternative site would create impacts of its own;
- identified and evaluated technology alternatives, including conservation and other renewable sources; and
- evaluated consequences of not constructing the project, i.e., the "No Project" alternative. (Ex. 46, p. 6-3.)

1. Objectives

The evidentiary record establishes that the project objectives are consistent with the recommendations contained in the San Francisco Electricity Resource Plan. (*See* 5/1/06 RT 24 et seq.; 5/31/06, pp. 220-223; Ex. 15, §§ 3.0, 9.0; Ex. 46, p. 6-4.) These objectives include:

- Improve CCSF's electricity reliability;
- Facilitate the shutdown of older, more polluting in-City generation; and
- Minimize local impacts of electrical generation.

The CCSF, PG&E, and CAISO extensively studied the local electrical infrastructure and concluded, in the San Francisco Action Plan[7] (marked for identification as Ex. 96), that SFERP is beneficial, in conjunction with a portfolio of resources, to maintain system reliability and provide a potential opportunity for

[7] The San Francisco Action Plan was developed by CAISO working with CCSF and other stakeholders to establish the conditions upon which existing generation at Hunters Point and Potrero would be released from "reliability must run" (RMR) contracts. The SF Action Plan involves the successful completion of 12 transmission projects by PG&E, four peaking power plants by CCSF, and the Mirant retrofit of Potrero Unit 3 with emissions control technology for its temporary operation. CAISO does not control the dates of completion of these projects, nor does it control the permanent shutdown of the existing Potrero generation. (Exs. 46, pp. 6-8 et seq; 50, p.3.)

the closure of existing older, inefficient power plant units. (Ex. 46, pp. 6-8 through 6-10; 5/31/06 RT 221-223.)

2. Alternative Sites

Staff's review of alternative sites was based on the following criteria:

- A site that would avoid or substantially lessen one or more of the potential significant effects of the project.
- A location on the San Francisco Peninsula north of PG&E's Martin Substation.[8]
- A four-acre site large enough to accommodate three turbines (the shape of the site would also affect its suitability).
- A site within a reasonable distance of the electric transmission system, natural gas supply, and water supply.
- A site that is available.
- A site that is not adjacent to moderate or high density residential areas, sensitive receptors (such as schools and hospitals), or recreation areas. (Ex. 46, p. 6-13.)

The evidence contains a detailed evaluation of six alternative options. These include three site alternatives (construction of the three turbines) at Brisbane, San Francisco International Airport (SFIA), or East Bay sites, two project alternatives (the Trans Bay Cable Project and the Potrero Power Plant Unit 7 Project), and the No Project alternative. An additional 24 alternatives were considered but eliminated from the analysis. (Ex. 46, p. 6-1 et seq.)

Staff's Alternatives Table 1, replicated below, lists all alternatives identified in the analysis, and states whether each was considered for detailed evaluation. (Ex. 46, pp. 6-7 and 6-8.)

[8] The requirement for new generation north of Martin Substation reflects CAISO's position that the existing Potrero power plants could be retired if at least three of the four combustion turbines available to San Francisco are located north of the Martin Substation. (Ex. 46, p. 6-13; 5/1/06 RT 24-25; 5/31/06 RT 232-234; Ex. 15, § 3.0.)

## ALTERNATIVES Table 1
## Alternatives Considered

| Alternative | Qualify? | If Not, Why Not? |
|---|---|---|
| **TECHNOLOGY ALTERNATIVES** | | |
| Demand Side Management | No | Already factored into electrical system planning |
| Distributed Generation | No | Technological, market, and regulatory barriers, as well as feasibility and timeliness concerns. Some types could cause significant environmental impacts and would not be consistent with project objectives |
| Renewable Resources | No | Feasibility and availability concerns. Some types could cause significant environmental impacts and would not be consistent with project objectives |
| Integrated Resource Alternative | No | Feasibility and reliability concerns |
| **ALTERNATIVE SITES** | | |
| **Applicant's Alternative Sites** | | |
| Cesar Chavez Site | No | No environmental benefit compared to proposed |
| Mirant Site | **Yes** | Considered as Potrero Power Plant Unit 7 in Appendix A |
| Illinois Street Site | No | No environmental benefit compared to proposed |
| Pier 70 Site | No | Greater impacts to historic resources; closer to residences |
| Western Pacific Site | No | Site would be laydown area for proposed SFERP; located on Port property with planned land use and public trust doctrine incompatibility issues |
| Larkin Substation vicinity | No | No space available |
| Mission Substation vicinity | No | No space available; proximity of residences |
| Hunters Point Substation vicinity | No | Proximity of residences |
| **Alternative Sites Identified by the Public** | | |
| Smaller Sites | No | Insufficient space or generation capacity for 3 turbines; potentially greater impacts |
| SF Airport Area | **Yes** | Considered as SFIA Alternative in Appendix A |
| NRG Steam Plant (Fifth & Jessie Streets) | No | Nearby residences; insufficient space for 3 turbines; cost prohibitive |
| Treasure Island | No | Incompatible land use and inadequate infrastructure (transmission lines, natural gas) |
| The Presidio | No | Visual and recreation impacts, incompatible land use, lack of infrastructure; and policy inconsistency with NPS |
| **Alternative Sites Considered in the SFEC FSA** | | |
| Innes Avenue | No | No environmental benefit compared to proposed |
| City Asphalt Plant | No | Too small for 3 turbines |
| SF Thermal Plant | No | Too small for 3 turbines |
| Hunters Point Power Plant | No | No environmental benefit; incompatible land use due to residences nearby |
| China Basin Stadium Site | No | Unavailable due to Mission Bay development underway |
| Mission Bay Development | No | Unavailable due to Mission Bay development underway |
| Rail Yard South of China Basin | No | Unavailable due to Mission Bay development underway |
| Cow Palace, Daly City | No | No environmental benefit (residential developments now surround available land) |
| Treasure Island | No | Inadequate infrastructure (transmission lines, natural gas) |

| Alternative | Qualify? | If Not, Why Not? |
|---|---|---|
| | | and geotechnical concerns related to building on fill |
| Hunters Point Naval Shipyard | No | Development plans underway for residential and other uses |
| West of PG&E's Martin Substation, Daly City | No | Inadequate land now available due to residential development |
| Tuntex Site, Brisbane | **Yes** | Considered as Brisbane Alternative in Appendix A |
| **Alternative Sites Considered in the Potrero Power Plant Unit 7 FSA** | | |
| Cargo Way Site | No | No environmental benefit compared to proposed |
| Gilman Avenue | No | Proximity of residences |
| Jamie Court, South San Francisco | No | Similar to SFIA Alternative |
| United Site at SFIA | **Yes** | Considered as SFIA Alternative in Appendix A |
| 3Com Park Area: Carroll Avenue | No | No environmental benefit compared to proposed |
| South San Francisco: Belle Air Road | No | Inadequate land available |
| 3Com Park, San Francisco | No | Timing of availability uncertain |
| **Alternative Sites/Projects Identified by Staff** | | |
| East Bay Alternative, Hayward | **Yes** | Considered in Appendix A |
| Potrero Unit 7 Power Plant (as proposed by Mirant) | **Yes** | Considered in Appendix A |
| Trans Bay Cable | **Yes** | Considered in Appendix A |

The analysis shows that, among the project alternatives analyzed, construction of Potrero Power Plant Unit 7 has the potential for greatest impacts. (Ex. 46, p. 6-43, et seq.) Proceedings on this project have, however, been terminated by the Commission. Of the alternative sites evaluated, the Brisbane alternative has the potential for greatest impacts and would have greater impacts compared with the proposed SFERP in the areas of noise, land use, traffic, visual resources, and water and soils, as well as concerns relating to transmission system engineering, and transmission safety and nuisance. (*Id*. at pp. 6-1, 6-18, et seq.)

The Trans Bay Cable Project, the Brisbane site, SFIA, and East Bay alternatives would fail to make closing aging in-City generation, potentially possible.[9] Because these alternatives would not result in generation within the CCSF, they

[9] Although the CCSF does not have an agreement with Mirant to close the Potrero plant, it is consulting with CAISO in an attempt to facilitate this goal. Mirant's cooling water permit for the Potrero plant will expire in 2008 unless Mirant can show that once-through cooling has no impact on the Bay (5/31/06 RT 221-222; Ex. 15, at p. 3-5 et seq.)

would not meet CAISO requirements for generation north of the Martin Substation. (Ex. 46, pp. 6-1, 6-25, 6-34, 6-36, 6-42.)

The Trans Bay Cable Project would be less environmentally intrusive than the SFERP (primarily because as a transmission project its operational impacts would be minor), but construction of the Bay Cable Project would cause greater impacts than the proposed project to aquatic biological resources, water and soil, traffic, and geological resources, as well as having greater transmission line safety and nuisance impacts. The Bay Cable Project would also not facilitate possible closure of in-City generation facilities. (Ex. 46, p. 6-55 et seq.) Staff's Alternatives **Table 2**, replicated below, compares the impacts of the alternative sites with the SFERP.

**ALTERNATIVES Table 2**
**Comparison of Impacts of Alternative Sites to the Proposed SFERP**

| Issue Area | | Brisbane Alternative | SFIA Alternative | East Bay Alternative | Potrero Unit 7 | Trans Bay Cable |
|---|---|---|---|---|---|---|
| **Environmental Assessment** | | | | | | |
| **Air Quality** | | Similar | Similar [for 3 turbines] | Similar | Less preferred | **Preferred** |
| **Biological Resources** | **Terrestrial** | Similar | Less preferred | Less preferred | Similar | Less preferred |
| | **Aquatic** | Similar | Less preferred | Less preferred | Less preferred (w/ once-through cooling)<br>Similar (w/hybrid) | Less preferred |
| **Cultural Resources** | | Similar | Slightly Preferred | Slightly Preferred | Similar | Less Preferred |
| **Hazardous Materials Management** | | Similar | Similar | Similar | Less preferred | **Preferred** |
| **Land Use** | | Less preferred | Similar | Similar | Less preferred | **Preferred** |
| **Noise** | | Less preferred | Less preferred | Similar | Less preferred | **Preferred** |
| **Public Health** | | Similar | Similar [for 3 turbines] | Similar | Less preferred | Similar |
| **Socioeconomics** | | Similar | Similar | Similar | Similar | **Preferred** |
| **Traffic and Transportation** | | Less preferred | **Preferred** | Similar | Less preferred | Less preferred |
| **Transmission Line Safety and Nuisance** | | Less preferred | Depends on transmission line routing | Less preferred | Less preferred | Less preferred |
| **Visual Resources** | | Less preferred | Similar | Similar | Less preferred | Similar |

| Issue Area | Brisbane Alternative | SFIA Alternative | East Bay Alternative | Potrero Unit 7 | Trans Bay Cable |
|---|---|---|---|---|---|
| **Waste Management** | Similar | Similar | Similar | Less preferred | Slightly preferred |
| **Water and Soils** | Less preferred | **Preferred** | Similar | Less preferred | Less preferred |
| **Worker Safety and Fire Protection** | Similar | Similar | Similar | Similar | **Preferred** |
| **Engineering Assessment** | | | | | |
| **Facility Design** | Similar | Similar | Similar | Similar | Similar |
| **Geology and Paleontology** | Similar | Similar | Similar | Similar | Less preferred |
| **Power Plant Efficiency** | Similar | Similar | Similar | **Preferred** | No impact |
| **Power Plant Reliability** | Similar | Similar | Similar | Slightly less preferred | No impact |
| **Transmission System Engineering** | Less preferred | Less preferred | Less preferred | **Preferred** | Less Preferred |

3. No Project Alternative

CEQA requires an evaluation of the No Project alternative "… to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." (14 Cal. Code Regs., § 15126.6(e)(1).) The No Project analysis assumes: (a) that baseline environmental conditions would not change because the proposed project would not be installed; and (b) that the events or actions reasonably expected to occur in the foreseeable future would occur if the project were not approved. While no project-related impacts would be created under the No Project scenario, all potential project-related impacts are mitigated to insignificant levels under the SFERP proposal.

The evidentiary record indicates that the No Project alternative is not superior to the proposed project because it would neither facilitate the possible closure of existing generation[10] or, more importantly, provide enhanced reliability for San Francisco's electrical supply. (Ex. 46, p. 6-74 et seq.; Ex. 15, §§ 3.0, 9.0.) SFERP will also further relieve congestion in the local power grid and result in loss savings. (Ex.43, p. 6-75 et seq; See **Local System Effects** section.)

The evidence also establishes that the SFERP will enhance local system reliability while discharging lower levels of NOx for each energy unit generated compared with the existing, older generation facilities. These older facilities release larger quantities of NOx than the proposed facility and have questionable reliability due to older technology. Further, the SFERP's simple cycle configuration provides operating flexibility in dispatching power to meet system requirements. Existing facilities produce air emissions all the time compared with a simple cycle facility that only emits when

[10] The SF Action Plan specifies that Potrero Power Plant Unit 3 may be released from the applicable RMR agreement after the three turbines that comprise SFERP and a fourth combustion turbine at the SFIA are installed. Although the City cannot guarantee the closure of the Potrero Plant, it is the City's objective to achieve this goal. (Ex. 15, § 3.0; 5/31/06 RT 220-223.) It appears unlikely that Potrero Unit 3 would be closed if the No Project scenario is adopted. (Ex. 43, pp. 6-76 and 6-77.)

operating. Thus, environmental impacts from the No Project alternative would include greater NOx emissions because newer power plants, including the proposed project, would not be available to displace production from older, higher NOx-emitting plants. (Ex. 43, p. 6-82.) Thus, Intervenor Sarvey's contention that the SFERP has greater local impacts than the existing Potrero Unit 3 (Opening Brief, p. 7) is simply not supported by the evidence. (See Applicant Reply Brief, pp. 9-11.)

4. Intervenors

Intervenors' witness, Mr. Martin Homec, claimed that in-City generation would not be necessary after the Jefferson-Martin Transmission Project is complete. (Ex. 97.) Mr. Homec relied on testimony from a CPUC proceeding on the Jefferson-Martin project in which a PG&E witness (Mr. Manho Yeung) was asked about closure of the Hunters Point Power Plant but not specifically about the Potrero Plant.[11] (*Ibid*.) We find that the Intervenors' reliance on an unrelated CPUC proceeding is beyond the scope of this case. As the Committee ruled, and we affirmed,[12] testimony from an unrelated proceeding, where the discussion was focused on different issues, does not provide relevant or illuminating context for purposes of this Decision. The parties in the instant case did not have the opportunity to cross-examine the PG&E witness regarding the SFERP or the need for in-City generation in the future. Further, Intervenors' witness, Mr. Homec, admitted that he has no expertise in transmission planning. (5/31/06 RT 259-80.) In our view, Mr. Homec's testimony is based on speculation, or at best, misinterpretation of Mr. Yeung's testimony. In any event, CAISO has determined that in-City generation is necessary to reliably operate the SF grid. (5/1/06 RT, pp. 24-25.)

Intervenors also contend that the three SFERP turbines as well as the SFIACTP turbine should be sited at the SFIA since, they argue, in-City generation is not required and the SFIA is not located near residential housing. (Ex. 97.) The evidentiary record does not

[11] Exhibit 59, reporter's transcript from January 12, 2004, California Public Utilities Commission hearing, pages 373–471, marked for identification purposes only.

[12] Commission Order No. 06-0802-10a. (August 2, 2006).

support intervenors' claims; indeed, the record indicates that the SFIA alternative site would not satisfy project objectives to provide in-City generation. (5/31/06 RT 232 et seq.) Further, the SFERP, as discussed in other portions of this Decision, will not result in any significant environmental impacts, including impacts upon nearby residential areas. (See **Environmental Justice** portion of **Socioeconomics** section.)

5. Alternative Fuels and Technologies

Applicant presented evidence on alternative fuels, including: oil and natural gas, nuclear, hydroelectric, geothermal, biomass, solar, and wind energy. (Ex. 15, § 9.7.) However, none of these alternatives is feasible in San Francisco due to unavailability (hydro, geothermal, wind, or solar), environmental impacts (oil and gas or biomass), and/or legal prohibitions (nuclear). (*Id*.)

Applicant also reviewed alternative technologies for air pollution control and combustion modification, including: the XONON catalytic combustor, selective non-catalytic reduction (SNCR), non-selective catalytic reduction (NSCR), and SCONOx. None of the alternative pollution control technologies is more effective than that proposed for the project due to their lack of commercial viability in a scaled-up project and/or their technological infeasibility for a peaking unit. (Ex. 15, § 9.6; Staff Opening Brief, pp.13-14.) Applicant also considered the option of using an urea-based system to generate ammonia on-site, which would eliminate the need for transport and storage of ammonia used in the SCR system. However, this technology requires steam and cannot be employed for the simple cycle SFERP, which does not generate steam. (*Id*., at § 9.6.2.)

Therefore, the evidence shows that none of the alternative fuels or technologies is a feasible option.

## FINDINGS AND CONCLUSIONS

Based upon the 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 is capable of meeting the stated project objectives.
5. The "no project" alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been established.
6. The "no project" alternative would not provide electrical system benefits.
7. Without the SFERP, it is less likely that existing generation in San Francisco could be closed in a timely fashion.
8. Without the SFERP, net emissions of NOx and $PM_{10}$ would be higher because other older, less efficient power plants (either inside or outside of CCSF) would be required to produce more power.
9. The No Project alternative could result in (1) siting a power facility elsewhere on the northern San Francisco Peninsula, and/or (2) constructing additional transmission facilities to meet necessary reliability criteria. Depending on their locations, these facilities may result in significant environmental impacts that cannot be mitigated.
10. The No Project alternative could result in reduced reliability for San Francisco's electrical supply.
11. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the SFERP will not create any significant direct, indirect, or cumulative adverse environmental impacts.

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

# III. COMPLIANCE AND CLOSURE

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

## SUMMARY OF THE EVIDENCE

The uncontested evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). (4/27/06 RT 64-67; Ex. 46, pp. 7.1 through 7.20.) The Plan is the administrative mechanism used to ensure that the SFERP 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 various general elements which:

- Set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- Set forth the requirements for handling confidential records and maintaining the compliance record;
- Establish procedures for settling disputes and making post-certification changes;

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

- Establish requirements for facility closure.

The Plan also contains the specific "Conditions of Certification". These are found following the summary and discussion of each individual topic area in this Decision. The individual conditions contain the measures required to mitigate to an insignificant level potentially adverse impacts associated with construction, operation, and closure of the project. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied.

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

## 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 San Francisco Electric Reliability 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 read 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
# INCLUDING
# COMPLIANCE MONITORING AND CLOSURE PLAN

## DEFINITIONS

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

## PRE-CONSTRUCTION SITE MOBILIZATION

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

## CONSTRUCTION GROUND DISTURBANCE

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

## CONSTRUCTION GRADING, BORING, AND TRENCHING

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

## CONSTRUCTION

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

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

## START OF COMMERCIAL OPERATION

For compliance monitoring purposes, "commercial operation" begins after the completion of start-up and commissioning, where the power plant has reached reliable steady-state production of electricity at the rated capacity. For example, at the start of

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

## COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

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

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

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

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

## PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

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

## ENERGY COMMISSION RECORD

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

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

## PROJECT OWNER RESPONSIBILITIES

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

## GENERAL CONDITIONS OF CERTIFICATION

### *Construction Milestones, Compliance Condition of Certification 1 (COMPLIANCE-1)*

The Monthly Compliance Report is the vehicle for notifying the CPM of applicable construction milestones, or for amending previously established milestones, for pre-construction and construction phases of the project. The project owner may also send a letter, an e-mail message, or make a phone call to notify the CPM of planned changes to the milestones.

A. ESTABLISH PRE-CONSTRUCTION MILESTONES TO ENABLE START OF CONSTRUCTION (WITHIN ONE YEAR OF CERTIFICATION WHEN REQUIRED)

1. Obtain site control
2. Obtain financing

B. ESTABLISH CONSTRUCTION MILESTONES FROM DATE OF START OF CONSTRUCTION

1. Begin pouring major foundation concrete
2. Begin installation of major equipment
3. Complete installation of major equipment
4. Begin gas pipeline construction
5. Complete gas pipeline interconnection
6. Begin T-line construction
7. Complete T-line interconnection

The CPM will negotiate the above-cited pre-construction and construction milestones with the project owner based on an expected schedule of construction. The CPM may agree to modify the final milestones from those listed above at any time prior to or during construction if the project owner demonstrates good cause for not meeting the originally established milestones.

C. A FINDING THAT THERE IS GOOD CAUSE FOR FAILURE TO MEET MILESTONES WILL BE MADE IF ANY OF THE FOLLOWING CRITERIA ARE MET:

1. The change in any milestone does not change the established commercial operation date milestone.
2. The milestone will be missed due to circumstances beyond the project owner's control.
3. The milestone will be missed, but the project owner demonstrates a good-faith effort to meet the project milestone.
4. The milestone will be missed due to unforeseen natural disasters or acts of God that prevent timely completion of the milestones.
5. The milestone will be missed due to requirements of the California ISO.

## *Unrestricted Access (COMPLIANCE-2)*

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

## *Compliance Record (COMPLIANCE-3)*

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

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

## *Compliance Verification Submittals (COMPLIANCE-4)*

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 mitigation or other evidence of mitigation.

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

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

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

All submittals shall be addressed as follows:

**Compliance Project Manager**
**California Energy Commission**
**1516 Ninth Street (MS-2000)**
**Sacramento, CA 95814**

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

## *Pre-Construction Matrix and Tasks Prior to Start of Construction (COMPLIANCE-5)*

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

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 Final Decision

## COMPLIANCE REPORTING

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

### *Compliance Matrix (COMPLIANCE-6)*

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

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

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

### *Monthly Compliance Report (COMPLIANCE-7)*

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

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

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix showing the status of all Conditions of Certification and pre-construction and construction milestones (fully satisfied conditions do not need to be included in the matrix after they have been reported as closed);
4. a list of conditions and milestones 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 or milestones;
9. a listing of the month's additions to the on-site compliance file;
10. any requests to dispose of items that are required to be maintained in the project owner's compliance file; and
11. a listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolution of the resolved complaints, and the status of any unresolved complaints.

## *Annual Compliance Report (COMPLIANCE-8)*

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 and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;
4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings 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 General Conditions for Facility Closure addressed later in this section]; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.

## *Confidential Information (COMPLIANCE-9)*

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

## *Annual Energy Facility Compliance Fee (COMPLIANCE-10)*

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual fee which may be adjusted annually. The initial payment is due on the date the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9$^{th}$ St., Sacramento, CA 95814.

## *Reporting of Complaints, Notices, and Citations (COMPLIANCE-11)*

Prior to the start of construction, the project owner must send a letter to property Owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to

passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:

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

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

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

## FACILITY CLOSURE

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

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

## CLOSURE DEFINITIONS

### *Planned Closure*

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

### *Unplanned Temporary Closure*

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

### *Unplanned Permanent Closure*

An unplanned permanent closure occurs if the project owner closes the facility, suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner remains accountable for implementing the on-site contingency plan. It

can also include unplanned closure where the project owner is unable to implement the contingency plan and the project is essentially abandoned.

## GENERAL CONDITIONS FOR FACILITY CLOSURE

### *Planned Closure (COMPLIANCE-12)*

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 prior to commencement of closure activities (or other period of time agreed to by the CPM). The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; 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 Energy Commission approval of the facility closure plan is obtained.

### *Unplanned Temporary Closure/On-Site Contingency Plan (COMPLIANCE-13)*

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. The status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

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

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

## *Unplanned Permanent Closure/On-Site Contingency Plan (COMPLIANCE-14)*

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

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

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

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

## CBO DELEGATION AND AGENCY COOPERATION

In performing construction 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 could include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

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

## NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution

process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by current law or regulations.

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

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

### Request for Informal Investigation

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

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

**Request for Informal Meeting**

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or corrective measures proposed or undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

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

### *Formal Dispute Resolution Procedure-Complaints and Investigations*

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

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

## POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION: AMENDMENTS, OWNERSHIP CHANGES, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES (COMPLIANCE-15)

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. **It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.** Implementation of a project

modification without first securing Energy Commission or Energy Commission staff approval may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **insignificant project changes** as specified below. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's Docket 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.

## AMENDMENT

The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, Section 1769, when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a Condition of Certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards the petition will be processed as a formal amendment to the Final Decision, which requires public notice and review of the Energy Commission staff analysis, and approval by the full Commission. This process takes approximately two to three months to complete, and possibly longer for complex project modifications.

## CHANGE OF OWNERSHIP

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

## INSIGNIFICANT PROJECT CHANGE

Modifications that do not result in deletions or changes to Conditions of Certification, 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.

# KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

| **EVENT DESCRIPTION** | **DATE** |
|---|---|
| Certification Date/Obtain Site Control | |
| Online Date | |
| ***POWER PLANT SITE ACTIVITIES*** | |
| Start Site Mobilization | |
| Start Ground Disturbance | |
| Start Grading | |
| Start Construction | |
| Begin Pouring Major Foundation Concrete | |
| Begin Installation of Major Equipment | |
| Completion of Installation of Major Equipment | |
| First Combustion of Gas Turbine | |
| 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 | |

**GENERAL CONDITIONS TABLE 1**
**COMPLIANCE SECTION**
**SUMMARY of GENERAL CONDITIONS OF CERTIFICATION**

| CONDITION NUMBER | SUBJECT | DESCRIPTION |
|---|---|---|
| COMPLIANCE-1 | Construction and Operation Milestones | The project owner shall establish specific performance milestones for start of construction and commercial operation phases of the project. |
| COMPLIANCE-2 | Access | The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site. |
| COMPLIANCE-3 | 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. |
| COMPLIANCE-4 | 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 or the project owner or his agent. |
| COMPLIANCE-5 | Pre-construction Matrix and Tasks Prior to Start of Construction | Construction shall not commence until the all of the following activities/submittals have been completed:<br>▪ property Owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns,<br>▪ a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction,<br>▪ all pre-construction conditions have been complied with,<br>▪ the CPM has issued a letter to the project owner authorizing construction. |
| COMPLIANCE-6 | Compliance Matrix | The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance Conditions of Certification. |
| COMPLIANCE-7 | 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. |

| CONDITION NUMBER | SUBJECT | DESCRIPTION |
|---|---|---|
| COMPLIANCE-8 | 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. |
| COMPLIANCE-9 | Confidential Information | Any information the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit. |
| COMPLIANCE-10 | Annual fees | Payment of Annual Energy Facility Compliance Fee |
| COMPLIANCE-11 | Reporting of Complaints, Notices and Citations | Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations. |
| COMPLIANCE-12 | 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. |
| COMPLIANCE-13 | 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. |
| COMPLIANCE-14 | 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. |
| COMPLIANCE-15 | 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:<br>AFC Number: |
| **COMPLAINT LOG NUMBER** _____<br>Complainant's name and address:<br><br>Phone number: |
| Date and time complaint received:<br>Indicate if by telephone or in writing (attach copy if written):<br>Date of first occurrence: |
| Description of complaint (including dates, frequency, and duration): |
| Findings of investigation by plant personnel:<br><br>Indicate if complaint relates to violation of a CEC requirement:<br>Date complainant contacted to discuss findings: |
| Description of corrective measures taken or other complaint resolution:<br><br>Indicate if complainant agrees with proposed resolution:<br>If not, explain:<br><br>Other relevant information: |
| If corrective action necessary, date completed:<br>Date first letter sent to complainant: _____(copy attached)<br>Date final letter sent to complainant: _____(copy attached) |
| This information is certified to be correct.<br>Plant Manager's Signature: _____ Date: |

(Attach additional pages and supporting documentation, as required)

# IV. ENGINEERING ASSESSMENT

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

## A. FACILITY DESIGN

The review of facility design covers several technical disciplines, including the civil, electrical, mechanical, and structural engineering elements related to project design, construction, and operation. The evidence presented on this topic was uncontested. (4/27/06 RT 67-68; Exs. 1, 2, 3, 9, 15, 19, 20, 21, 46, pp. 5.1-1 through 5.1-23.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The AFC describes the preliminary facility design. (Ex. 1.) In considering the adequacy of the design plans, the Staff reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project.

We have adopted Conditions of Certification that establish a design review and construction inspection process to verify compliance with applicable standards and requirements.[13] In addition, the Conditions of Certification specify the roles,

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

qualifications, and responsibilities of engineering personnel who will oversee project design and construction. They require approval by the Chief Building Official (CBO) after appropriate inspections by qualified engineers, and no element of construction subject to CBO review may proceed without the CBO's approval. (Ex. 46, p. 5.1-4.)

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

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

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. 46, p. 5.1-3.) Condition **CIVIL-1** ensures that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production as well as facilities used for storage of hazardous or toxic materials. (*Id*.) Condition **GEN-2** includes a list of 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 2001 CBC requires specific "lateral force" procedures for different types of structures to determine

their seismic design. To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1** requires the project owner to submit its proposed procedures to the CBO for review and approval prior to the start of construction. (Ex. 46, p. 5.1-3.)

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

Finally, the evidence also addresses project closure. (Ex. 46, p. 5.1-5.) To ensure that decommissioning of the facility will conform with applicable LORS to protect the environment and public health and safety, the project owner shall submit a decommissioning plan. This plan is described in the general closure provisions of the Compliance Monitoring and Closure Plan contained in Part III of this Decision.

## FINDINGS AND CONCLUSIONS

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

1. The San Francisco Electric Reliability Project is currently in the preliminary design stage.

2. The evidence of record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision. This will occur through the use of design review, plan checking, and field inspections.

3. The Conditions of Certification below and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of the planned, the unexpected temporary, or the unexpected permanent closure of the facility.

4. The Conditions of Certification set forth herein ensure that the project will be designed, constructed, and ultimately closed in a manner that protects environmental quality and public health and safety.

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

## CONDITIONS OF CERTIFICATION

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

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

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

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

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

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

**Verification:** At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 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)** |
|---|---|
| Combustion Turbine (CT) Foundation and Connections | 3 |
| CT Generator Foundation and Connections | 3 |
| SCR Stack Structure, Foundation and Connections | 3 |
| CT Main Transformer Foundation and Connections | 3 |
| CT Fire Protection Skid Foundation and Connections | 3 |
| Sprint System Skid Foundation and Connections | 3 |
| NOx Water Injection Skid Foundation and Connections | 3 |
| SCR/CO Catalyst System Structure, Foundation and Connections | 3 |
| CEMS Structure, Foundation and Connections | 3 |
| Chiller/Cooling Tower Package Foundation and Connections | 1 |
| Auxiliary Cooling Pumps Foundation and Connections | 2 |
| Cooling Tower Chemical System Foundation and Connections | 1 |
| Administration/Control Room/Plant Operations Building Structure, Foundation and Connections | 1 |
| Plant Air Compressor Package Foundation and Connections | 1 |
| Bulk Caustic Storage (if required) Foundation and Connections | 1 |
| Bulk Acid Storage (if required) Foundation and Connections | 1 |
| Bulk Sodium Hypochlorite Tank Structure, Foundation and Connections | 1 |
| EDI Train Foundation and Connections | 2 |
| EDI Feed Pump Skid Foundation and Connections | 1 |
| RO Clean in Place Skid Foundation and Connections | 1 |
| RO Feed Pump Skid Foundation and Connections | 1 |
| RO Train Foundation and Connections | 1 |
| RO Cartridge Filters Foundation and Connections | 1 |
| Ultra Filtration System Waste Skid Foundation and Connections | 1 |
| Ultra Filtration System Trains Foundation and Connections | 2 |
| Ultra Filtration System Pump Skid Foundation and Connections | 1 |
| Air Blowers Foundation and Connections | 2 |
| Chemical Metering System Foundation and Connections | 1 |
| Equalization Tank Structure, Foundation and Connections | 1 |
| Bio Reactor Structure, Foundation and Connections | 1 |
| Ultra Filtration Permeate Tank Structure, Foundation and Connections | 1 |
| Aqueous Ammonia Forwarding Pumps Foundation and Connections | 2 |
| Aqueous Ammonia Storage Tank Structure, Foundation and Connections | 1 |
| RO Permeate Tank Structure, Foundation and Connections | 1 |
| Treated Water Pumps Foundation and Connections | 2 |

| Equipment/System | **Quantity (Plant)** |
|---|---|
| Treated Water Storage Tank Structure, Foundation and Connections | 1 |
| Oil/Water Separator Foundation and Connections | 1 |
| Waste Water Sump and Lift Station Foundation and Connections | 1 |
| DI Water Pumps Foundation and Connections | 2 |
| DI Water Storage Tank Structure, Foundation and Connections | 1 |
| Turbine Wash Water Drain Tank Structure, Foundation and Connections | 1 |
| Natural Gas Inlet Scrubber | 1 |
| Hydrocarbon Drain Tank Structure, Foundation and Connections | 1 |
| Discharge Filter Scrubbers Foundation and Connections | 2 |
| Fuel Gas Compressors Foundation and Connections | 4 |
| Fuel Gas Cooling Radiators Foundation and Connections | 4 |
| Natural Gas Metering Station Foundation and Connections | 1 |
| Hydrocarbon Drain Tank Foundation and Connections | 1 |
| 13.8kV/115kV GSUs Foundation and Connections | 3 |
| Auxiliary Transformers Foundation and Connections | 2 |
| Fire Blast Walls Structure, Foundation and Connections | 3 |
| Switchgears Structure, Foundation and Connections | 2 |
| Station Service Transformer Foundation and Connections | 4 |
| Retaining Wall Structure, Foundation and Connections | 1 |
| Reclaimed Water Treatment Building Structure, Foundation and Connections | 1 |
| Supplemental Aeration Blowers Foundation and Connections | 2 |
| Membrane Air Scour Blowers Foundation and Connections | 2 |
| Drain Pump Foundation and Connections | 1 |
| Permeate Pumps Foundation and Connections | 2 |
| Mixed Liquor Recirculation Pumps Foundation and Connections | 2 |
| CIP/Backpulse Pumps Foundation and Connections | 2 |
| CIP/Backpulse Tank Structure, Foundation and Connections | 1 |
| DIP Tank Recirculation/Drain Pumps Foundation and Connections | 2 |
| DIP Tank Structure, Foundation and Connections | 2 |
| Membrane Tanks Structure, Foundation and Connections | 2 |
| Feed Channel Structure, Foundation and Connections | 1 |
| Combined Inlet System Structure, Foundation and Connections | 1 |
| Potable Water Systems | 1 Lot |
| Drainage Systems (including sanitary drain and waste) | 1 Lot |
| High Pressure and Large Diameter Piping and Pipe Racks | 1 Lot |
| HVAC and Refrigeration Systems | 1 Lot |
| Temperature Control and Ventilation Systems (including water and sewer connections) | 1 Lot |

| Equipment/System | **Quantity (Plant)** |
|---|---|
| Building Energy Conservation Systems | 1 Lot |
| Switchyard, Buses and Towers | 1 Lot |
| Electrical Duct Banks | 1 Lot |

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

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

**GEN-4** Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer, or civil engineer as a resident engineer (RE) to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are specified in 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 each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

1. Monitor construction progress of work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all the facilities subject to CBO design review and inspection conforms in every material respect to the

applicable LORS, these conditions of certification, approved plans, and specifications;

3. Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;
4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

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

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

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

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

**GEN-5** Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a soils engineer, or a geotechnical engineer, or a civil engineer experienced and knowledgeable in the practice of soils engineering; and C) 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: D)

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; E) a mechanical engineer; and F) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are specified in 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 (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

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

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

A. The civil engineer shall:

1. Review the Foundation Investigations Report, Geotechnical Report or Soils Report prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;
2. Design, or be responsible for design, stamp and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and
3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes in the construction procedures.

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

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

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

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare 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 2001 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both).

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 with all of the mechanical engineering design requirements set forth in the Energy Commission's 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 timeframe) prior to the start of rough grading, the project owner shall submit to the CBO, for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

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

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

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

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

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Observe the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM for corrective action [2001 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and
4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

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

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

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

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

The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

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

**GEN-8** The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project [2001 CBC, Section 106.4.2, Retention of Plans]. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts 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 final approved engineering plans, specifications, and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

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 printing privileges (i.e. password protected), 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 Report, Geotechnical Report or Foundation Investigations Report required by the 2001 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering

Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

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

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

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

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

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

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

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

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

**STRUC-1** Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 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;
3. Large field fabricated tanks;
4. Turbine/generator pedestal; and

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications

for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications [2001 CBC, Section 108.4, Approval Required];

3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [2001 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents];
4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer [2001 CBC, Section 106.3.4, Architect or Engineer of Record]; and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to the applicable LORS [2001 CBC, Section 106.3.4, Architect or Engineer of Record].

**Verification:** At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 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 are in compliance with the requirements set forth in the applicable engineering LORS.

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

1. 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 procedure and results,

welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2001 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

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

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

**STRUC-3** The project owner shall submit to the CBO design changes to the final plans required by the 2001 CBC, Chapter 1, Section 106.3.2, Submittal documents and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

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

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

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

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

**MECH-1** The project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations for each plant major piping and plumbing system listed in **Facility Design Table 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 said construction [2001 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 2001 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

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

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

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

**Verification:** At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 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 the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

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

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the ASME Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

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

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

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

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

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

**ELEC-1** Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations [CBC 2001, Section 106.3.2, Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [2001 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All

transmission facilities (lines, switchyards, switching stations, and substations) are specified in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A. Final plant design plans to include:

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

B. Final plant calculations to establish:

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

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

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

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

## B. POWER PLANT EFFICIENCY

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

### SUMMARY AND DISCUSSION OF THE EVIDENCE

Pursuant to CEQA Guidelines, Staff assessed whether the SFERP's use of natural gas would result in: 1) an adverse effect on local and regional energy supplies and resources; 2) the need for additional energy supply capacity; 3) noncompliance with existing standards; or 4) the wasteful, inefficient, and unnecessary consumption of fuel or energy. (Ex. 46, p. 5.3-2.)

Under average ambient conditions, the SFERP is expected to burn natural gas at a nominal rate of 1320 million Btu per hour LHV (lower heating value). Electricity will be generated at a full load efficiency of approximately 36 percent LHV with the combustion turbines operating at full load. (Ex. 1; sec. 2.2.6)

Natural gas will be supplied from the existing PG&E pipeline 101, via a new 12-inch diameter pipeline constructed from the PG&E tap point to the SFERP site. PG&E has confirmed its ability and willingness to provide the necessary quantities of natural gas. This source can provide much more natural gas than is actually required by the project. The project will thus not cause a substantial increase in demand for natural gas. (Ex. 46, p. 5.3-3.)

The evidence of record also shows that modern gas turbines represent the most fuel-efficient electric generating technology available. The General Electric

LM6000 SPRINT gas turbine generator used for this project is one of the most modern and efficient of such machines available. (Ex. 46, p. 5.3-4.)

The SFERP will be configured as three natural gas-fired turbine generators. This configuration provides short start-up time and fast ramping (increasing or decreasing electrical output to meet fluctuating load requirements) capability. When reduced output is required, one or two turbine generators can be shut down, allowing the remaining machine(s) to produce a percentage of the full power at optimum efficiency. (Ex. 46, p. 5.3-4.) The facility is expected to operate in peaking duty up to a combined total of 12,000 engine hours per year for the combination of all three combustion turbines. This is equivalent to each of the turbines operating approximately 46 percent of the year.

The basic purposes of the SFERP are to provide local reliability service and peaking power. The evidence of record, confirmed by testimony elicited during cross-examination by intervenor Sarvey, establishes that the proposed simple-cycle turbine configuration is appropriate to meet these goals. (Ex. 46, p. 5.3-3; 4/27/06 RT 79; Applicant Opening Brief, pp. 18-19.)

**FINDINGS AND CONCLUSIONS**

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

1. The SFERP project will consist of three GE LM6000 SPRINT gas turbine generators. Under expected project conditions, the facility will operate in peaking duty up to a cumulative total of 12,000 engine hours per year for the three combustion turbines together.

2. Existing natural gas resources far exceed the fuel requirements of the project.

3. The SFERP 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 adverse impacts on energy resources.

The Commission therefore concludes that the San Francisco Electric Reliability Project will not cause any significant direct or indirect adverse impacts upon 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. Resources Code, § 25520(b); Cal. Code of Regs., tit. 20 § 1752(c)(2).] However, there are currently no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation. There was minimal discussion of this topic during the evidentiary hearings. (4/27/06 RT 80-94.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence indicates that a power plant is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely if the project exhibits reliability at least equal to that of other power plants on the system. Reliable operation is a combination of factors, i.e., the power plant should be available when called upon to operate and it should be expected to operate for extended periods without shutdown for maintenance or repairs. Project safety and reliability are achieved by ensuring equipment availability, plant maintainability with scheduled maintenance outages, fuel and water availability, and adequate resistance to natural hazards. (Ex. 46, p. 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. These include inventory review and equipment inspection, as well as testing on a regular basis during design, procurement, construction, and operation. Qualified vendors of plant equipment and materials will be selected based on past performance and independent testing contracts to ensure that reliable equipment is acquired.

The evidentiary record further indicates that the project's design includes appropriate redundancy of function. The project's three combustion turbine-

generators are configured as independent equipment trains. This provides inherent reliability allowing the facility to operate at reduced output in the event that a non-redundant component in one train should fail. Furthermore, all plant ancillary systems are also designed with adequate redundancy and 100 percent back-up of station service and auxiliary transformers. (Ex. 46, p. 5.4-3.) Project maintenance will be typical of the industry, including preventative and predictive techniques. Any necessary maintenance outages will be planned for periods of low electricity demand. (Ex. 46, p. 5.4-4.)

Reasonable long-term availability of fuel and water is also necessary to ensure project reliability. As discussed in the section on **Power Plant Efficiency**, PG&E will supply natural gas through its existing gas distribution system near the project site. The record indicates that this natural gas system offers adequate supply and pipeline capacity to meet project needs. To further enhance reliability, the project will interconnect with PG&E's system at a natural gas pipeline header. This enables the project to be supplied by any one of three natural gas pipelines. In addition, four 33 percent capacity natural gas booster compressors will be available to ensure an adequate fuel supply. (*Id*.)

The SFERP will use secondary treated effluent from San Francisco's Southeast Waste Water Treatment Plant. Recycled water for project uses such as gas turbine injection or inlet air chiller cooling will be produced from this effluent by a new tertiary water treatment system. Reclaimed water and demineralized water will be stored on-site to ensure continued plant operations in the unlikely event of a water supply interruption. (Ex. 46, pp. 5.4-4 to 5.4-5.)

The site is located in Seismic Zone 4. The SFERP will be designed and constructed to comply with current applicable LORS for seismic design. These standards improve seismic stability compared with older power plants, and ensure that the project will perform at least as well as existing plants in the

electrical system. The Conditions of Certification in the **Facility Design** section of this Decision ensure that the project will conform with seismic design LORS.

CCSF predicts the project will have an annual availability factor of 94 to 98 percent. Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council (NERC), show an equipment availability factor of 88.37 percent for gas turbine units of all sizes. (Ex. 46, p. 5.4-6.) The project's predicted availability factor appears reasonable since the GE LM6000 machines have been on the market for several years and exhibit typically high availability. The three parallel gas turbine generating trains will allow maintenance to be scheduled when full plant output is not required. Finally, the evidence shows that the procedures for design, procurement, and construction are in keeping with industry norms and will likely result in an adequately reliable plant. (*Id*.; 4/27/06 RT 79; Applicant Opening Brief, pp. 19-20.)

## FINDINGS AND CONCLUSIONS

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

1. Implementation of Quality Assurance/Quality Control programs during design, procurement, construction, and operation of the plant, 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 SFERP consists of three combustion turbine generators configured as independent equipment trains. This configuration provides inherent reliability.

4. The project's estimated 94 to 98 percent availability factor is consistent with industry norms for power plant reliability, and will improve electric system reliability in the San Francisco area.

5. 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. Resources Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The record indicates that the Applicant in this case accurately identified all necessary interconnection facilities.

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.

Staff's analysis evaluates the power plant switchyard, outlet line, termination and downstream facilities identified by the Applicant, and includes Conditions of Certification to ensure the project complies with applicable laws during the design review, construction, operation, and potential closure of the project. No additional new or modified transmission facilities, other than those proposed by the Applicant for the outlet configuration, are required for the interconnection of the SFERP project. No evidence of record disputes these matters. (4/27/06 RT 70-71; Exs. 1, 2, 3, 15, 19, 20, 21, 39, 46, pp. 5.5-1 to 5.5-27.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

San Francisco sits at the end of an essentially radial electric network in PG&E's transmission system. There are six PG&E transmission lines feeding San Francisco from the Peninsula (i.e. San Mateo County and parts of Santa Clara

County) with one line, the Jefferson-Martin 230 kV project, energized in May 2006.

1. Switchyard Configuration

The proposed power plant switchyard will consist of five circuit breakers in a 3-phase ring bus formation. Three of the circuit breakers will receive power from the generator transformers and the remaining two circuit breakers will connect to the Potrero substation. The latter interconnection will be through two three-phase 115 kV solid dielectric underground circuits (approximately 3,000-feet in length) and underground/overhead transmission structures located at the Potrero substation. The Applicant is seeking certification for two interconnection options: one would enter the Potrero Substation from Illinois Street and the other from 22nd Street. The evidence shows that the transmission and distribution facility configurations are in accordance with good utility practices. (Ex. 46, p. 5.5-3.)

2. Study Results

The evidence of record details various studies[13] which were performed to assess the project's impacts upon the transmission system.

Four studies, the System Impact Study (SIS), the Facilities Study, the Updating Facilities Study, and the Feasibility/Updating Facilities Study II, have been completed by PG&E and are briefly summarized below. Even though these studies did not analyze the SFERP exactly as it is currently proposed,[14] the

[13] Impacts from a smaller project will be equivalent to, or less than, those of a larger project. (Ex. 46, p. 5.5-4, footnote 2.)

[14] PG&E completed several transmission studies for the SFERP. One assumed the project as originally proposed by the Applicant and included four simple-cycle gas turbines (195 MW) at the Potrero site. Both PG&E and the CAISO agreed that an additional study of three turbines at the current proposed site was not necessary because the study of four turbines was already completed and showed that there were no adverse affects on the transmission system.

evidence establishes that the study results are still applicable to the proposed SFERP interconnections at the Potrero Substation. The SFERP received Final Interconnection Approval from the CA ISO on June 27, 2005. (Ex. 46, p. 5.5-4.)

The SIS analyzed four turbines (195 MW) with a proposed interconnection at the Potrero substation. The SIS evaluated the impacts of SFERP under two scenarios:

- 2005 PG&E Summer Peak base case with 1-in-10 year peak load conditions for the San Francisco/Peninsula area. Hunters Point Unit 4 was available in the "without SFERP" case and unavailable in the "with SFERP" case.
- 2005 PG&E Fall base case with loads approximately 96-percent of those used in the Summer Peak case and Potrero Unit 3 unavailable due to overhaul.

The SIS included Steady State Power Flow analysis, Dynamic Stability studies, and Short Circuit studies.

The Facilities Study analyzed two 2005 Summer Peak cases with four turbines connected to the Potrero substation:

- Case one was exactly like the 2005 Summer Peak base case in the SIS.
- Case two studied four turbines with Mirant's Potrero Power Plant Unit 7 Project operating, Hunters Point Unit 4 unavailable, three Potrero-Hunters Point 115 kV cables operating, and the Jefferson-Martin 230 kV transmission line operating.

The Updating Facilities Study analyzed the SFERP under the following conditions:

- 2007 Summer Peak Base Case with 1-in-10 year summer heat wave load in the San Francisco/Peninsula area with three turbines (net output 145 MW) connected to the Potrero substation with Mirant's Potrero Power Plant Unit 7 operating, three 115 kV underground cables between the Potrero and Hunters Point substations operating, and the Jefferson-Martin 230 kV transmission line operating.

The Feasibility/Updating Facilities Study II analyzed whether or not it was feasible to connect the SFERP to the Potrero Substation through underground circuits from the new plant location, and then determined the cost for the interconnection.

The Power Flow Study results from the SIS, Facilities Study, and Updating Facilities Study indicate that interconnection and operation of the SFERP will have no adverse electrical system impacts and will require no downstream mitigation measures. (Ex. 46, pp. 5.5-4 to 5.5-5.) The results of the System Impact Study, the Facilities Study and the Updating Facilities Study did not identify any overloads and associated mitigation measures that would result from the interconnection and operation of the SFERP. (Ex. 4, p. 4.5-6.)

There are currently no proposed projects that would cumulatively create transmission system impacts with SFERP. The SIS for the SFERP analyzed the impacts of the four turbines available to the CCSF connected to the Potrero Substation and confirmed this. Finally, the evidence shows that locating a power plant like the SFERP in the San Francisco load center would reduce system losses or facilitate the shutdown of existing generators in the San Francisco Peninsula Area. This is also discussed in the topic of **Local System Effects.**

**FINDINGS AND CONCLUSIONS**

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

1. No new transmission lines, other than those proposed by Applicant, are required for the project.

2. The record includes a System Impact Study which analyzes potential reliability and congestion impacts that could occur when the SFERP interconnects to the grid.

3. The SFERP does not cause any normal or contingency condition overloads to the transmission grid.

4. The SFERP does not cause voltage criteria or system stability criteria violations.

5. The SFERP project switchyard and interconnection facilities will be adequate and reliable. The power plant switchyard, outlet lines, and termination are in accordance with good utility practices and are acceptable.

6. Adding local generation such as the SFERP will reduce transmission system losses. It could also facilitate the shutdown of existing generators in the San Francisco Peninsula region.

7. The existing circuit breakers are capable of handling the increase in fault level with the addition of the SFERP.

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

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 adverse direct, indirect, or cumulative impacts. The Conditions of Certification below ensure that the transmission-related aspects of the San Francisco Electric Reliability Project will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

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

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

| **Table 1: Major Equipment List** |
|---|
| Breakers |
| Step-up Transformer |
| Switchyard |
| Busses |
| Surge Arrestors |
| Disconnects |
| Take off facilities |
| Electrical Control Building |
| Switchyard Control Building |
| Transmission Pole/Tower |
| Grounding System |

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

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

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

The electrical engineer shall:

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

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

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

**TSE-3** If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. (1998 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall become a controlled document, 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 of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If corrective action is not approved, the project owner shall advise the CPM, within five days, of 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 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, CPUC General Order 98128 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", CA ISO standards, National Electric Code (NEC) and related industry standards.

1. The power plant switchyard shall consist of five circuit breakers in a 3-phase ring bus formation.
2. The outlet line shall consist of two approximately 3,000 foot solid dielectric underground circuits and an overhead/underground structure.
3. The outlet line shall enter the existing Potrero Substation from either Illinois Street or 22nd Street.

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

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

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

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

f) The project owner shall provide to the CPM:

1. The final Detailed Facility Study (DFS) including a description of facility upgrades, operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,
2. Executed project owner and CA ISO Facility Interconnection Agreement

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

a) Design drawings, specifications, and calculations conforming with CPUC General Order 95, CPUC General Order 98128 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", NEC, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.

b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions,"[15] 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, CPUC General Order 98128 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards.

c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering

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

description of equipment and the configurations covered by requirements **TSE-5** a) through f) above.

d) The final DFS, including a description of facility upgrades, operational mitigation measures, and/or SPS sequencing and timing if applicable, shall be provided concurrently to the CPM.

**TSE-6** The project owner shall inform the CPM and CBO of any impending changes which may not conform to the requirements **TSE-5** a) through f), and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM. The CBO and CPM could approve changes in equipment or interconnection design that comply CPUC General Order 95, CPUC General Order 98128 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 and do not require a new System Impact Study or Facility Study.

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

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

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

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

**TSE-8** The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC General Order 95, CPUC General Order 98128 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO, in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

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

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC General Order 95, CPUC General Order 98128 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", and applicable interconnection standards, NEC, related industry standards, and these conditions shall be provided concurrently.

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

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

## E. LOCAL SYSTEM EFFECTS

From a transmission perspective, the San Francisco Peninsula area is composed of the City and County of San Francisco and the area between Pacific Gas & Electric's San Mateo substation and San Francisco. Major transmission lines feed the area through the San Mateo and Martin substations; these connect to the 230 kV system.

The San Francisco Peninsula receives its power from several sources. Part of the demand is served by power generated locally by San Francisco generation. Part of the San Francisco Peninsula load is served by power generated elsewhere and delivered to the San Mateo Substation from 230 kV transmission lines connected to the Tesla, Newark via the Ravenswood substation. Another part of the demand is met through power delivered to the San Mateo substation via two 230 kV transmission lines crossing San Francisco Bay. Finally, power will also be delivered from the Metcalf substation up the Peninsula from a new Jefferson-Martin 230 kV line. This power will flow northward along the Peninsula from the San Mateo and Jefferson Substations to the Martin Substation via two 230kV transmission lines and six 115kV transmission lines. (Ex. 46, pp. 5.6-2 to 5.6-4.)

The operation of the existing power plants in San Francisco has long been contentious. In 1998, the CCSF and PG&E agreed that PG&E would shut down the Hunters Point Power Plant as soon as it could do so without compromising the reliability of the transmission network. (5/1/06 RT 22.) Consequently, PG&E and the California Independent System Operator (CAISO) developed a list of reliability upgrades necessary to achieve this end. With Hunters Point now closed, the shut down of the existing Potrero Units has become a primary policy objective of CCSF. (Ex. 50, p.3.)

**SUMMARY AND DISCUSSION OF THE EVIDENCE**

The electrical load in the San Francisco Peninsula Area is served through the radial transmission system noted above. Thus, adequate generation and transmission capacity both within and into the area is required to provide the desired reliability of electrical service. The CAISO has determined that generation located within San Francisco is critical to the long-term ability to serve load in the Peninsula Area (Ex. 50, p.3), and that at least three combustion turbines must be located north of the Martin substation in order to provide electrical reliability essential for the City of San Francisco.[16] (5/1/06 RT 25:5-10.)

This generation is needed for reliability purposes in addition to other projects such as the TransBay cable. (5/1/06 RT 25-26, 58.) According to the CAISO's action plan (Ex. 50, Attachment 2; see also 5/1/06 RT 21-23), SFERP generation is likely a key component in facilitating the release of Potrero Unit #3 from its Reliability Must Run (RMR) contract and potentially ending the need for similar contracts with Potrero Units 4, 5, and 6. (Ex. 46, pp. 5.6-5 to 5.6-6.) Furthermore, generation from a unit such as the SFERP is required to mitigate for potentially overloading the Newark-Ravenswood 230 kV line upon an outage of the Tesla-Ravenswood 230kV line. (Ex. 50, p.3.)

The evidence of record details various scenarios which were analyzed in order to determine the effect of the SFERP upon transmission line losses. (Ex. 46, pp. 5.6-6 to 5.6-7.) The conclusion of the analysis indicates that addition of the SFERP can result in between 6 MW and 21 MW of system peak loss reductions. This is because importing more power into San Francisco instead of having generation located there would lead to greater losses on the system. (5/1/06 RT 42-43.) This amount of energy savings equates approximately with the amount

[16] Intervenor Sarvey contends the SFERP will not enhance reliability. (Reply Brief, pp. 11-16.) He offered no probative evidence to support this claim. This matter is also discussed in the **Alternatives** section, *supra.*

consumed by 4,100 homes, or a savings of $1.8 to $2.7 million per year. (Ex. 46, p. 5.6-7.)

Finally, the uncontroverted evidence of record establishes that the SFERP can be integrated into the existing and presently planned transmission system without triggering the need for major system additions or modifications. (Ex. 46, p. 5.6-8.)

No party offered credible testimony sufficient to rebut the evidentiary showing summarized above. Intervenor CARE, however, contends that the CAISO acted improperly and beyond its authority ("ultra vires") in "approving" the SFERP without first consulting with all other agencies, specifically including the Regional Water Quality Control Board (Regional Board; Opening Brief, pp. 4-7). CARE apparently believes this contention gains credibility, at least in part, since neither Staff's Opening Brief nor testimony on behalf of Applicant and Staff specifically refute the alleged impropriety by the CAISO. (CARE Reply Brief, pp. 7-8; Response to CEC Staff's Reply Brief, pp. 1-2.)

CARE's contentions are without merit and may be merely a misdirected attempt to bolster its position (discussed in the **SOIL AND WATER RESOURCES** section) that a final Regional Board analysis is required before we may certify the SFERP. As Applicant points out, the CAISO does not "approve" power plants, but rather administers matters related to interconnection with, and operation of, the grid. (Reply Brief, pp. 37-39.)

We are the agency charged with performing the overall environmental review. As such, we have incorporated Conditions of Certification which specify the manner in which input from the Regional Board will be coordinated with the analysis of mitigation for such potential impacts as the Regional Board may identify. This is not within the scope of the CAISO's responsibilities. Moreover, we will not address the jurisdictional question of whether we have authority to determine the propriety of an action by the CAISO, a nonprofit public benefit

corporation, other than to observe that we are unaware of any statute conferring such jurisdiction.[17]

## FINDINGS AND CONCLUSIONS

Based upon the persuasive weight of the credible expert testimony of record, we reach the following findings and conclusions:

1. Generation and transmission capacity are required, both entering into and located within the San Francisco Peninsula Area, in order to provide the area with an acceptable level of electrical reliability.

2. Generation must be located north of the Martin Substation in order to provide San Francisco with essential electrical reliability.

3. The SFERP is located north of the Martin Substation.

4. The TransBay Cable Project would not provide, for reliability purposes, electrical benefits equal to the combination of area transmission upgrades and generation located in San Francisco.

5. The SFERP will contribute to mitigating the potential for overloading the Newark-Ravenswood 230 kV line upon an outage of the Tesla-Ravenswood 230 kV line.

6. The SFERP results in a reduction of between 6 MW and 21 MW in transmission line losses.

7. The SFERP provides both real and reactive power to the electrical grid in the San Francisco area.

8. Integration of the SFERP into the transmission system will not require major system additions or modifications.

We therefore conclude that the SFERP conforms with grid planning criteria established by the CAISO, and will provide benefits to the electrical system in the San Francisco area. No Conditions of Certification are required.

[17] CARE appealed the CAISO action to the Federal Energy Regulatory Commission on July 17, 2006. In that filing, CARE acknowledges that "…the FERC, not the CEC oversees the CAISO…". (July 17, 2006 appeal, p. 3.)

## F. TRANSMISSION LINE SAFETY AND NUISANCE

The project's transmission lines must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This section summarizes the analysis of record concerning the potential impacts of the transmission tie-line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electromagnetic field exposure. The evidence presented was uncontested. (4/27/06 RT 68–70; Exhibits 1, 2, 3, 9, 15, 19, 21, 39, 46.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The San Francisco Electric Reliability project will be interconnected to the existing PG&E transmission grid via 3,000 feet of new 115 kV underground transmission line which will run to the existing Potrero Substation. The site and the route of the tie-line are within an industrial area, with the nearest residential neighborhood located approximately 1600 feet to the west.

The specific associated transmission components are:

- Two underground 115 kV circuits extending 1,950 feet from the project's 115 kV switchyard to the connection point at PG&E's Potrero Substation to the Northeast; and

- The project's on-site 115 kV switchyard and two related underground to above-ground transition structures at the project site and the Potrero Substation connection point.

The line's conductors will be encased in specific shields within a concrete casing buried according to PG&E practices (and in compliance with GO-128) to ensure safety, efficiency, and maintainability. This also allows the conductors to be closer together than with similar overhead lines, which in turn enhances the cancellation effects of fields from the individual conductors. The proposed

underground-to-aboveground transition structures at the Potrero Substation will be of dimensions typical to similar PG&E lines.

The route will begin from the project's switchyard and exit north from the site onto 25th Street, proceeding west along 25th Street until turning north onto Michigan Street. It will then turn west from Michigan Street onto 24th Street and proceed further to intersect Illinois Street. From there, it continues northward to the point of connection at the PG&E Potrero Switchyard. Two alternative routes for entry from Illinois Street into the Potrero Switchyard were analyzed.

1. Potential Impacts

Aviation Safety. Any potential hazard to area aircraft would relate to the potential for collision with the line or its support structures when they intrude into the navigable air space. The nearest airport is the Oakland International Airport which is about 6.5 miles to the east. The evidence shows that the underground line and related structures will not pose an obstruction-related aviation hazard to area aircraft as defined using current Federal Aviation Administration (FAA) criteria. Therefore, no FAA "Notice of Construction or Alteration" required. (Ex. 46, 4.11-5.)

The only related overhead project elements will be the two underground-to-aboveground transition structures located at the site and Potrero Substation. The height of these transition structures will not be more than those of the existing structures at the Substation, all of which are much shorter than the 200 feet regarded by the FAA as triggering concerns about aviation safety. The tie-line will also be in an energy production and transmission area with existing lines of similar voltage and structural dimensions.

Field Effects. The electric fields from power lines and similar sources produce two types of perceivable effects known as corona effects or field effects.

Interference with radio-frequency communication and audible noise result from the corona effects. Since electric fields are unable to penetrate most materials including the soil, such electric field effects are not associated with underground lines. (*Id*.)

Fire Hazards and Nuisance and Hazardous Shocks. There are no nearby combustible objects in the vicinity of the transmission structures, so fire hazards are minimal. However, hazardous shocks could result from direct or indirect contact between an individual and the energized line whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines. The evidence establishes that compliance with GO-128, as required by Condition of Certification **TLSN-1**, will satisfactorily mitigate any hazard. (Ex. 46, pp. 4.11-5 to 4.11-6.)

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. While the available evidence has not established that such fields pose a significant health hazard to exposed humans, neither does it serve as proof of a 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.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.
- The measures employed for such field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures.

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

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:

1. Increasing the distance between the conductors and the ground;
2. Reducing the spacing between the conductors;
3. Minimizing the current in the line; and
4. Arranging current flow to maximize the cancellation effects from interacting of conductor fields.

Not only does under grounding produce the lowest magnetic fields possible from a given line, the related close conductor placement also causes the intensity to diminish more rapidly with distance from the buried line than with the overhead counterpart at the same current flow rates. However, since the distance to the underground conductors would be less than from the exposed individual to the overhead counterpart, the individual's exposure level would be greater, although only within the smaller impact zone for the underground line. In the aggregate, such exposures are more likely to be short-term given the narrowness of the underground line's field impacts zone. Such short-term exposures are well known and understood, and not considered a significant health concern. (Ex. 46, p. 4.11–7.)

Under grounding also achieves the close conductor placement listed above. Since this would be implemented according to PG&E's standards and practices

(which comply with GO-128), no additional mitigation before construction or mitigation-driven field strength measurements after the line is energized is needed. Similarly, since the proposed under grounding would yield magnetic fields of the lowest intensity possible for lines of the proposed voltage and current-carrying capacity, any contribution to cumulative area exposures would be at the lowest levels currently possible for such lines without affecting safety, reliability, efficiency, and maintainability. (Ex. 46, p. 4.11–8.)

Given the shorter impact zone of underground line magnetic fields, the extent of their related long-term residential exposures is much less than for similar overhead lines. Therefore, the evidence establishes that the proposed under grounding is the most effective field strength reduction method.

**FINDINGS AND CONCLUSIONS**

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

1. The proposed line will be placed underground. This ensures that the electric and magnetic fields generated are managed to an acceptable extent, given the available health effects information.

2. Long-term electromagnetic field exposure is insignificant in this case because of the general absence of residences along the proposed route and the under grounding of the tie-line. On-site worker or public exposure will be short-term and at levels expected for lines of similar design and current-carrying capacity. This type of exposure has not been established as posing a significant human health hazard.

3. The potential for nuisance shocks will be minimized through under grounding the project's lines and other field-reducing measures.

4. The evidence establishes that no potential fire hazards associated with the project's lines exist.

5. Neither the proposed underground tie-line nor the associated transition structure pose a significant aviation hazard.

6. Under grounding minimizes the potential for corona noise and its related interference with radio-frequency communication.

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

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

**CONDITION OF CERTIFICATION**

**TLSN-1** The project owner shall provide specific evidence that the proposed interconnection transmission line will be designed and constructed by the City and County of San Francisco according to the requirements of CPUC's GO-95, GO-128, Title 8, Section 2700 et seq. of the California Code of Regulations and PG&E's EMF reduction guidelines arising from CPUC Decision 93-11-013.

**Verification:** At least 30 days before starting construction of transmission lines or related structures and facilities, the project owner shall submit to the Compliance project Manager (CPM) a letter affirming that the SFERP line will be constructed according to the requirements of GO-128, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations, and PG&E's EMF-reduction guidelines arising from CPUC Decision 93-11-013.

# V. PUBLIC HEALTH AND SAFETY ASSESSMENT

Operation of the SFERP 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.

Applicant and Staff reached agreement on all relevant issues, including the Conditions of Certification following this narrative. (Exs. 46, 48.) Intervenor CARE also stipulated to the analysis of these matters contained in Staff's testimony. (5/22/06 RT 304-305: 3-4.) Intervenor Sarvey, however, attempted to persuade the Committee that the analysis of record was flawed on a number of grounds, including an inadequate cumulative impacts analysis and ineffective mitigation measures. (Sarvey Opening Brief, pp. 2-7; Reply Brief, pp. 1-10, 25-28; July 21, 2006 Reply Brief to Staff Late Filing, pp. 5-16.)

Our examination of the record leads us to the conclusion that intervenor Sarvey's contentions are unsupported by the evidence. Applicant (Opening Brief, pp. 30-52; Reply Brief, pp. 5-25) and Staff (Opening Brief, pp. 3-15; Reply Brief, pp. 1-5) each thoroughly discount this intervenor's assertions. We have therefore

included only the most salient points of the relevant discussion in the next section.

### 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 California Air Resources Board (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 in **AIR QUALITY Table 1**.

**AIR QUALITY Table 1**
**Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | Federal Standards | |
|---|---|---|---|---|
| | | | Primary | Secondary |
| Ozone($O_3$) | 1-hour | 0.09 ppm (180 $\mu g/m^3$) | 0.12 ppm (235 $\mu g/m^3$) | Same as primary |
| Particulate Matter ($PM_{10}$) | Ann.Geo. Mean | 20 $\mu g/m^3$ | --- | Same as primary |
| | 24-hour | 50 $\mu g/m^3$ | 150 $\mu g/m^3$ | |
| | Ann.Arit. Mean | --- | 50 $\mu g/m^3$ | |
| Fine Particulate Matter (PM2.5) | 24-hour | No separate standard | 65 $\mu g/m^3$ | Same as primary |
| | Ann.Arit. Mean | 12 $\mu g/m3$ | 15 $\mu g/m^3$ | Same as primary |
| Carbon Monoxide (CO) | 1-hour | 20 ppm (23 $mg/m^3$) | 35 ppm (40 $mg/m^3$) | None |
| | 8-hour | 9 ppm (10 $mg/m^3$) | 9 ppm (10 $mg/m^3$) | |
| Nitrogen Dioxide ($NO_2$) | 1-hour | 0.25 ppm (470 $\mu g/m^3$) | --- | Same as primary |
| | Ann.AritMean | --- | 0.053 ppm (100 $\mu g/m^3$) | |
| Lead(Pb) | 30-day | 1.5 $\mu g/m^3$ | --- | Same as primary |
| | Cal. Quarter | --- | 1.5 $\mu g/m^3$ | |

| | | | | |
|---|---|---|---|---|
| Sulfur Dioxide ($SO_2$) | Ann.Arit. Mean | --- | 0.03 ppm (80 $\mu g/m^3$) | --- |
| | 24-hour | 0.04 ppm (105 $\mu g/m^3$) | 0.147 ppm (365 $\mu g/m^3$) | --- |
| | 3-hour | --- | --- | 0.5 ppm (1300 $\mu g/m^3$) |
| | 1-hour | 0.25 ppm (655 $\mu g/m^3$) | --- | --- |
| Sulfates | 24-hour | 25 $\mu g/m^3$ | No federal standard | |
| $H_2S$ | 1-hour | 0.03 ppm (42 $\mu g/m^3$) | No federal standard | |

Source: Exhibit 46, p. 4.1-7.

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.

Currently, the Bay Area Air Quality Management District (BAAQMD or District) and the CARB measure ambient air quality concentrations for $NO_x$, VOC, CO, $PM_{10}$, $PM_{2.5,}$ and $SO_{2.}$ These measurements are taken at the Arkansas Street monitoring station, located about one-half mile northwest of the SFERP site.[18] Although Intervenor Sarvey contends that use of this monitoring site is inappropriate (Opening Brief, pp. 4-5.), expert testimony establishes that there are no meaningful differences in pollutant levels if measured at different locations

[18] Lead, sulfates and hydrogen sulfide ($H_2S$) are not measured at this monitoring station because the responsible regulatory agencies believe that the area is attainment for these air contaminants.

in the project vicinity. (5/22/06 RT 233, 260-61; Ex. 46, pp. 4.1-8 to 4.1-9; see also, Applicant Reply Brief, pp. 5-7; Staff Opening Brief, p. 8.)

The BAAQMD is classified as "attainment" for the state $NO_2$ standard, the state one and eight hour CO standards, and the federal annual and 24-hour $PM_{2.5}$ standards. (Ex 46, pp. 4.1-10 to 4.1-12.) The District is classified as a "non-attainment" for the state 1-hour ozone standard and the state 24-hour $PM_{10}$ standard.[19] (Ex. 46, pp. 4.1-10, 4.1-12.) The BAAQMD meets applicable standards for all other criteria pollutants; hence, its efforts are focused on meeting the ozone and the PM standards. (Staff Opening Brief, pp. 3-4.)

The SFERP will emit $NO_x$, VOC (volatile organic compounds), $SO_x$, CO, and $PM_{10.}$ Construction and operation of the SFERP will result in 15.2 tpy of PM emissions which will contribute to the existing violation of applicable state standards. (Ex. 46, p. 4.1-17.) Project construction will also result in short term CO and PM emissions, chiefly from grading and operation of diesel equipment. (Ex. 46, pp. 4.1-17 to 4.1-18.) Thus the SFERP could contribute to existing violations of the state ozone and PM standards. (Ex. 46, p. 4. 1-20; Applicant Opening Brief, p. 35.)

There is no dispute that the project will use the Best Available Control Technology (BACT). Each combustion turbine will limit the $NO_X$ emissions to 2.5 ppm @ 15 percent $0_2$ through the use of water injection and selective catalytic reduction (SCR); a catalyst system on each turbine will maintain CO emissions at no more than 4 ppm. (Ex. 48, Table 3.)

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[19] Although CARB has recently adopted an annual $PM_{2.5}$ standard of 12 $\mu g/mm^3$ , it has not determined the attainment status of any district. Adoption of a new 24-hour $PM_{2.5}$ standard has been deferred. (Ex. 46, p. 4.1-12.)

Precursor organic compounds will be limited to 2.0 ppmvd (averaged over three hours), and $SO_2$ and $PM_{10}$ emissions will be controlled through use of natural gas as a fuel. (Ex. 55, p. 8.1-50.) Ammonia emissions from the exhaust stack ("ammonia slip") are limited to no more than 10 ppm, a level which the record establishes both meets District requirements and is the lowest feasible rate for a peaking facility such as the SFERP. (Ex. 46, p. 4.1-49; Ex. 55, p. 24; see Applicant Opening Brief, pp. 46-49; Staff Opening Brief, p. 12 – 13.)

The SFERP will be limited during operation to emissions of 39.8 tons of $NO_x$, 27.9 tons of CO, 7.7 tons of POC, [20] 15.2 tons of $PM_{10}$, and 2.7 tons of $SO_2$ annually. (Ex. 46, p. 4.1-16; Ex. 48 Table 3; Condition of Certification **AQ 21**.) Furthermore, the project will mitigate emissions of the ozone precursors ($NO_x$ and POC/VOC) by using 47.5 tons of $NO_x$ emission reduction credits from the nearby Potrero power plant site. (5/22/06 RT 221; Ex. 46, p. 4.1-20.) Intervenor Sarvey apparently disagrees with the propriety of using these credits. (Ex. 74; see also Reply Brief, pp. 6-7.) As explained by both Applicant and Staff, however, use of ERCs in the present instance is proper and wholly consistent with federal and state plans for mitigating air emissions. (5/22/06 RT 226-27; Applicant Opening Brief, pp. 38-41; Staff Opening Brief, pp. 8-10.) CO emissions (for which the District is in attainment) will be adequately controlled by the use of BACT, and the project's level of $SO_2$ emissions. 2.7 tons per year is well below the level (100 tons per year) which would require offsets under District rules[21]. (Ex. 46. p. 4.1-10; Staff Opening Brief, pp. 10-11.) These matters are confirmed by the BAAQMD's revised Final Determination of Compliance. (Ex. 55; see also Applicant Opening Brief, pp. 30-32; Staff Opening Brief, pp. 3-5.)

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[20] POC (precursor organic compounds) and VOC (volatile organic compounds) are equivalent.

[21] Intervenor Sarvey continues to contend that $SO_x$ emissions remain unmitigated. (Reply Brief, pp. 6, 8; July 21, 2006 Reply Brief to Staff Late Filing, p. 10.)

BACT dictates that the turbines emission level for $PM_{10}$ will be restricted to no more than 2.5 lbs/hour. (Ex. 48; see also 5/22/06 RT 228-29.) In addition, and to address $PM_{10}$ and $PM_{2.5}$ emissions from operation, Applicant will provide 23.6 tpy of $PM_{10}$ offsets. These will be realized from an enhanced street sweeping program designed to remove dust from the street, at about a 1.5:1 ratio when compared to project emissions, and thus reduce overall PM levels in the project vicinity. (5/22/06 RT 223-24; Ex. 48; Applicant Opening Brief, p. 37.) In response to community concerns, Applicant will also institute an extensive tree planting program and an indoor program focusing on improving air quality in area residences, especially those of asthmatics. (5/21/06 RT 224.)

Applicant will further mitigate $PM_{2.5}$ emissions by implementing a program to subsidize area homeowners in replacing wood stoves/fireplaces with natural gas or propane fueled units.[22] (Ex. 46, p. 4.1-21; Condition of Certification **AQ-SC11**.) In case this replacement program is not implemented, Applicant is obligated to provide 36 tpy of $SO_x$ offsets to mitigate (at a 3:1 ratio) the $PM_{2.5}$ emissions. (5/22/06 RT 225-26; Ex. 48; Staff Opening Brief, pp. 10 – 11; Staff Reply Brief, p. 4; Condition of Certification **AQ-SC12**.)

Intervenor Sarvey asserts that the street sweeping PM mitigation agreed to by Applicant and Staff is inadequate since it rains in the vicinity during the winter months (when most violations of applicable standards occur), and that the use of regional $SO_x$ offsets does not mitigate local air quality impacts. (Opening Brief, pp. 5-6; Reply Brief, pp. 7-8, 25; July 21, 2006 Reply Brief to Staff Late Filing, p. 11.)

The record shows, however, that the methodology used to calculate the PM emission factors takes into account the frequency of rain. (Ex. 38; see Applicant

[22] Wood smoke is a major contributor to $PM_{10}$ standard violations, especially during the winter. (Ex. 46, p. 4.1-12.)

Reply Brief, pp. 7-9.) Moreover, direct expert testimony contradicts the intervenor's assertions regarding the effectiveness of the street sweeping mitigation (5/22/06 RT 252) and the intervenor introduced no credible testimony to the contrary. Intervenor's second point – that the $SO_x$ offsets are not necessarily local – simply disregards and implicitly disputes the accepted regional emphasis of state and federal air quality regulation strategies.

In sum, the evidence clearly establishes that the SFERP will meet the provisions of all applicable air quality laws, and will not cause any new violations of state or federal standards, even when modeled with worst case ambient concentrations. (Ex. 46, p. 4.1-19.) Thus, there are no direct adverse air quality impacts attributable to the project.

The evidence also establishes that a menu of mitigation measures, including the use of ultra-low sulfur diesel fuel low emission diesel engines, soot filters, and site fencing will apply in controlling the short-term PM impacts resulting from project construction. (Ex. 46, pp. 4.1-17 to 4.1-19; see Conditions of Certification **AQ –SC1 to AQ – SC5**.)

During our review of the proposed Conditions of Certification submitted by Staff and Applicant, we noted the emphasis placed on mitigating particulate emissions during construction. There is, however, one provision which baffles us. Proposed Condition **AQ-SC5** focuses on controlling emissions from diesel-fueled engines by mandating the use of ultra-low sulfur diesel fuel and, for those engines rated at greater than 100hp, by requiring they meet Tier 2 Emission Standards. If such engine is unavailable, then the condition may be satisfied by the use of a Tier 1 engine or by the use of a soot filter if practical.

Subsection (c) of the condition then lists four events which would make the use of these emission reducing measures impractical: unavailability, short-term use, impossibility, and ownership or operation by a Disadvantaged Business

Enterprise certified by the San Francisco Human Rights Commission [**AQSC5(c)(4)**].

The purpose of the condition is obviously to protect the environment and public health from potentially harmful diesel emissions to the greatest extent possible. Three of the limited exceptions recognize that pragmatic considerations (unavailability, short-term use, impossibility) may necessitate less than theoretically optimum emission control. We are puzzled, however, by the exception contained in **AQ-SC5(c)(4)** which states:

> "The CPM may grant relief from Tier 2 requirement for construction diesel engines, which have a rating of 100hp or more, if they are owned and/or operated by a Disadvantaged Business Enterprise certified by the San Francisco Human Rights Commission."

This exception does not seem to serve the same pragmatic purposes as do the others, nor does it seem to focus on protecting the environment and public health. While its social goal is no doubt admirable, we fail to see why ownership and/or operation of construction equipment should be a basis for relief from the duty to minimize air emissions. Presumably these emissions are potentially harmful regardless of who owns and/or operates the construction equipment.

Our present inclination is to strike subsection (c)(4) from condition **AQ-SC5.** We will, however, provide proponents of the subsection an opportunity to address this matter in their comments on this PMPD before making our final decision.

Finally, the record clearly establishes that Applicant and Staff addressed the issue of cumulative impacts by performing multiple analyses of the SFERP's impacts in combination with those of other projects. For example, Applicant conducted (Ex. 15; Opening Brief, pp. 34-36):

- A dispersion modeling analysis of worst-case project impacts added to worst-case measured ambient concentrations.

- A dispersion modeling analysis of the worst-case combined impacts of the project in combination with existing nearby power plants and reasonably foreseeable projects, added to worst-case measured ambient concentrations.

- A comparison of project emissions of the same pollutants from other, existing sources.

Staff did an independent two-part cumulative impact analysis, including both the "list" and "summary of projections" approaches mentioned in section 15130 of the CEQA Guidelines. (Ex. 46, pp. 4.1-21 to 4.1-30; Opening Brief, pp. 14–15.) The evidence shows that no matter which analysis one chooses, the conclusion is the same: with implementation of mitigation required in the Conditions of Certification, the SFERP will not cause, or contribute to, an adverse cumulative air quality impact.

Intervenor Sarvey, however, contends that the cumulative impact analyses are insufficient chiefly because, in his view, they fail to include all reasonably foreseeable projects. More specifically, the intervenor believes the analysis of record must, but did not, include projects identified in the Southern Waterfront Supplemental Environmental Impact Report (SEIR)[23] as well as the Illinois Street Bridge project. (Opening Brief, pp. 3-4, 13; Reply Brief, pp. 2-5; July 21, 2006 Reply Brief to Staff Late Filing, pp. 5-10.)

It is unclear to us in what respects the cumulative analysis of record is arguably deficient. As Applicant points out, each project identified in the SEIR must necessarily fall into one of the following categories (Opening Brief, p. 44.):

[23] The intervenor referenced this five year old document numerous times but, despite several requests, failed to provide a copy. Moreover, it is not part of the evidentiary record of the case, but was assigned "Exhibit 92B" for identification purposes only. (5/31/06 RT 44-45.)

- The project has been built, and its impacts are thus included in one of the cumulative air quality impact analyses prepared by the city because its emissions are reflected in the background data used by the City, and included in the baseline analysis. (Ex. 15, p. 8.1-44.)

- The project has not been built, but has an application pending before the BAAQMD, and the project was identified by the BAAQMD and explicitly analyzed in one of the cumulative impact analyses prepared by the City, and also included in the baseline analysis. (Ex. 15, vol. 2, Appendix 8.1F, pp. F-2 to F-8.)

- The project has not been built, has an application pending before the BAAMMD, but was not included in the cumulative impacts analysis because its emissions were below the de minimis levels identified in the City's cumulative impacts protocol.

- The project has not been built, and has not yet submitted an application to the BAAQMD, and therefore is no longer reasonably foreseeable.

Staff elaborates upon these points, confirming that projects identified in the SEIR which have been built are part of the existing ambient background and thus used in preparation of the cumulative analyses of record. (5/31/06 RT 230, 285, 287.) Moreover, some projects (e.g., the Illinois Bridge and MUNI projects) will result only in temporary construction emissions, some of which may have already occurred. (Reply Brief, p. 2.)

After considering these matters, we are satisfied that the cumulative impact analyses of record are more than sufficient to satisfy the requirements of CEQA. The impacts of the SFERP have been considered in conjunction with those actual and reasonably foreseeable projects. The SFERP's contribution to adverse impacts is less than cumulatively considerable and therefore less than significant since the Conditions of Certification require Applicant to implement appropriate measures to proportionately alleviate the project's contribution to any cumulative impact. [14 Cal. Code of Regs., §15130(a).] In addition, the persuasive (and uncontradicted) evidence of record establishes that nothing in the SEIR would change the ultimate conclusions by Applicant's and Staff's expert

witnesses that, as mitigated, the SFERP will not directly cause and will not contribute to significant adverse cumulative impacts. (5/31/06 RT 32-35; Ex. 46, p. 4.1-28; Applicant Reply Brief, pp. 25–26; Staff Reply Brief p. 3.)

## FINDINGS AND CONCLUSIONS

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

1. The proposed SFERP is located within the jurisdiction of the Bay Area Air Quality Management District.

2. The District is classified as non-attainment for the state 1-hour ozone, and the state 24-hour and annual $PM_{10,}$ standards. The District meets applicable standards for all other criteria pollutants.

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

4. Project emissions will be fully offset.

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

6. The project will not cause new violations of any $NO_2$, $SO_2$, or CO ambient air quality standards. Therefore, its $NO_x$, $SO_x$, and CO emission impacts are not significant.

7. The project's $NO_x$ and VOC emissions can contribute to the existing violations of the ozone standards. However, the required mitigation (in the form of emission reduction credits) will mitigate the project's impact to a level that is less than significant.

8. The project's $PM_{10}$ emissions can contribute to the existing violations of the state 24-hour $PM_{10}$ air quality standard. However, the required mitigation (in the form of $PM_{10}$ emission reduction credits) will mitigate the project's impacts to a level that is less than significant.

9. The project's fine particulate matter emission contribution will be mitigated to a level of less than significant by the implementation of the local street sweeping and the woodstove/fireplace replacement or modification programs, or by the surrender of sulfur oxide emission reduction credits.

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

11. The evidence establishes that an ammonia slip level of 10 ppm is appropriate for this peaking project.

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

13. The evidence of record does not establish that a reduction in the level of ammonia slip to 5 ppm from 10 ppm will lead to a reduction or elimination of a significant environmental impact.

14. The project's construction-related impacts are temporary and short-term in nature. They are mitigated to below a level of significance by measures identified in the Conditions of Certification.

15. Data gathered from the Arkansas Street monitoring station is appropriate to use in modeling air quality impacts in this case.

16. The record contains an adequate analysis of the project's contributions to cumulative air quality impacts.

17. Projects, which have been constructed, undergoing construction, or otherwise reasonably foreseeable and were identified in the Southern Waterfront SEIR have been considered in the cumulative impact analyses of record. Impacts arguably attributable to such projects do not alter conclusions reached concerning the SFERP's contribution to cumulative air quality impacts.

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

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

The Commission therefore concludes that the mitigation measures imposed are sufficient to ensure that the SFERP 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 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 an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with conditions **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.

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

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

b) No vehicle shall exceed 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 cleaned free of dirt prior to entering paved roadways.

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

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

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

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

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

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

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

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

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

n) Construction areas adjacent to any publicly accessible roadway shall be provided with an eight foot high temporary fence. This fence shall be lined with material (such as solid construction tarp) to prevent transport of fugitive dust to publicly accessible areas.

This fence can be removed after the end of the facility's construction period.

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

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

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

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the 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 project owner shall include in the Monthly Compliance Report (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-SC5** Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

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

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

c) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that item of equipment shall be equipped with a Tier 1 engine. In the event a Tier 1 item of equipment is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

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

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

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

4) The CPM may grant relief from Tier 2 requirement for construction diesel engines, which have a rating of 100 hp or more, if they are owned and/or operated by a Disadvantaged

Business Enterprise certified by the San Francisco Human Rights Commission.

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

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

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

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

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

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

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

**Verification:** The project owner shall include in the MCR: (1) a summary of all actions taken to maintain compliance with this condition; (2) copies of all diesel fuel purchase records; (3) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and (4) 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 surrender 47.5 tons of NOx from the emission offset credits certificate number 896 at the time that

surrender is required by condition **AQ-38**. The project owner may request CPM approval for any substitutions or modification of credits. The CPM, in consultation with the District, may approve any such change to the NOx ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) clearly will not cause the project to result in a significant environmental impact, and each requested change is consistent with applicable federal and state laws and regulations.

**Verification:** The project owner shall submit to the CPM a list of $NO_x$ ERCs to be surrendered to the District at least 60 days prior to initial startup. If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved $NO_x$ ERCs for the project.

**AQ-SC8** The project owner shall comply with all staff (AQ-SC) and district (AQ) Conditions of Certification. The CPM, in consultation with the District, may approve as an insignificant change any change to an air quality Condition of Certification, provided that: (1) the project remains in compliance with all applicable laws, ordinances, regulations, and standards; (2) the requested change clearly will not cause the project to result in a significant environmental impact; (3) no additional mitigation or offsets will be required as a result of the change; (4) no existing daily, quarterly, or annual permit limit will be exceeded as a result of the change; and (5) no increase in any daily or annual permit limit will be necessary as a result of the change.

**Verification:** The project owner shall notify the CPM in writing of any proposed change to a Condition of Certification pursuant to this condition and shall provide the CPM with any additional information the CPM requests to substantiate the basis for approval.

**AQ-SC9** If the project owner does not participate in the voluntary California Climate Action Registry, then the project owner shall report on a quarterly basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production as follows:

The project owner shall maintain a record of fuel use in units of million-Btus (mmBtus) for all fuels burned on-site for the purpose of power production. These fuels shall include but are not limited to: (1) all fuel burned in the combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), and (3) all fuels used in any capacity for the purpose of turbine 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 GHG 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 (VOC 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 following IPCC Global Warming Potentials (GWP): 310 for $N_2O$ (1 pound of $N_2O$ is equivalent to 310 pounds of $CO_2$) and 21 for $CH_4$.

The project owner shall maintain a record of all $SF_6$ that is used for replenishing on-site transformers. 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 of 23,900 for $SF_6$.

On a quarterly basis, the project owner shall report the $CO_2$ and $CO_2$ equivalent emissions from the described emissions of $CO_2$, $N_2O$, $CH_4$, and $SF_6$.

**Verification:** Any greenhouse gas emissions that are reported by the project owner to the California Climate action Registry or pursuant to this condition shall be reported to the CPM as part of the fourth Quarterly or the annual Air Quality Report.

**AQ-SC10** For as long as the project is in operation, the project owner shall provide daily street cleaning services using high-efficiency street sweepers for a total of no less than 9.6 miles of Third, Cesar Chavez, 16th, Illinois, Tennessee, Evans, 23rd, 25 streets and Pennsylvania Ave.

**Verification:** The project owner shall keep daily records of the street sweeping activities and shall submit to the CPM the quarterly and annual compliance reports as required by Condition **AQ-18**.

**AQ-SC11** The project owner shall provide an additional 4 TPY of $PM_{2.5}$ emission reduction credits by subsidizing the replacement or modification (blocking chimneys) of wood stoves or fireplaces.

**Verification:** At least 30 days prior to the start of any site clearing or ground disturbance activities, the project owner shall provide the CPM, for approval, a final plan to acquire 4 TPY of $PM_{2.5}$ emission reduction credits. The wood stove and fireplace replacement or modification programs must start after the plan approval, and no later than 60 days prior to initial startup.

**AQ-SC12** In lieu of compliance with Condition **AQ-SC11**, the project owner shall provide 36 TPY of $SO_x$ emission reduction credits acquired in the local Hunters Point and/or Potrero areas to provide an annual equivalent of 12 TPY of $PM_{2.5}$.

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

**DISTRICT CONDITIONS OF CERTIFICATION**

## *Permit Conditions*

**Definitions:**

| | |
|---|---|
| Clock Hour: | Any continuous 60-minute period beginning on the hour. |
| Calendar Day: | Any continuous 24-hour period beginning at 12:00 AM or 0000 hours. |
| Year: | Any consecutive twelve-month period of time |
| Heat Input: | All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in Btu/scf. |
| Rolling 3-hour period: | Any three-hour period that begins on the hour and does not include start-up or shutdown periods. |
| Firing Hours: | Period of time during which fuel is flowing to a unit, measured in fifteen-minute increments. |
| MM Btu: | million British thermal units |
| Gas Turbine Start-up Mode: | The lesser of the first 120 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of conditions 20(b) and 20(d). |

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

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

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

Corrected Concentration: The concentration of any pollutant (generally $NO_x$, CO, or $NH_3$) corrected to a standard stack gas oxygen concentration. For emission point P-1 (exhaust stack of S-1 Gas Turbine), emission point P-2 (exhaust stack of S-2 Gas Turbine) and P-3 (exhaust stack of S-3 Gas Turbine) the standard stack gas oxygen concentration is 15% $O_2$ by volume on a dry basis.

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

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

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

CEC CPM: California Energy Commission Compliance Program Manager

SFERP: San Francisco Electric Reliability Project

**CONDITIONS FOR THE COMMISSIONING PERIOD**

**AQ-1** The owner/operator of the SFERP shall minimize emissions of carbon monoxide and nitrogen oxides from S-1, S-2, and S-3, Gas Turbine Combustors to the maximum extent possible during the commissioning period. Conditions 1 through 12 will only apply during the commissioning period as defined above. Unless otherwise indicated, Conditions 13 through 42 will apply after the commissioning period has ended.

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

**AQ-2** At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall ensure that S-1, S-2, and S-3, Gas Turbine Combustors are tuned to minimize the emissions of carbon monoxide and nitrogen oxides.

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

**AQ-3** At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall install, adjust, and operate A-1 through A-6, SCR and Oxidation Systems, to minimize the emissions of carbon monoxide and nitrogen oxides from S-1, S-2, and S-3, Gas Turbine Combustors.

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

**AQ-4** Coincident with the as-designed operation of A-1 thru A-6, SCR and Oxidation Systems, pursuant to Parts 3, 8, 9 and 10 of this condition, the owner/operator shall ensure that the Gas Turbine Combustors (S-1, S-2, and S-3) comply with the $NO_x$ and CO emission limitations specified in Parts 20(a) through 20(d) of this condition.

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

**AQ-5** The owner/operator of the SFERP shall prepare a plan describing the procedures to be followed during the commissioning of the gas turbines. The plan shall be submitted the District Engineering Division and the CEC CPM at least four weeks prior to first firing of S-1, S-2, or S-3, Gas Turbine Combustors. 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 Water Injection system, the installation and operation of the SCR systems and oxidation

catalysts, the installation, calibration, and testing of the CO and $NO_x$ continuous emission monitors, and any activities requiring the firing of the Gas Turbine Combustors (S-1, S-2, and S-3) without abatement by their respective SCR and Oxidation Systems. No Gas Turbine Combustor (S-1, S-2, or S-3) shall be fired sooner than 28 days after the District receives the commissioning plan.

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

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

- firing hours for each gas turbine (S-1, S-2, and S-3)
- fuel flow rates to each train
- stack gas nitrogen oxide emission concentrations at P-1, P-2, and P-3
- stack gas carbon monoxide emission concentrations P-1, P-2, and P-3
- stack gas oxygen or carbon dioxide concentrations P-1, P-2, and P-3

The owner/operator shall monitor the parameters and record at least once every 15 minutes (excluding normal calibration periods or when the monitor source is not in operation) for the Gas Turbine Combustors (S-1, S-2, and S-3). The owner/operator shall use District-approved methods to calculate heat input rates, $NO_x$ (as $NO_2$) mass emission rates, carbon monoxide mass emission rates, and $NO_x$ and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

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

**AQ-7** The owner/operator shall install, calibrate, and properly operate District-approved continuous emission monitors specified in Condition 6 prior to the first firing of the Gas Turbine Combustors (S-1, S-2, and S-3). After first firing of the turbines, the detection range of these continuous emission monitors must be adjusted as necessary to accurately measure the resulting range of CO and $NO_x$ emission concentrations. The type, specifications, and location of these

monitors shall be subject to District review and approval (by the District's Source Test Section).

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

**AQ-8** The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-1, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-1, SCR System. Such operation of S-1, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District's Engineering and Enforcement Divisions, and the unused balance of the 100 firing hours without abatement shall expire.

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

**AQ-9** The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-2, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-3, SCR System. Such operation of S-2, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District's Engineering and Enforcement Divisions, and the unused balance of the 100 firing hours without abatement shall expire.

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

**AQ-10** The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-3, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-5, SCR System. Such operation of S-3, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District Engineering and Enforcement Divisions. And the unused balance of the 100 firing hours without abatement shall expire.

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

**AQ-11** The owner/operator shall calculate the total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, $PM_{10}$, and sulfur dioxide that are emitted by each Gas Turbine Combustor (S-1, S-2, and S-3) during the commissioning period. These emissions count towards the consecutive twelve-month emission limitations specified in Condition 23 of this condition.

**Verification:** The project owner shall submit in the monthly compliance report to the CPM specifying how this condition is being complied with.

**AQ-12** Prior to the end of the Commissioning Period, the owner/operator shall conduct a District- and CEC-approved source test using external continuous emission monitors to determine compliance with Condition 18 of this condition. The source test shall determine $NO_x$, CO, and POC emissions during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three start-up and three shutdown periods. No later than twenty working days before the execution of the source tests, the owner/operator shall submit to the District and the CEC Compliance Program Manager (CPM) a detailed source test plan designed to satisfy the requirements of this condition. The District and the CEC CPM will notify the owner/operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The owner/operator shall incorporate the District and CEC CPM comments into the test plan. The owner/operator shall notify the District and the CEC CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CEC CPM within 60 days of the source testing date.

**Verification:** No later than 30 working days before the commencement of the source tests, the project owner shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this condition. The District and the CPM will notify the project owner of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The project owner shall incorporate the District and CPM comments into the test plan. The project owner shall notify the District and the CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

**Conditions for the Gas Turbine Combustors (S-1, S-2, and S-3)**

**AQ-13** The owner/operator shall ensure that S-1, S-2 and S-3 gas turbine combustors are fired on PUC natural gas exclusively. (Basis: BACT for $SO_2$ and $PM_{10}$)

**Verification:** The project owner shall complete, on a monthly basis, a laboratory analysis showing the sulfur content of natural gas being burned at the

facility. The daily sulfur analysis reports shall be incorporated into the quarterly compliance reports.

**AQ-14** The owner/operator shall ensure that heat input rate to each Gas Turbine Combustor (S-1, S-2, and S-3) does not exceed 487.3 MM Btu per hour, averaged over one hour period. (Basis: 2-1-234)

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

**AQ-15** Except during the commissioning period, the owner/operator of S-1, Gas Turbine Combustor shall properly operate and properly maintain A-1, Selective Catalytic Reduction (SCR) and A-2, Oxidation Catalyst Systems whenever fuel is combusted at the source and the A-1 catalyst bed has reached minimum operating temperature. (Basis: BACT for $NO_x$ and CO)

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

**AQ-16** Except during the commissioning period, the owner/operator of S-2, Gas Turbine Combustor shall properly operate and properly maintain A-3, Selective Catalytic Reduction (SCR) and A-4, Oxidation Catalyst Systems whenever fuel is combusted at those sources and the A-3 catalyst bed has reached minimum operating temperature. (Basis: BACT for $NO_x$ and CO)

**Verification:** As part of the quarterly and annual compliance reports, the project owner shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

**AQ-17** Except during the commissioning period, the owner/operator of S-3, Gas Turbine Combustor shall properly operate and properly maintain A-5, Selective Catalytic Reduction (SCR) and A-6, Oxidation Catalyst Systems whenever fuel is combusted at the source and the A-5 catalyst bed has reached minimum operating temperature. (Basis: BACT for $NO_x$ and CO)

**Verification:** As part of the quarterly and annual compliance reports, the project owner shall provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

**AQ-18** The owner/operator of the Gas Turbine Combustors (S-1, S-2, and S-3) shall comply with requirements (a) through (h) below under all operating scenarios, except requirements (a) through (h) do not apply

during a gas turbine start-up or shutdown. (Basis: BACT and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated in accordance with District-approved methods) at each P-1, P-2, and P-3 (the exhaust point for each Gas Turbine abated by SCR and Catalyst Oxidation) shall not exceed or 0.0090 lb/MM Btu (HHV). (Basis: BACT for $NO_x$)

(b) The nitrogen oxide emission concentration at each P-1, P-2, and P-3 shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% $O_2$, averaged over any rolling 1-hour period. (Basis: BACT for $NO_x$)

(c) Carbon monoxide mass emissions at each P-1, P-2, and P-3 shall not exceed 0.0089 lb/MM Btu (HHV) of natural gas fired, averaged over any rolling 3-hour period. (Basis: BACT for CO)

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

(e) Ammonia ($NH_3$) emission concentrations at each P-1, P-2, and P-3 shall not exceed 10 ppmv, on a dry basis, corrected to 15% $O_2$, averaged over any one-hour period. The owner/operator shall verify, by continuous recording, the ammonia injection rate to A-1, A-3, and A-5, SCR Systems. The correlation between the gas turbine, A-1, A-3 and A-5, SCR System ammonia injection rates and the corresponding ammonia emission concentration at emission points P-1, P-2 and P-3 shall be determined in accordance with Part 25 of this condition. (Basis: TRMP for $NH_3$)

(f) Precursor organic compound (POC) mass emissions (as $CH_4$) at each P-1, P-2, and P-3 shall not exceed 0.0025 lb/MM Btu of natural gas fired. (Basis: BACT)

(g) Sulfur dioxide ($SO_2$) mass emissions at each P-1, P-2, and P-3 shall not exceed 0.0028 lb/MM Btu of natural gas fired. (Basis: BACT)

(h) Particulate matter ($PM_{10}$) mass emissions at each P-1, P-2, and P-3 shall not exceed 2.5 pounds per hour. (Basis: BACT)

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

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

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

(c) Date and time of the beginning and end of each startup and shutdown period.

(d) Average plant operation schedule (hours per day, days per week, weeks per year).

(e) All continuous emissions data reduced and reported in accordance with the District approved CEMS protocol.

(f) Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of $NO_x$, CO, $PM_{10}$, VOC and $SO_x$ (including calculation protocol).

(g) Fuel sulfur content (monthly laboratory analyses, monthly natural gas sulfur content reports from the natural gas supplier(s), or the results of a custom fuel monitoring schedule approved by the District.

(h) A log of all excess emissions, including the information regarding malfunctions/breakdowns.

(i) Any permanent changes made in the plant process or production, which would affect air pollutant emissions, and indicate when changes were made.

(j) Any maintenance to any air pollutant control system (recorded on an as-performed basis).

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

**AQ-19** The owner/operator shall not exceed the regulated air pollutant mass emission rates from each of the Gas Turbine Combustors (S-1, S-2, and S-3) during a start-up or a shutdown as established below. (Basis: BACT)

| | **Start-Up (Lb/hour)** | **Shutdown (lb/hour)** |
|---|---|---|
| Oxides of Nitrogen (as $NO_2$) | 40 | 40 |
| Carbon Monoxide (CO) | 10 | 10 |
| Precursor Organic Compounds (as $CH_4$) | 2 | 2 |

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-20** The owner/operator of the Gas Turbines (S-1, S-2 and S-3) shall not exceed the following daily limits for each turbine during any one calendar day. (Basis: Cumulative Increase)

| Daily Limits | lb/day |
|---|---|
| Oxides of Nitrogen (as $NO_2$) | 283 |
| Carbon Monoxide (CO) | 132 |
| Precursor organic Compounds (as $CH_4$) | 34 |
| Particulate Matter | 60 |
| Sulfur Dioxide ($SO_2$) | 33 |
| Ammonia ($NH_3$) | 156 |

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-21** The owner/operator shall ensure that the cumulative combined emissions from the Gas Turbine Combustors (S-1, S-2, and S-3) do not exceed the following limits during any consecutive twelve-month period, including emissions generated during gas turbine start-ups and shutdowns:

- 39.8 tons of $NO_x$ (as $NO_2$) per rolling 365 day period;
- 27.9 tons of CO per rolling 365 day period;
- 7.7 tons of POC (as $CH_4$) per rolling 365 day period;
- 15 tons of $PM_{10}$ per rolling 365 day period; and
- 2.7 tons of $SO_2$ per rolling 365 day period.

(Basis: Cumulative Increase)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-22** The owner/operator shall ensure that the maximum projected annual toxic air contaminant emissions from the Gas Turbine Combustors (S-1, S-2, and S-3) not exceed the following limits:

- 2,110 pounds of formaldehyde per year
- 235 pounds of acetaldehyde per year
- 21 pounds of acrolein per year
- 19 pounds of benzene per year

Unless the following requirement is satisfied:

The owner/operator shall perform a health risk assessment using the emission rates determined by annual source test and the most current Bay Area Air Quality Management District-approved procedures and unit risk factors in effect at the time of the analysis. This risk analysis shall be submitted to the District and the CEC CPM within 60 days of the source test date. The owner/operator may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the

satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (Basis: TRMP)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-23** The owner/operator shall demonstrate compliance with Conditions 14 through 15, 18(a) through 18(d), 19, 21(a), and 21(b) by using properly operated and maintained continuous monitors (during all hours of operation including equipment start-up and shutdown periods) for all of the following parameters in (a) through (d) below.

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

(b) Carbon Dioxide ($CO_2$) or Oxygen ($O_2$) concentrations, Nitrogen Oxides (NOx) concentrations, and Carbon Monoxide (CO) concentrations at each of the following exhaust points: P-1, P-2, and P-3.

(c) Ammonia injection rate at A-1, A-3, and A-5, SCR Systems

(d) Water or steam injection rate at S-1, S-2, and S-3 Gas Turbine Combustors

The owner/operator shall record all of the above parameters measured in (a) though (d) every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the owner/operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and average hourly pollutant emission concentrations. (Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

**Verification:** At least 30 days before first fire, the project owner shall submit to the CPM a plan on how the measurements and recordings required by this condition will be performed.

**AQ-24** The owner/operator shall use the parameters measured in Condition 23(a) through (d) and District-approved calculation methods to calculate the parameters below.

(a) Heat Input Rate for each of the following sources: S-1, S-2, and S-3.

(b) Corrected $NO_x$ concentrations, $NO_x$ mass emissions (as $NO_2$), corrected CO concentrations, and CO mass emissions at each of the following exhaust points: P-1, P-2, and P-3.

Applicable to emission points P-1, P-2, and P-3, the owner/operator shall record the parameters specified above at least once every 15 minutes (excluding normal calibration periods).
(Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

**Verification:** At least 30 days before first fire, the project owner shall submit to the CPM a plan on how the measurements and recordings required by this condition will be performed.

**AQ-25** As specified below, the owner/operator shall calculate and record the following data:

(a) total Heat Input Rate for every clock hour and the average hourly Heat Input Rate.

(b) on an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and all three sources (S-1, S-2, and S-3).

(c) the average $NO_x$ mass emissions (as $NO_2$), and corrected $NO_x$ emission concentrations for every clock hour.

(d) the average CO mass emissions and corrected CO emission concentrations for every rolling 3-hour period.

(e) on an hourly basis, the cumulative total $NO_x$ mass emissions (as $NO_2$) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine (S-1, S-2, and S-3) combined.

(f) for each calendar day, the average hourly Heat Input Rates, Corrected $NO_x$ emission concentrations, $NO_x$ mass emissions (as $NO_2$), corrected CO emission concentrations, and CO mass emissions for each Gas Turbine combined.

(g) On a daily basis, the cumulative total $NO_x$ mass emissions (as $NO_2$) and cumulative total CO mass emissions, for the previous consecutive twelve month period for all three sources (S-1, S-2, and S-3) combined.

(Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-26** To demonstrate compliance with Conditions **AQ-18(f), 18(g), 18(h), 21(c), 21(d) and 21(e)**, the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter ($PM_{10}$) mass emissions (including condensable particulate matter), and Sulfur Dioxide ($SO_2$) mass emissions from each power train. The owner/operator shall use the

actual Heat Input Rates calculated pursuant **AQ-28**, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, and CEC and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:

(a) For each calendar day, POC, $PM_{10}$, and $SO_2$ emissions shall be summarized for: each power train (S-1, S-2, and S-3) combined.

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

(Basis: Offsets, Cumulative Increase)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-27** To demonstrate compliance with Condition 22, the owner/operator shall calculate and record on an annual basis the maximum projected annual emissions of: Acetaldehyde, Acrolein, Formaldehyde and Benzene. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 5,847,600 MM Btu/year and the highest emission factor (pounds of pollutant per MM Btu of Heat Input) determined by any source test of the S-1, S-2, and S-3 Gas Turbine Combustors. (Basis: TRMP)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-28** Within 120 days of start-up of the SFERP, the owner/operator shall conduct a District-approved source test at the exhaust point P-1, P-2, or P-3 to determine the corrected ammonia ($NH_3$) emission concentration compliance with Condition **AQ-18**(e). The source test shall determine the correlation between the heat input rates of each gas turbine S-1, S-2, and S-3 and $NH_3$ mass emissions. (Basis: TRMP)

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

**AQ-29** The owner/operator shall determine the SCR System ammonia injection rate and the corresponding $NH_3$ emission concentration at emission point P-1, P-2, or P-3. The source test shall be conducted over the expected operating range of the turbine (including, but not limited to minimum, 70%, 85%, and 100% load) to establish the range of ammonia injection rates necessary to achieve $NO_x$ emission reductions while maintaining ammonia slip levels. Continuing compliance with **AQ-18**(e) shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test

correlation and continuous records of ammonia injection rate. (Basis: TRMP)

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

**AQ-30** Within 120 days of start-up of the SFERP and on an annual basis thereafter, the owner/operator shall conduct a District-approved source test on exhaust points P-1, P-2, and P-3 while each Gas Turbine Combustor is operating at maximum load to determine compliance with **AQ-18 (a), (b), (c), (d), (f), (g),** and **(h)**, while each Gas Turbine Combustor is operating at minimum load to determine compliance with Conditions **AQ-18(b**) and **(d)**, and to verify the accuracy of the continuous emission monitors required in **AQ-23**. The owner/operator shall test for (as a minimum): water content, stack gas flow rate, oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as $NO_2$), carbon monoxide concentration and mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter ($PM_{10}$) emissions including condensable particulate matter. (Basis: BACT offsets)

**Verification:** Approval of the source test protocols, as required in condition 32, and the source test reports shall be deemed as verification for this condition. The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

**AQ-31** Within 120 days of start-up of the SFERP and on a biennial basis (once every two years) thereafter, the owner/operator shall conduct a District-approved source test at the exhaust point P-1, P-2, or P-3 while the Gas Turbine Combustor is operating at maximum allowable operating rates to demonstrate compliance with **AQ-27**. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to Part 27 for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy trigger levels shown, then the owner/operator may discontinue future testing for that pollutant:

- Acetaldehyde $\leq$ 235 pounds/year
- Acrolein $\leq$ 21 pounds/year
- Benzene $\leq$ 19 pounds/year
- Formaldehyde $\leq$ 2110 pounds/year

(Basis: TRMP)

**Verification:** Approval of the source test protocols, as required in condition **AQ-16**, and the source test reports shall be deemed as verification for this condition. The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

**AQ-32** The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section and the CEC CPM prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section and the CEC CPM in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). As indicated above, the owner/operator shall measure the contribution of condensable PM (back half) to the total $PM_{10}$ emissions. However, the owner/operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District and the CEC CPM within 60 days of conducting the tests. (Basis: BACT)

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

**AQ-33** The owner/operator of the SFERP shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Basis: Regulation 2-6-502)

**Verification:** The project owner shall submit to the District and CPM the reports as required by procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual.

**AQ-34** The owner/operator of the SFERP shall maintain all records and reports on site for a minimum of 5 years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The owner/operator shall make all records and reports

available to District and the CEC CPM staff upon request. (Basis: Regulation 2-6-501)

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

**AQ-35** The owner/operator of the SFERP shall notify the District and the CEC CPM of any violations of these permit conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules and Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the owner/operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit condition. (Basis: Regulation 2-1-403)

**Verification:** Submittal of these notifications as required by this condition is the verification of these permit conditions. In addition, as part of the quarterly and annual compliance reports of **AQ-18**, the project owner shall include information on the dates when these violations occurred and when the project owner notified the District and the CPM.

**AQ-36** The owner/operator of SFERP shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval.
(Basis: Regulation 1-501)

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

**AQ-37** Within 180 days of the issuance of the Authority to construct for the SFERP, the owner/operator shall contact the BAAQMD Technical Services Division (Source Test Section) regarding requirements for the continuous monitors, sampling ports, platforms, and source tests required by parts **AQ-23, 28, 29, 30,** and **31**. All source testing and monitoring must be conducted in accordance with the BAAQMD Manual of Procedures or EPA methods. (Basis: Regulation 1-501)

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

**AQ-38** Prior to the issuance of the BAAQMD Authority to Construct for the SFERP, the owner/operator shall provide to the District valid emission reduction credit banking certificates in the amount of 45.8 tons/year of Nitrogen Oxides or equivalent as defined by District Regulations 2-2-302.1 and 2-2-302.2. (Basis: Offsets)

**Verification:** At least 30 days prior to issuance of the District's Authority to Construct, the project owner shall provide valid emission reduction credit banking certificates to the District and the CPM for approval.

**AQ-39** Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the owner/operator of the SFERP shall submit an application to the BAAQMD for a major facility review permit within 12 months of the issuance of the Authority to Construct. (Basis: Regulation 2-6-404.1)

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

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

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

**AQ-41** The owner/operator of SFERP shall comply with the continuous emission monitoring requirements of 40 CFR Part 60 or 75 (Appendix A; Specifications and Test procedures, and Appendix B; Quality Assurance and Quality Control Procedures). (Basis: Regulation 2, Rule 7)

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

**AQ-42** The owner/operator shall take monthly samples of the natural gas utilized at the SFERP and analyze for the sulfur content using District-approved laboratory methods, or shall obtain certified analytical results from the gas supplier. The sulfur content test results shall be retained on site for a minimum of five years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (Basis: Recordkeeping)

**Verification:** The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by **AQ-18**.

## 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.[24]

### SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants (TACs). These substances are categorized as noncriteria pollutants because there are no ambient air quality standards established to regulate their emissions.[25] In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from these emissions.

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the SFERP could emit to the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;

[24] This Decision discusses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in **HAZARDOUS MATERIALS MANAGEMENT** and **WORKER SAFETY AND FIRE PROTECTION**. Electromagnetic fields are discussed in the section on **TRANSMISSION LINE SAFETY AND NUISANCE**. Potential impacts to soils and surface water sources are discussed in the **SOIL AND WATER RESOURCES** section. Hazardous and non-hazardous wastes are described in **WASTE MANAGEMENT**.

[25] Criteria pollutants are discussed in the **AIR QUALITY** section, *supra*.

- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact;[26] and
- Characterize potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 46, p. 4.7-6.)

Typically, the initial risk analysis for a project is preformed at a "screening level" which is designed to conservatively estimate actual health risks. 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 which 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). (Ex. 46, p. 4.7-7.)

The risk assessment process addresses three categories of health impacts: acute (short-term) health effects; chronic (long-term) non-cancer effects; and cancer risk (also long-term). Acute health effects result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Chronic health effects are those which arise as a result of long-term exposure to lower concentrations of pollutants. The exposure period is considered to be

[26] Exposure pathways, or ways in which people might come into contact with toxic substances, include inhalation, dermal (through the skin) absorption, soil ingestion, consumption of locally grown plant foods, and mother's milk.

approximately from twelve to one hundred percent of a lifetime, or from eight to seventy years. (*Id*.)

The analysis for non-cancer 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. 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 which makes them more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effects reported, and include margins of safety.

For carcinogenic substances, the health assessment considers the risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over a 70-year lifetime. The risk that is calculated is not meant to project the actual expected incidence of cancer, but rather a theoretical upper-bound number based on worst-case assumptions. (Ex. 46, pp. 4.7-7 to 4.7-8.)

Cancer risk is expressed in chances per million, and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. Cancer risks for each carcinogen are added to yield total cancer risk. The conservative nature of the screening assumptions used means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated.

If the screening analysis predicts no significant risks, then no further analysis is required. However, if risks are above the significance level then further analysis, using more realistic, site-specific assumptions is performed to obtain a more accurate assessment of potential public health risks. (Ex. 46, p. 4.7-8.)

A total[27] hazard index of less than one indicates that cumulative worst-case exposures are less than, or below, the safe levels. Cancer risks are calculated based on the total risk from exposure to all cancer causing chemicals. A significant increased lifetime cancer risk occurs if one excess case of cancer in an exposed population of 100,000 (equivalent to a risk of ten in one million or 10 x $10^{-6}$) is calculated to occur. (Ex. 46, pp. 4.7-2 to 4.7-10.)

Toxic emissions will be attributable to the project during both its construction and its operation phases. Applicant and Staff each performed an analysis of the impacts of the SFERP which evaluated potential cancer and non-cancer health risks to the public. (5/31/06 RT 78-80; Ex 46, pp. 4.7-1 to 4.7-143.) Staff also used a modeling tool recently developed by the California Air Resources Board (CARB) - the Hot Spots Analysis and Reporting Program (HARP) – which uses dispersion modeling to examine local cumulative toxic impacts and the extent of the SFERP's contribution to these impacts. (5/22/06 RT 299-304; Staff Opening Brief, pp. 16, 18.)

The evidence shows that, during the twelve month construction period, worst-case hourly dust emissions of 22.8 lb/day of particulate matter less than 10 microns ($PM_{10}$) and 10.9 lb/day of particulate matter less than 2.5 microns ($PM_{2.5}$) will occur. Diesel emissions from sources such as trucks, graders, cranes, welding machines, electric generators, air compressors, and water pumps will also occur. Modeling of construction activities including impacts of fugitive dust over a 12 month period resulted in a predicted annual average concentration of 1.1 µg/$m^3$ of $PM_{10}$ and 0.6 µg/$m^3$ of $PM_{2.5}$ at any location. (Ex. 46, p. 4.7-11.)

[27] The hazard index for every toxic substance which has the same type of health effect is added to yield a total hazard index. The total hazard index is calculated separately for acute and chronic effects.

However, the evidence also establishes that mitigation measures contained in the **AIR QUALITY** portion of this Decision (e.g. Condition of Certification **AQ-SC5**) will reduce particulate matter emissions on the order of 85-92 percent through the use of ultra low sulfur diesel fuel. Tier 1 or 2 emissions standards for construction equipment, and the use of oxidation catalyst and soot filters on diesel equipment will also serve to mitigate construction impacts. (Ex. 46, pp. 4.7-11 to 4.7-12; Staff Opening Brief, p. 17.)

During operation, the emission sources at SFERP include three gas turbines and the two-cell cooling tower. The evidence of record explains, in depth, the methodology used in identifying and quantifying the emission rates of the toxic non-criteria pollutants which could adversely affect public health. (Ex. 46, pp. 4.7-12 to 4.7-16.) Basically, once potential emissions are identified, they are then quantified by conducting a "worst case" analysis. Maximum hourly emissions are used to calculate acute (one-hour) non-cancer health effects, while estimates of maximum emissions on an annual basis are used to calculate cancer and chronic (long-term) non-cancer health effects. (Ex. 46, p. 4.7-15.)

Ambient concentrations of toxic substances are then estimated by using a screening air dispersion model and assuming conditions that result in maximum impacts. Finally, ambient concentrations were used in conjunction with RELs and cancer unit risk factors to estimate health effects which might occur from exposure to facility emissions. (Ex. 46, p. 4.7-16.)

Applicant's screening health risk assessment for the project, including combustion and non-combustion emissions, resulted in a maximum acute hazard index of 0.03 and a maximum chronic hazard index of 0.002. As **PUBLIC HEALTH Table 1** shows, both acute and chronic hazard indices are under the REL of 1.0, indicating that no short- or long-term adverse health effects are expected.

**PUBLIC HEALTH Table 1**
**Operation Hazard/Risk at Point of Maximum Impact**

| Type of Hazard/Risk | Hazard Index/Risk | Significance Level | Significant? |
|---|---|---|---|
| **ACUTE NONCANCER** | 0.03 | 1.0 | No |
| **CHRONIC NONCANCER** | 0.002 | 1.0 | No |
| **INDIVIDUAL CANCER** | $0.046 \times 10^{-6}$ | $10.0 \times 10^{-6}$ | No |

Source: Ex. 46, p. 4.7-16.

As also shown in **PUBLIC HEALTH Table 1**, the calculated total worst-case individual cancer risk is 0.046 in one million at the location of maximum impact, which in this case is located in San Francisco Bay northeast of the proposed power plant. The calculated maximum cancer risk at the closest residence is 0.0008 in one million. (Ex. 46, p. 4.7-16.)

Staff reviewed the Applicant's modeling and also conducted an independent risk assessment for the SFERP project using the CARB's HARP modeling tool. The evidence further indicates that Staff conducted dispersion modeling and risk assessment for source emissions under the following scenarios:

- all sources at SFERP (3 combustion turbines and 2 cooling tower cells);
- SFERP combustion turbines only;
- SFERP cooling tower only.

Staff's analysis for cancer risk and non-cancer hazard due to emissions from all 5 on-site sources (3 combustion turbines and 2 cooling tower cells) at the SFERP facility showed a cancer risk of 0.073 in one million at the point of maximum impact (PMI), which is located to the east of the facility boundary at the construction laydown area. At the facility fenceline (conservatively assumed to be the location of the nearest workplace), cancer risk under the worker exposure scenario is 0.021 in one million. At the nearest residence located approximately

1,600 feet west of the facility, cancer risk is estimated to be 0.0014 in one million; at the nearest sensitive receptor located at Warm Water Cove Public Access (approximately 550 feet north of the facility), cancer risk is estimated to be 0.0027 in one million. Cancer risk at the maximally exposed sensitive receptor is 0.015 in one million at the Gloria B. Davis Middle School.

This independent modeling shows that all cancer risks due to emissions from SFERP are less than 1.0 in one million and that all chronic and acute non-cancer hazard indices are less than 1.0. These results indicate a lack of non-cancer hazard from facility emissions at all receptors evaluated. (Ex. 46, p. 4.7-17.) Staff's results are summarized in **PUBLIC HEALTH Table 2**.

**PUBLIC HEALTH Table 2**
**Operation Hazard/Risk (Staff's Calculations)**

| Type of Hazard/Risk | Hazard Index/Risk | Significance Level | Significant? |
|---|---|---|---|
| **ACUTE NONCANCER** | 0.038 | 1.0 | No |
| **CHRONIC NONCANCER** | 0.0027 | 1.0 | No |
| **INDIVIDUAL CANCER** | $0.073 \times 10^{-6}$ | $10.0 \times 10^{-6}$ | No |

Source: (Ex. 46, p. 4.7-17.)

Staff also conducted further analysis of SFERP emissions in which cancer risk and non-cancer hazard were determined separately for the combustion turbines and the cooling towers. Results show that the majority of cancer risk estimated for the facility (0.073 in one million at the PMI located just outside the eastern facility boundary) is due to cooling tower emissions. (5/22/06 RT 299-302; Ex. 46, pp. 4.7-16 to 4.7-17.)

In conclusion, Staff's analysis, while differing slightly from Applicant's, nevertheless confirms that SFERP emissions would not present significant

cancer risk or non-cancer hazards to any member of the public, including the low income and minority populations in the vicinity.

Intervenor Sarvey, however, contends that the analysis of record is insufficient in that it does not adequately account for cumulative impacts, including those identified in the 2001 "Southern Waterfront SEIR." (SEIR; marked for identification as Ex. 92b, but not received into evidence; 5/31/06 RT 44-45.) This intervenor combines concerns over public health and environmental justice, essentially contending that the record does not contain an adequate analysis of the public health impacts upon a community "…already overburdened by pollution from industrial facilities." (Sarvey Opening Brief, p. 8; Reply Brief, pp. 10-11; July 21, 2006 Reply Brief to Staff Late Filing, p. 10.) The intervenor, however, offered no expert testimony to contradict that from Applicant and Staff summarized above.

In their respective post-hearing submissions, both Applicant and Staff thoroughly discount the validity of the intervenor's contentions by convincingly showing that an adequate cumulative impacts analysis has in fact been performed. This analysis included relevant projects identified in the SEIR and yielded results which clearly establish the lack of adverse public health impacts attributable to construction and operation of SFERP in conjunction with these other projects. (Applicant Opening Brief, pp. 53-69; Applicant Reply Brief, pp. 13-26; Staff Opening Brief, pp. 14-18; Staff Reply Brief, pp. 5-6.)

We have examined the evidence of record and find that it convincingly rebuts the contentions advanced by the intervenor. For example, Applicant's testimony explained the nature of its cumulative analysis at length (5/31/06 RT 73-113), and Staff showed that its analysis, based on recent developments in modeling as well as the inclusion of toxic emission point sources in the project vicinity (5/22/06 RT 300-302; Ex. 46, pp. 4.7-21 to 4.7-22) establishes that the SFERP will not cause adverse public health impacts. (Staff Opening Brief, pp. 16-18.)

More specifically, as explained in Applicant's Opening Brief (at pages 54-56), the record establishes the following:

- the highest cancer risk for the project, based on Applicant's modeling, is 0.045 in one million, which is over 200 times lower than the ten in one million standard used by regulatory agencies;

- the highest cancer risk factor, based on Staff's modeling, is 0.073 in one million;

- the maximum cancer risk point, depending on the modeling used, is either in San Francisco Bay or the construction laydown area;

- the maximum cancer risk factor at the nearest residence is 0.0014 in one million, or over 7,000 times lower than the level of significance;

- diesel emissions during construction would result in an increased cancer risk of 0.75 to 1.1 in one million at the project fence line, but the analysis of record does not account for mitigation measures required in the Conditions of Certification;

- Applicant calculated the chronic (long-term) non-cancer health hazard for the project at 0.002 and Staff at 0.0027;

- the acute health hazard index for the project is 0.025 as calculated by Applicant, and 0.038 as calculated by Staff;

- a health hazard index of less than one indicates there is very little likelihood that adverse health effects could occur.

The most salient point to be gained from the extensive record on the cumulative analysis is perhaps most succinctly stated by Staff (Reply Brief, p. 6):

> "…many of the projects listed in the SEIR have apparently already been built, or involve only construction impacts (such as the Illinois Street Bridge project). They would thus not likely be cumulative to SFERP. However, even if one accepts uncritically the cancer risk numbers stated in Sarvey's brief, such cumulative numbers (the highest being 8.96 in one million), *even when added to project risk numbers* (0.073 in a million worst-case impact, east of the facility, in the industrial area; 0.0014 in one million at the nearest residence), would not toll the generally accepted significance criteria used for

> *single* projects—ten in one million. (See Ex. 46, p. 4.7-17, 21.) Thus Sarvey's conclusion regarding cumulative impact significance is unsupported even if his numbers are accepted." (Emphasis in original; see also, Applicant's Opening Brief at pp. 61-62, 65-66.)

No credible evidence of record rebuts these conclusions.

Intervenor Sarvey also advances his theory that the cumulative impact analysis of record is deficient on legal grounds. (Opening Brief, pp. 3-4.) Similarly, Sarvey's recitation of prior statements by one of Applicant's current witnesses-given while an advocate participating in the Waterfront SEIR process may be historically interesting but is not probative concerning the sufficiency of the present cumulative impact analysis. (See Sarvey Opening Brief, pp. 9-13.) Nothing offered by the intervenor, including his interpretation of CEQA's requirements (Opening Brief, p. 4), credibly suggests that the factual matters established in the current record, including the scope of the cumulative impact analysis, is either factually erroneous or legally insufficient.[28]

Finally, the record shows that in addition to being a source of potential toxic air contaminants, the possibility exists for bacterial growth, including Legionella, to occur in the cooling tower. It is the principal cause of legionellosis, otherwise known as Legionnaires' Disease, which is similar to pneumonia. Transmission to people results mainly from inhalation or aspiration of aerosolized contaminated water. Untreated or inadequately treated cooling systems, such as industrial cooling towers and building heating, ventilating, and air conditioning systems, have been correlated with outbreaks of legionellosis.

According to the evidence of record, good preventive maintenance is very important in the efficient operation of cooling towers and other evaporative

[28] Applicant thoroughly addresses these matters in its Reply Brief at pages 18-26. Staff's pointed response to the intervenor 's legal interpretation appears at pages 14-16 of its Opening Brief.`

equipment. Preventive maintenance includes having effective drift eliminators periodically cleaning the system if appropriate, maintaining mechanical components in working order, and maintaining an effective water treatment program with appropriate biocide concentrations.

In order to ensure that Legionella growth is kept to a minimum, Condition of Certification **PUBLIC HEALTH-1** is necessary. The condition will require the project owner to prepare and implement a biocide and anti-biofilm agent monitoring program to ensure that proper levels of biocide and other agents are maintained within the cooling tower water at all times, that periodic measurements of Legionella levels are conducted, and that periodic cleaning is conducted to remove bio-film buildup. (5/22/06 RT 302; Ex. 46, p. 4.7-19.)

**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 project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

2. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

3. Emissions of criteria pollutants, which are discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels consistent with applicable standards.

4. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of toxic air contaminants.

5. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic noncarcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects.

6. Application of the hazard index method establishes that emission of non-criteria pollutants from the SFERP will not cause acute or chronic adverse public health effects.

7. The maximum non-cancer and the maximum cancer risks associated with the project are substantially below the significance thresholds commonly accepted for risk analysis purposes, even when considering the impacts of projects identified in the 2001 Southern Waterfront SEIR.

8. The project owner will implement a Cooling Water Management Plan in accordance with applicable LORS and guidelines to minimize the potential for growth of Legionella bacteria and other micro-organisms in cooling tower emissions.

9. Cumulative impacts from noncriteria pollutants were analyzed in accordance with the provisions of CEQA. Impacts from the SFERP's emissions of these pollutants are not expected to be significant.

10. Emissions from the construction, operation, and closure of the proposed natural gas-burning SFERP will not have a significant adverse impact on the public health of the surrounding population.

We therefore conclude that project emissions of noncriteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk and that the project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

**CONDITION OF CERTIFICATION**

**Public Health-1** The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but, in either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of power plant operations, the project owner may ask the Compliance Project Manager (CPM) to re-evaluate and revise the Legionella bacteria testing requirement.

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

## C. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the San Francisco Electric Reliability Project 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.[29]

### 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. (4/27/06 RT 188, 207.) These are specified at length in the evidence of record. (Ex. 46, pp. 4.4-17 to 4.4-19.) 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. 46, pp. 4.4-18 to 4.4-19.)

Hazardous materials, such as mineral and lubricating oils, corrosion inhibitors, and water conditioners will be present at the facility. Hazardous materials used

[29] The **Worker Safety** and **Fire Protection** portion of this Decision analyzes the protection of workers from such risks.

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.

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.
- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures proposed. (Ex. 46, pp. 4.4-5 to 4.4-6; see also, Staff Opening Brief, pp. 21-22.)

The evidence of record is clear that, but 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. (Exs. 3, 15, 16, 27, 39, 40, 45, 46, pp. 4.4-2, 4.4-8, 4.4-11; Applicant Opening Brief, p. 100; Staff Opening Brief, p. 22.)

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. 46, pp. 4.4-8 to 4.4-9.)

Aqueous ammonia (29 percent ammonia in an aqueous solution 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 SFERP in significant quantities.[30] The accidental release of aqueous ammonia could, without proper mitigation, result in significant down-wind concentrations of ammonia gas. (4/27/06 RT 165, 173; Ex. 46, pp. 4.4-1, 4.4-11.) Consequently, the bulk of the discussion on this topic at the evidentiary hearing centered on risks associated with the transportation and storage of aqueous ammonia. (4/27/06 RT 161-220.)

Intervenor Sarvey proposed a set of four conditions which would: 1) require a urea based ammonia system and prohibit transport of aqueous ammonia to the site; 2) require use of a double-walled storage tank or an underground storage tank; 3) limit concentrations of aqueous ammonia to 20 percent by volume; and 4) require that ammonia concentrations, in the event of a catastrophic release, not exceed 35 ppm at the fence line. (Ex. 77; also see Opening Brief, pp. 15-16.) The intervenor, however, offered no analysis or expert opinion which supported the need for these proposed conditions or explained why the Conditions of Certification proposed by Staff, and agreed to by Applicant, were inappropriate or insufficient.

[30] No more than 10,000 gallons will be stored on-site at any given time. (Ex. 15, p. 8 12-17; Applicant Opening Brief, p.100; Staff Opening Brief, p. 22.)

In contrast, the evidence presented by expert witnesses for Applicant and Staff indicated that the use of aqueous ammonia in a 29 percent solution posed no significant off-site risk due to the safety and mitigation measures required in the Conditions of Certification. (4/27/06 RT 187.)

The credible expert testimony 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. (4/27/06 RT 165-166; Ex. 46, p. 4.4-13.) The results uniformly show that measures suggested by the intervenor are not necessary or beneficial. For instance, the testimony establishes that there is not a significant difference in ammonia concentration at the fenceline regardless of whether a 29 or 19 percent solution of aqueous ammonia is used and that, in the event of a catastrophic release, the concentration would exceed 35 ppm only at the project's western boundary (4/27/06 RT 166-68), and then only at a distance of 10 to 13 feet inside the fenceline. (4/27/06 RT 185,197-99.) This boundary is part of the MUNI facility and inaccessible to the public. (Ex. 46, pp. 4.4-12 to 4.4-13.) While the intervenor asserts that ammonia concentrations could reach as high as 2,000 ppm and that exposure to workers is underestimated (Sarvey Opening Brief, p.15), he overlooks the facts that this level was conservatively computed without considering mitigation and that MUNI personnel will be adequately trained to detect and deal with any catastrophic ammonia release which could impact them. (4/27/06 RT 19, 168; 197-99, 207; Applicant Opening Brief, p. 101-03; Staff Opening Brief, pp. 22-24.)

Next, there is no credible suggestion in the evidentiary record that ammonia concentrations could reach hazardous levels in publicly accessible areas. Rather, the evidence convincingly establishes that, based on different types of modeling, a public off-site receptor could be exposed to a maximum ammonia concentration of 75 ppm, even in a worst case catastrophic release. (4/27/06 RT 165-66,190-99, 206; 5/31/06 RT 88-89; Ex. 15 p. 8.12-26; Applicant Opening

Brief, pp. 100-03; Staff Opening Brief, p. 24.) This level would not be detectable to the nearest residents.

The testimony also convinces us that the use of a double wall tank would not reduce the already negligible hazard potential (4/27/06 RT 169-70), and that the single walled tank which will be used at SFERP will be unlikely to be significantly damaged during a seismic event. (Ex. 46, p. 4.4-21.) Furthermore, the use of the urea system, while potentially feasible, is unnecessary to protect against off-site hazards. (Ex. 46, pp. 4.4-14 to 4.4-15.)

At a maximum, SFERP will require about 14 tanker truck deliveries of aqueous ammonia per year, with each delivery totaling about 6,500 gallons. (Ex. 46, p. 4.4-20.) Applicant and Staff each analyzed the risks associated with the transportation of hazardous materials – with emphasis on aqueous ammonia – in the vicinity of the project site. (4/27/06 RT 171-72, 193–196; Applicant Opening Brief, pp. 105-09; Staff Opening Brief, pp. 24-25.) This 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-6,** will ensure that the risk to the public of exposure to significant concentrations of aqueous ammonia remain less than significant. (Ex. 46, p. 4.4-20.)

The record also contains a cumulative risk assessment for the SFERP in conjunction with existing facilities in the area. The evidence indicates that all facilities in the area were reviewed and that those which posed a risk of contributing to cumulative impacts were analyzed in greater detail. This included a combination of an ammonia plume from the Potrero power plant and from the SFERP. (Ex. 15, p. 8.12-31.) The resulting modeling analysis indicates that there is no significant risk of cumulative adverse impacts occurring from either the storage or transportation of aqueous ammonia in the project vicinity. (4/27/06

RT 189-92; Ex. 46, pp. 4.4-22 to 4.4.-23; Applicant Opening Brief, pp. 103-08; Staff Opening Brief, pp. 25-27.) Since the project's use of aqueous ammonia as proposed will not create a significant impact, there is simply no requirement, need, or duty to attempt to further reduce any residual insignificant impact. (4/27/06 RT 187.)

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 SFERP.
**HAZ-1** ensures that no hazardous material would be used at the facility except those listed unless there is prior approval by the City and County and the Energy Commission Compliance Project Manager (CPM). **HAZ-2** requires that a 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. The development of a Safety Management Plan addressing delivery of ammonia 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 certain rigid specifications, **HAZ-5** addresses the storage of sulfuric acid, and the transportation of hazardous materials is addressed in **HAZ-6, and 7**. Site security during both the construction and operations phases is addressed in **HAZ-8** and **HAZ-9**. Appropriate security measures such as perimeter fencing and detectors, alarms, site access procedures and background checks will also be used. (4/27/06 RT 205-06, Ex. 46, p. 4.4-22.)

## 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 SFERP will use hazardous materials during construction and operation, including aqueous ammonia and natural gas.

2. The major public health and safety hazard is associated with the catastrophic release of aqueous ammonia. It is the hazardous material which will be stored on-site in reportable quantities.

3. A worst-case catastrophic release of aqueous ammonia will not pose a hazard to the public, nor result in off-site concentrations greater than 75 ppm. A concentration of 75 ppm would not cause significant adverse impacts.

4. 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.

5. 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.

6. The evidence of record establishes that the hazardous materials used in the construction and operation of the SFERP, 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.

7. 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.

8. With implementation of the Conditions of Certification, below, the SFERP 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 SFERP 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 materials not listed in Appendix C, below, or in greater quantities than those identified by chemical name in Appendix C, below, unless approved 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 contained at the facility.

**HAZ-2** The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority – (CUPA) (San Francisco Department of Public Health) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, 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 and EPA 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 sixty (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. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

**Verification:** At least sixty (60) days prior to the 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 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 final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

**Verification:** At least sixty (60) days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

**HAZ-5** The project owner shall ensure that no flammable material is stored within 50 feet of the sulfuric acid tank.

**Verification:** At least sixty (60) days prior to receipt of sulfuric acid on-site, the project owner shall provide copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any flammable materials.

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

**Verification:** At least sixty (60) days prior to receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

**HAZ-7** The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (Interstate-280, to Cesar Chavez Street off-ramp, to Third Street, to Illinois St. to 25$^{th}$ Street, to the project site). The project owner shall obtain approval of the CPM if an alternate route is desired.

**Verification:** At least sixty (60) days prior to receipt of any hazardous materials on site, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval.

**HAZ-8** 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 thirty (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-9** In order to determine the level of security appropriate for this power plant, the project owner shall prepare a Vulnerability Assessment and submit that assessment as part of the Operations Security Plan to the CPM for review and approval. The Vulnerability Assessment shall be prepared according to guidelines issued by the North American Electrical Reliability Council (NERC 2002), the U.S. Department of Energy (DOE 2002), and the U.S. Department of Justice Chemical Vulnerability Assessment Methodology (July 2002).

Physical site security shall be consistent with the guidelines issued by the NERC (Version 1.0, June 14, 2002) and the DOE (2002) and will also be based, in part, on the use and storage of certain quantities of regulated substances (acutely hazardous materials) as described by the California Accidental Release Prevention Program (Cal-ARP, Health and Safety Code section 25531).

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. Permanent full perimeter fence or wall, at least 8 feet high;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for 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;

6. Site personnel background checks, including employee and routine on-site contractors [Site personnel background checks are limited to ascertaining that the employee's claims of identity and employment history are accurate. All site personnel background checks shall be consistent with state and federal law regarding security and privacy.];

7. Site access controls for employees, contractors, vendors, and visitors;

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

9. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate and the ammonia storage tank; and

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

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

    **or**

    B. **All** of the following:

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

        2. Perimeter breach detectors **or** on-site motion detectors.

        3. The ability to monitor the facility from a remote location including monitoring CCTV views of the perimeter, perimeter branch detectors or motion detectors, and fire detectors.

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

**Verification:** At least 30 days prior to receiving any hazardous materials on-site for commissioning or operations, the project owner shall notify the CPM that a site-specific Vulnerability Assessment and Operations Site Security Plan are available for review and approval.

**Hazardous Materials Appendix C Table 1:**
**Hazardous Materials Proposed for Use at the SFERP[a]**

| Material | CAS No. | Application | Location | Hazardous Characteristics | Maximum Quantity On Site | CERCLA SARA RQ[b] |
|---|---|---|---|---|---|---|
| Aluminum Sulfate | 10043-01-3 | Coagulant for plant makeup water | Water treatment building | Health: moderately toxic by ingestion<br>Physical: none | 800 gallons | 5,000 lb |
| Antiscalant | | Prevent scale in reverse osmosis membranes | Water treatment building | Health: low toxicity, mainly irritation | 200 gallons | n/a |
| Aqueous Ammonia 29 % solution | 1336-21-6 | $NO_X$ Emissions Control | East and adjacent to treated water storage tank | Health: irritation to permanent damage from inhalation, ingestion, and skin contact<br>Physical: reactive, vapor is combustible | 10,000 gallons | 100 lb |
| Citric Acid 50 % | 77-92-9 | pH control of upstream of reverse osmosis equipment | Wastewater treatment building | Health: skin and mucous membrane irritant and seer eye irritant<br>Physical: reactive with strong bases and oxidizers | 100 gallons | - |
| Cleaning chemicals/ Detergents | None | Periodic cleaning | Shop or warehouse area | Health: various<br>Physical: various | 20 gallons | 100 gallons |
| Hypersperse MS 1310 | 7705-08-0 | Prevent scale in reverse osmosis membranes | Water treatment building | Health: may cause irritation to skin and eyes<br>Physical: None | 200 gallons | - |
| Ferric Chloride | 77-92-9 | Coagulant for plant makeup water | Water treatment building | Health: burns eyes and skin, ingestion may cause stomach pain, nausea, vomiting, shock, and diarrhea<br>Physical: heat sensitive | 400 gallons | 1,000 lb |
| Ferric Sulfate | 10028-22-5 | Coagulant for plant makeup water | Water treatment building | Health: irritates mucous membranes, respiratory tract, and lung tissue if inhaled; burns | 400 gallons | 1,000 lb |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | skin and eyes; ingestion can cause stomach irritation, burns, liver cirrhosis and fibrosis of pancreas Physical: reactive | | |
| Laboratory Reagents (liquid) | None | Water/wastewater laboratory analysis | Water treatment building | Health: various<br>Physical: various | 20 gallons | - |
| Laboratory Reagents (solid) | None | Water/wastewater laboratory analysis | Water treatment building | Health: various<br>Physical: various | 100 lb | - |
| Mineral Generator Lubrication Oil | None | Lubricate rotating equipment | Contained within storage tanks on equipment skids | Health: hazardous if ingested<br>Physical: may be flammable/combustible | 1,570 gallons | 42 gallons |
| Mineral Transformer Insulating Oil | 8012-95-1 | Transformers/switchyard | Contained within transformers and electrical switches | Health: hazardous if ingested<br>Physical: may be flammable/combustible | 21,000 gallons | 42 gallons |
| NALCOLYTE 8799 (Coagulant Aid Polymer) | 7647-14-5 205077000 00-5062P | Coagulant for plant makeup water | Water treatment building | Health: prolonged contact may cause irritation to skin and eyes<br>Physical: reactive with strong oxidizers | 400 gallons | - |
| NALCO 8305 Plus (Corrosion Inhibitor) | None | Cooling tower cooling water corrosion inhibitor | Near chiller cooling tower | Health: irritant to eyes, skin, and respiratory tract<br>Physical: reactive | 200 gallons | - |
| NALCO TRASAR 23263 (Dispersant) | 64665-57-2 | Cooling tower cooling water dispersant | Near chiller cooling tower | Health: none<br>Physical: none | 200 gallons | - |
| Polyacrylate (Various Scale Inhibitors) | Various | Cooling tower scale inhibitor | Near chiller cooling towers | Health: sight to moderate toxicity; irritant to skin and eyes<br>Physical: reactive with strong acids | 400 gallons | - |
| Sodium Bisulfite (NALCO 7804) | 7631-90-5 | Remove free chlorine in reclaimed water upstream of reverse osmosis | Water treatment building and wastewater treatment building | Health: irritation to eyes, skin, and lungs; may be harmful if ingested<br>Physical: reactive with strong acids and oxidizers | 450 gallons | 5,000 lb |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | system and wastewater treatment | | | | |
| Sodium Bromide (NALCO STABREX st40) | 1310-73-2 | Cooling tower biocide and process water pretreatment | Near chiller cooling towers and water treatment building | Health: irritation to skin, eyes, respiratory tract; can cause damage to central nervous system if ingested<br>Physical: reactive | 200 gallons | 1,000 lb |
| Sodium Hydroxide (50 %) | 1310-73-2 | pH control upstream of reverse osmosis equipment and wastewater treatment | Water treatment building and wastewater treatment building | Health: irritant to tissue in presence of moisture; strong irritant if ingested<br>Physical: reactive | 425 gallons | 1,000 lb |
| Sodium Hypochlorite (10.13-12 %) | 7681-52-9 | Biocide to treat inlet reclaimed water/cooling tower biocide and process water pretreatment/and wastewater treatment | Water treatment building/ near chiller cooling tower/ Wastewater treatment building | Health: toxic by ingestion; strong irritant to tissue<br>Physical: reactive with ammonia and organic materials; flammable with organic materials | 400 gallons | 100 lb |
| Sulfuric Acid (93-98 %) | 7664-93-0 | Enhance back flush of ultra filter system/ cooling tower cooling water pH control | Water treatment building/ near chiller cooling tower | Health: strong irritant to all tissues, may cause minor burns to permanent damage<br>Physical: reactive | 400 gallons | 1,000 lb |
| Synthetic Turbine Lubrication Oil | None | Lubricate rotating equipment | Contained within storage tanks on equipment skids | Health: hazardous if ingested<br>Physical: may be flammable/combustible | 560 gallons | 42 gallons |

a. Source: SFPUC 2005a Tables 8.12-3, 8.12-4, and 8.12-5.

b. Reportable quantities for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act.

## D. 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 would significantly impact available treatment and disposal sites. (Ex. 46, pp. 4.13-1, 4.13-6.)

This present section of the Decision is limited to these matters. It is undisputed that the proposed site is contaminated and has undergone site characterization studies; remediation will likely be needed. There is obviously a degree of substantive overlap and the reader should be aware that we deal with issues relating to the existing contamination in the **SOIL and WATER RESOURCES** portion of this Decision.

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The project owner will prepare separate Waste Management Plans for the construction and the operation of the SFERP. Each plan will describe the appropriate waste stream and management methods planned. Condition of Certification **WASTE-5** requires that these plans be submitted to the CPM and applicable local agencies prior to site preparation.

#### 1. Construction

Construction of the SFERP and its associated facilities will generate nonhazardous and hazardous wastes in both solid and liquid forms. (5/22/06 RT

19–21, 100-01.) About 15 tons of waste metal from welding/cutting activities, packing materials, electrical wiring, and empty non-hazardous chemical containers will be generated during construction. Nonhazardous solid wastes will include up to 10 tons of wood, paper, glass, and plastic waste products. All non-hazardous wastes will be recycled to the extent possible and non-recyclable wastes will be collected by a licensed hauler and disposed in a solid waste disposal facility.

The project will use treated wastewater for cooling. Secondary effluent will be obtained from the Southeast Waste Water Treatment Plant (SEWWTP) at a pressurized manhole located near the intersection of Tulare and 3rd Streets. It will be treated off-site. Some hazardous and nonhazardous wastes will be generated during construction of the 2,600-foot water pipeline. These consist of routine construction wastes such as building materials, gasoline and diesel fuel leaks, lubricants (oil and grease), oily rags, paper, wood, scrap metal, etc. These amounts are minor and will be handled in the same manner as that for the project site. (Ex. 46, p. 4.13-8.)

Excavation and trenching during the construction of the water pipeline may encounter potentially contaminated soils and/or groundwater. Excavated soil, with the exception of contaminated soil, will be reused on the site. Contaminated soil will be tested and classified, and may be disposed off-site at an appropriate land disposal facility. The evidence shows that handling, disposal, and other precautions may be necessary. For example, if any of the soil excavated does not meet the applicable requirements for land disposal, then further treatment will be necessary to reduce contamination to acceptable levels. Conditions of Certification **WASTE-1** and **WASTE-2** are adequate to address any soil and/or groundwater contamination contingency that may be encountered during these activities. (*Id*.)

Asbestos-containing material may also exist at the site. If more than one acre of asbestos-containing soil is disturbed during construction, a dust mitigation plan

that will ensure no visible dust beyond the site boundary must be prepared. This plan will be submitted for approval to the BAAQMD prior to beginning of construction activities. The BAAQMD may also require air monitoring of asbestos dust during construction to ensure the effectiveness of the mitigation measures. However, since dust control methods are essential to controlling air pollution during construction, Conditions of Certification requiring stringent fugitive dust control (**AQ-SC3**) and monitoring (**AQ-SC4**) regardless of the asbestos content of the soil are contained in the **AIR QUALITY** portion of this Decision. (5/22/06 RT 103; Ex. 46 pp. 4.13-8 to 4.13-9.)

Nonhazardous liquid wastes generated during construction 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 that will be prepared for the project and approved prior to construction. Other wastewaters will be sampled to determine their disposal. If the wastewater is found to be non-hazardous, it will be treated and discharged to the San Francisco combined sewer system in accordance with City requirements. If the wastewater is found to be hazardous, it will be collected and disposed at a permitted hazardous waste management facility in accordance with applicable law. (Ex. 46, p. 4.13-9.)

Hazardous wastes generated during construction include welding materials, paint, flushing and cleaning fluids, solvents, asbestos containing materials, and lead-based paint. Lead based paint disposal is regulated by the San Francisco Building Code. 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.

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;

Condition of Certification **WASTE-3**). Wastes will be gathered at satellite locations and then transported daily to the construction contractor's 90-day hazardous waste storage area located in the construction laydown area. These wastes will be properly manifested, transported, and disposed at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies.

The handling and management of construction waste will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. Recycling wastes will be prioritized in an effort to meet the City and County goals of 75 percent recycling by 2010 and 100 percent recycling by 2020. (5/22/06 RT 100.) The minimal quantities of hazardous wastes generated will not significantly impact the treatment and disposal resources available in California. (Ex. 46, pp. 4.13-9 to 4.13-10.)

2. Operation

The SFERP will generate both nonhazardous and hazardous wastes in solid and liquid forms under normal operating conditions. Before operations can begin, the project owner must develop and implement an Operations Waste Management Plan (Condition of Certification **WASTE-5**).

Nonhazardous solid wastes include up to 20 cubic yards of waste annually. This is comprised of maintenance wastes and office wastes. These wastes will be recycled to the extent possible. Non-recyclable wastes will be regularly transported off-site to a solid waste disposal facility.

Nonhazardous operational liquid wastes are discussed thoroughly 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 appropriately. Cooling tower blowdown, plant drainage, reverse osmosis water,

and backwash water from the power cycle makeup treatment will be discharged to the waste water collection system. (Ex. 46, p. 4.13-10.)

Hazardous wastes anticipated during routine project operation include waste lubricating oil, lubrication oil filters from the combustion turbines, spent SCR catalyst, oily rags, cooling tower sludge, laboratory analysis waste, oil sorbents, and chemical feed area drainage. As with construction wastes, handling and management of operational waste will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. These operational hazardous wastes will be minimal and recycling methods will be used to the extent possible. The remaining hazardous waste will be temporarily stored on-site and disposed by licensed hazardous waste collection and disposal companies in accordance with all applicable regulations. The minimal quantities of hazardous waste generated will not significantly impact the treatment and disposal resources available in California. (Ex. 46, p. 4.13-11.)

3. Disposal

San Francisco currently has an exclusive agreement with Waste Management Inc. (WMI) to dispose up to 15 million tons of non-hazardous waste and inert waste in the Altamont Landfill. This contract is expected to expire in approximately 2010.[31] Thereafter, the City will be free to use any other available disposal facilities.

San Francisco is exploring additional landfill capacity available for use after 2010. The closest landfill is the Ox Mountain Sanitary Landfill in Half Moon Bay, approximately 26 miles away. It has a remaining capacity of 44.6 million cubic yards and estimated closure date in 2018. The second closest landfill is the Kirby Canyon Recycling Station and Landfill in San Jose, approximately 47 miles

[31] The City has reached its goal of 50 percent recycling, and successful efforts to increase recycling percentages may extend the City's contract beyond 2010.

away. This facility has a remaining capacity of over 57 million cubic yards and an estimated closure date in 2022.

The evidence indicates that, due to recycling efforts, only 7 tons of construction waste, and about 5 tons of annual operational waste, will require disposal. (Ex. 46, p. 13-12.) The volume of solid nonhazardous waste from the SFERP requiring off-site disposal will thus 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. (Ex. 46, p. 4.13-11.)

Most of the hazardous waste generated by SFERP will be generated during facility construction and startup in the forms of flushing and cleaning liquids. Volumes of hazardous wastes generated during facility operation will be minimal. The only hazardous wastes that will require disposal in a Class I landfill will be SCR catalyst units that cannot be recycled, and cooling tower sludge if it is determined to be hazardous. Approximately 200 pounds per year of the sludge waste will be generated during operation. All hazardous wastes generated during both construction and operation will be transported off-site to a permitted treatment, storage, or disposal facility for appropriate disposition, preferably recycling. The evidence establishes that the volume of hazardous waste from the SFERP requiring off-site disposal will not significantly impact the capacity or remaining life of any of the three Class I landfills. (Ex. 46, p. 13-12.)

**FINDINGS AND CONCLUSIONS**

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

1. The project will generate hazardous and nonhazardous wastes during construction and operation.
2. Hazardous and nonhazardous wastes will be recycled to the extent practical.

3. Wastes which cannot be recycled will be disposed in appropriate landfills.
4. Disposal of project wastes will not result in significant adverse impacts to existing waste disposal facilities.
5. 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.
6. 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.

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, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and the Compliance Project Manager (CPM) stating the recommended course of action.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the San Francisco Department of Public Health (SFDPH), the San Francisco Fire Department, and the Berkeley Office of Department of Toxic Substances Control (DTSC) 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 relevant Monthly Compliance Report of its receipt.

**WASTE-4** Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

**Verification:** The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

**WASTE-5** The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of

transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

**Verification:** No less than 30 days prior to the start of 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 the planned management methods proposed in the original Operation Waste Management Plan.

**WASTE-6** At least sixty (60) days prior to any soil disturbance or the beginning of site mobilization, whichever is later, the project owner shall prepare and submit the documents listed below to address contaminated soil and groundwater at the project site. This information shall be submitted to: the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for review and approval; the San Francisco Department of Public Health (SFDPH) for review and verification of compliance with Article 22A requirements; and the Compliance Project Manager (CPM) for review and approval that these documents meet the requirements of this Condition of Certification.

a) a Human Health Risk Assessment (HHRA),

b) an Ecological Risk Screening Assessment (ERSA) using site-specific groundwater concentrations compared to SFBRWQCB 2005 ESLs,

c) a site-specific Risk Management Plan (RMP) that will govern soil and groundwater handling procedures during soils movement and construction, and

d) a site-specific Site Cleanup Plan (SCP) that will present cleanup goals and remedial alternatives considered and selected to address human and ecological risks and reduce any significant risk identified to less than significant. The SCP, which is equivalent to a Removal Action Work Plan (RAW), will be developed in compliance with SFBRWQCB requirements and guidance and Article 22A requirements. This plan will also detail the program and schedule to implement the selected remedies. Either a waiver or a “no action” letter from the SFBRWQCB and the SFDPH may be submitted instead of an SCP if approved by the CPM.

The project owner shall provide the CPM with a copy of any and all correspondence between itself and the SFBRWQCB and the SFDPH within five (5) days of submittal to the agency or receipt from the agency.

**Verification:** At least sixty (60) days prior to any soils disturbance or the beginning of site mobilization, the project owner shall provide the documents listed above to the SFBRWQCB for review and approval, the SFDPH for review and verification, and the CPM for review and approval. At least ten (10) days prior to any soil disturbance or the start of site mobilization, the project owner shall submit approval letters from the SFBRWQCB and the SFDPH for each of the documents listed above to the CPM.

**WASTE-7** At least forty-five (45) days prior to the start of commercial operations, the project owner shall submit the documents listed below to address the long-term management of contaminated soil and groundwater at the project site to the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for review and approval, to the San Francisco Department of Public Health (SFDPH) for review and verification of compliance with Article 22A requirements, and to the Compliance Project Manager (CPM) for its approval that these documents meet the requirements of this Condition of Certification.

- *Site Management Plan* – The Site Management Plan (SMP), which shall be developed based on the findings of the HHRA, ERSA, and taking into account the SCP, will govern the long-term management of environmental conditions at the SFERP site relative to potentially ongoing mitigation programs (which could include treatment and /or monitoring programs, if required) and procedures to be followed should subsurface intrusion into chemically-impacted soil and groundwater be required in the future. The SMP will be recorded in an Environmental Restriction.

- *Certification Report* – The Certification Report shall be prepared in accordance with SFBRWQCB requirements and Article 22A. The Certification Report shall contain the results of verification sampling analysis, if required by the SFBRWQCB and SFDPH.

**Verification:** At least 45 days prior to the start of commercial operations, the project owner shall submit the documents listed above to the SFBRWQCB for review and approval, to the SFDPH for review and verification of compliance with Article 22A requirements, and to the CPM for its approval that these documents meet the requirements of this Condition of Certification. The project owner shall provide the CPM with a copy of any correspondences to or from the regulatory agencies within 10 days of submittal. At least 10 days prior to the

start of commercial operation, the project owner shall submit approval letters from the SFBRWQCB and SFDPH for the SMP to the CPM. In addition, at least 30 days prior to the start of commercial operations, and after approval of the SMP, the project owner shall submit to the CPM documentation that the SMP has been recorded as part of the Environmental Restrictions.

**WASTE-8** The project owner shall ensure that the cooling tower sludge is tested as per 22 CCR 66262.10 and report the findings to the Compliance Project Manager (CPM).

**Verification:** The project shall include the results of sludge testing in a report provided to the CPM. If four consecutive tests show that the sludge is non-hazardous, the project owner may apply to the CPM to discontinue testing.

**WASTE-9** Collectively, the implementation of the Site Cleanup Plan (SCP), the Risk Management Plan (RMP), and Site Management Plan (SMP) shall ensure that, during and after construction, the risk to off-site receptors shall not exceed $1x10^{-6}$, the hazard index shall not exceed 1.0, and the risk to site construction and operations workers during site activities shall not exceed $1x10^{-5}$ and a hazard index of 1.0.

**Verification:** At least 45 days prior to the start of commercial operation, the project owner shall submit a copy of the above-specified documentation to the CPM for approval that this Condition of Certification has been met.

## E. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. This analysis reviews whether Applicant's proposed health and safety plans will be adequate to protect industrial workers and provide fire protection and emergency response in accordance with all applicable laws, ordinances, regulations, and standards.[32]

### SUMMARY AND DISCUSSION OF THE EVIDENCE

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 numerous other injuries. They have the potential to be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. In addition, the project site has soil and groundwater contamination. Thus, it is important for the SFERP to have well-defined policies and procedures, training, and hazard recognition and control to minimize such hazards and protect workers.

The evidence of record extensively details the type and content of various plans which will be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. (4/27/06 RT 140; Ex. 46, p. 4.14-1; Applicant's Opening Brief, pp. 119-21; Staff Opening Brief, p. 36.) 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 appropriate agencies prior to project construction and operation. Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Emergency Action Plans, Fire

[32] Although intervenor CARE had reserved time to cross-examine on this topic, it did not appear or otherwise participate at the evidentiary hearing. (4/27/06 RT 147.)

Protection and Prevention Plans, and other general safety procedures will be prepared for both the construction and operation phases of the project. (Exs. 7, 15, 16, 39, 40, 46, pp. 4.14-5 to 4.14-9.) The Conditions of Certification ensure that these measures will be developed and implemented.

In addition, the project owner is required to provide protective equipment and exposure monitoring for workers who are involved in activities on sites where contaminated soil and/or contaminated groundwater exist as per Conditions of Certification **WORKER SAFETY-1** and **2**. Moreover, Conditions of Certification found in the **WASTE MANAGEMENT** section of this Decision require:

- the project owner to prepare a human health risk assessment for the site,
- preparation and implementation of a site-specific Risk Management Plan (RMP), a site-specific Site Management Plan (SMP), and a deed restriction administered by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) covering the power plant site,
- that site activities involving movement of soils will not commence until the site is adequately characterized and remediated,
- the project owner to have an experienced Registered Professional Engineer or Geologist available for consultation during soil excavation and grading activities in the event that contaminated soils are encountered, and
- if potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling and analysis, file a written report, and seek guidance from the CPM and the appropriate regulatory agencies. (Ex. 46, pp. 4.14-9 to 4.14-10.)

At the evidentiary hearing, intervenor Sarvey questioned the methods geared to ensure that workers were adequately protected from airborne concentrations of particulate matter. He contended, based upon his interpretation of a letter from the Department of Toxic Substances Control (Ex. 84; 4/27/06 RT 130), that a health risk assessment for excavation activities should be performed before the project could be certified. Basically, the intervenor seemed concerned over how workers would be protected from as yet undetermined levels of fugitive material from the site.

Staff's expert witness explained that several Conditions of Certification in various topic areas–such as **WORKER SAFETY-1** and **2**, **WASTE -2**, and **AQSC-3** and **4** (Air Quality) – were designed to provide overlapping protection to workers during the construction phase. (4/27/06 RT 135-140.) This includes specific consideration of fugitive dust exposure. (4/27/06 RT 136.) In this expert's opinion it is preferable to assess the level of mitigation actually necessary during ground disturbance activities, rather than assessing it on a merely hypothetical level. (4/27/06 RT 144.) In any event, this unrefuted testimony indicates that the Conditions of Certification require the project owner to protect workers to a level more protective than that specified in the applicable industrial standard. (4/27/06 RT 144-146.) In addition, Condition of Certification **WORKER SAFETY-3** requires that the project owner provide a Construction Safety Supervisor to ensure a safe and healthful work environment. (Ex. 46, pp. 4.14-10 to 4.14-11.) Finally, Condition of Certification **WORKER SAFETY-4** requires that the project owner provide a monitor, who reports to the Chief Building Official and the staff Compliance Project Manager, to serve as an "extra set of eyes" in ensuring that required safety procedures and practices are fully implemented. (Ex. 46, p. 4.14-12; Staff Opening Brief, pp. 36-37; Applicant Opening Brief, pp. 119-22.)

In our opinion, the measures required by the Conditions of Certification, when viewed in light of the credible expert testimony of record, convincingly overcome any inference that a health risk assessment for excavation activities is a necessary prerequisite to certification. We also note that there is no affirmative evidence supporting the necessity of such a pre-construction study.

During project construction and operation there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard, flammable liquids, explosions, and over-heated equipment may cause small fires. 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.

The project will rely on both on-site fire protection systems and local fire protection services. The on-site fire protection system provides the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, will be provided by the San Francisco Fire Department (SFFD). (Ex. 46, p. 4.14-12.)

The closest SFFD station is No. 25 located at 3305 Third Street, approximately 0.3 miles away with a response time of about 3 to 4 minutes. The second and third closest stations are No. 37 located at 798 Wisconsin Street, approximately 1.1 miles away, and station No. 9 located at 2245 Jerrold Avenue, approximately 1.3 miles away. Each of these also has a response time of 3 to 4 minutes. All fire fighters at all locations, including the HAZMAT team at Station 36, are trained at the level of Emergency Medical Technician-1. In addition, Station 25 has an ambulance and 2 paramedics, Station 37 has a part-time ambulance and paramedics, and Station 9 has an ambulance but no paramedics at this time. (Ex. 46, p. 4.14-3.)

The San Francisco Hazardous Materials Team, located in Station No. 36 at 109 Oak Street approximately 4 miles from the project site is considered first responder for HAZMAT incidents. It has a response time of about 30 minutes. Backup support and technical consultants will be provided by the San Francisco Environmental Health Section of the Department of Public Health.

The evidence is uniform in showing that the hazardous materials response time is adequate and the SFFD HazMat Response Team is adequately trained and equipped to respond in a timely manner. Moreover, the evidence confirms that Fire Stations No. 25, 37, and 9 are adequately equipped and manned to deal with any incident at the proposed facility. (4/27/06 RT 134; Ex. 46, pp. 4.14-2 to

4.14-3.) Therefore, we conclude that the project will not cause any significant incremental burden on the SFFD's ability to respond to a fire or medical emergency. (Ex. 46, p. 4.14-14.)

## FINDINGS AND CONCLUSIONS

Based on the weight of the 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. Conditions of Certification in this section, as well as in the **WASTE MANAGEMENT** and **AIR QUALITY** sections, adequately protect construction workers from particulate matter and fugitive dust.

4. The SFERP will include on-site fire protection and suppression systems for first line defense in the event of a fire.

5. The City of San Francisco Fire Department 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 SFERP will not result in cumulative adverse impacts to the City of San Francisco Fire Department's emergency response capabilities.

8. Implementation of the Conditions of Certification, below, and the mitigation measures described in the evidentiary record will ensure that the project conforms with all applicable laws, ordinances, regulations, and standards on industrial worker health and safety as identified in the pertinent portions of **Appendix A** of 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 San Francisco Fire Department for review and comment prior to submittal to the CPM for approval.

**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 a letter to the CPM from the San Francisco Fire Department stating the Fire Department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

**WORKER SAFETY-2** The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- 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 Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the San Francisco Fire Department for review and comment.

**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 a letter to the CPM from the San Francisco Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

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

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

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

- Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- Summary report of safety management actions and safety-related incidents that occurred during the month;

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

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

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

**WORKER SAFETY-5** The project owner shall ensure that a portable automatic cardiac defibrillator is located on-site during construction and operation, and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times.

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

# VI. ENVIRONMENTAL ASSESSMENT

## A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other topics of critical biological interest such as unique habitats. The review contained in the record describes the biological resources in the vicinity of the project site and linear alignments, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards. (5/31/06 RT 117-37; Exs. 1, 6, 15, 16, 17, 25, 39, 46, pp. 4.2-1 to 4.2-16.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The four-acre SFERP site is located in a heavily industrialized area of San Francisco. Industrial and commercial land uses are immediately adjacent to all site boundaries. The plant site has been cleared of permanent structures, and is characterized by hard-packed dirt that is unvegetated and covered with gravel. Only sparse non-native grasses and forbs are found on site. There are no remaining features that provide habitat for plant or wildlife species. The laydown area is currently being used for equipment storage and separates the SFERP site from the Bay. The associated SFERP underground electrical transmission, gas, and water lines will be located along or within a combination of pavement and hard-pack gravel roads and concrete sidewalks which are entirely within commercial and industrial areas.

San Francisco Bay is the closest area of significant habitat to the SFERP site. The Bay shoreline has been significantly modified with piers, bulkheads, riprap, and stabilizing structures. The project site, laydown area, and associated linear

facilities do not include any wetlands or waters of the United States or other sensitive habitat types. (Ex. 46, p. 4.2-4.) The evidence of record indicates that the conditions of the project site do not provide significant habitat value or other resources for common or special status plants or animals. (Ex. 46, p. 4.2-7.) The evidence further indicates that the primary biological concerns identified are limited to: nitrogen deposition on San Bruno Mountain; the risk of avian collisions; and potential effects upon San Francisco Bay. (5/31/06 RT 123.)

Nitrogen Deposition. Serpentine soils in the San Francisco Bay Area, including those on nearby San Bruno Mountain, support native grassland plant communities that sometimes provide habitat for rare and endangered species. Serpentine-adapted natives can thrive in soils that are deficient in nitrogen, potassium, phosphorus, and other nutrients, offering a competitive advantage over the faster growing non-native annual species that have overtaken most of California's grasslands.

However, when nitrogen deposition from air pollution fertilizes these serpentine plant communities, nitrogen can cease to be a limiting nutrient for plant growth. Then, non-native annual grasses may surpass the native species, threatening the biodiversity of these unique native plant communities. Furthermore, nitrogen deposition from air pollution can change serpentine plant community composition thus causing adverse effects to several threatened or endangered butterfly species that rely upon these native serpentine plants for food. (Ex. 46, p. 4.2-11.)

Nitrogen deposition on San Bruno Mountain currently exceeds acceptable levels. (5/31/06 RT 124.) The SFERP will create further nitrogen emissions, resulting in increased deposition of 0.0059 kilograms per hectacre per year, or a 0.0009 percent increase over existing ambient levels. (5/31/06 RT 124; Ex. 46, p. 4.2-12.) While this small percentage increase may be viewed as individually

insignificant, it does contribute to the cumulative nitrogen deposition impacts. (5/31/06 RT 124 – 25; Ex. 46, p. 4.2-13.)

The evidence establishes that the Applicant's purchase of 47.5 tons per year of oxides of nitrogen (NOx) emission reduction credits (ERC) from the nearby Potrero power plant will more than offset the SFERP's 39.8 tons per year of nitrogen emissions. (See Condition **AQ-38**.) The evidence also establishes that this will reduce the level of overall nitrogen emissions in the San Bruno Mountain area, thus eliminating any contribution by the SFERP to adverse impacts due to nitrogen deposition. (5/31/06 RT 124-25; Ex. 46, pp. 4.2-13, 4.2-15 to 16.)

Intervenor Sarvey maintains, without benefit of persuasive evidentiary support, that the required measures are insufficient to mitigate the adverse effects of ammonia emissions on San Bruno Mountain. (Opening Brief, pp. 7-8; Reply Brief, pp. 8-9; July 21, 2006 Reply to Staff Late Filing, pp. 22-24.) In his view, the SFERP will contribute to an existing significant adverse cumulative impact.

As noted by Applicant and Staff, however, mitigation in the form of the surrender of ERCs is an approved programmatic method of reducing adverse regional emission impacts, in this instance those caused by NOx. (Applicant Reply Brief, pp. 12-13; Staff Reply Brief, p. 5.) There is no dispute that the NOx ERCs required exceed project emissions, therefore adequately canceling the SFERP's contribution to the existing nitrogen deposition impacts on San Bruno Mountain. (Ex. 46, p. 4.2-13.)

The intervenor also contends that since the SFERP will not unequivocally result in the shutdown of Potrero 3, it cannot take credit for reduced emissions due to any closure of that facility. He apparently overlooks the results of three modeling scenarios which include the NOx reductions the SFERP will provide, with or without the continued operation of Potrero.

The analysis of these three scenarios contained in the record shows that even with operation of SFERP and continued operation of the Hunters Point and Potrero power plants (with the required SCR control in place) emissions in southeast San Francisco would be reduced by more than 52 tons per year of nitrogen. Alternatively, the continued operation of the Potrero Power Plant and the shutdown of the Hunters Point Power Plant will result in a net reduction in nitrogen emissions of approximately 86 tons per year. Finally, if both the Potrero and Hunters Point power plants are shut down, the area would see a net reduction in nitrogen emissions of about 169 tons per year. (Ex. 46, p. 4.2-13.)

The basic point of these analyses is that the ERCs provided by SFERP will reduce nitrogen deposition. The extent of reduction increases as the Hunters Point and Potrero units cease operations. Thus, we conclude that, under any likely scenario, nitrogen emissions will be reduced in the area and NOx emissions from the SFERP will not exacerbate any existing biological impacts.

Avian collisions. The project will require construction of three 85-foot high exhaust stacks that could potentially pose a collision threat to birds. Migratory birds generally fly at an altitude that avoids ground structures, except when crossing over topographic features (e.g. ridge tops) or when inclement weather forces them down closer to the ground.

A large number of birds migrate along the Pacific Coast, passing through the San Francisco Bay Area. The project area is within a known path for nocturnally migrating birds. Bird collisions with tall structures typically involve nocturnal migrants flying at night in inclement weather and low-visibility conditions, colliding with tall-guyed television or radio transmission towers. However, there are no topographic or ecological features that would attract birds to this location or “funnel” them into the vicinity of the exhaust stacks or other elevated features of the project. Because of the low structure height relative to the surrounding industrial development and lack of guy wires and aboveground transmission

lines, the evidence shows that the potential for bird collisions with stacks and other project structures is less than significant. (5/31/06 RT 125-26; Ex. 46, p. 4.2-10.) Similarly, neither the SFERP's noise levels nor night lighting will likely adversely interfere with wildlife activities in the area. (Ex. 46, pp. 4.2-9 to 4.2-10.)

Bay Discharges The SFERP will utilize a closed system that uses recycled process water provided by San Francisco. Effluent will be discharged into the City's combined sewer system and sent to the Southeast Wastewater Treatment Plant. Because there will be no direct intake of water from the Bay or discharge of effluent into it, the project will not affect aquatic habitat. (5/31/06 RT 126; Ex. 46, pp. 4.2-5, 4.2-8, 4.2-10, 4.2-14.)

Preliminary soil contamination investigations at and near the SFERP site indicate high levels of total petroleum hydrocarbons, arsenic, lead, polynuclear aromatic hydrocarbons, and possibly other contaminants. Grading activities and excavation at the SFERP site could adversely affect water quality and aquatic organisms in the San Francisco Bay if stormwater drainage concentrates runoff in areas that have been disturbed by construction. Water quality could also be impacted by discharge of toxic materials released during construction, or by the migration of existing toxic materials present in the subsurface soils and groundwater. (Ex. 46, p. 4.2-8.) To prevent these possible impacts during construction, stormwater will be delivered to a catchment structure and then delivered to an appropriate treatment system. (5/31/06 RT 126.)

During operations, however, untreated stormwater runoff from the paved power plant site could move contaminated materials to the Bay. To avoid this potential impact, stormwater will be diverted to a vegetated swale designed to capture suspended sediments before the runoff reaches the Bay. (5/31/06 RT 127; Ex. 46, pp. 4.2-10 to 4.2-11.) This will minimize the discharge of pollutants into the Bay, and is consistent with the Bay Conservation and Development Commission's policies on water quality. (Ex. 46, p. 4.2-5.)

As discussed more fully in the **SOIL AND WATER RESOURCES** portion of this Decision, the Regional Water Quality Control Board will oversee a process addressing concerns about migration of existing soil and groundwater contaminants into the Bay, as well as their potential effects upon the marine environment. (5/31/06 RT 7.) This ecological screening process/risk assessment will evaluate any transport of existing contaminants from the site to the Bay. It will allow the identification, and provide for the implementation, of specific mitigation measures necessary for source remediation or removal of migration pathways to the Bay. (5/31/06 RT 127, 130–31.)

This process will not be performed prior to the certification of the project (5/31/06 RT 133–34), in accordance with Regional Board procedures. Conditions of Certification in the **SOIL AND WATER RESOURCES** portion of this Decision ensure, however, that it will be performed and necessary mitigation measures specified and implemented. (See Conditions **S & W-1, S & W-2, S & W-3,** and **S & W-6**.)

## FINDINGS AND CONCLUSIONS

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

1. The project site provides little or no habitat value for common or special status plant or animal species.
2. No special status species exist on the project site or along the linear corridors.
3. The project will not create significant adverse effects to any protected species.
4. The primary biological concerns associated with the SFERP are nitrogen deposition on San Bruno Mountain, risk of avian collisions, and the potential transport of contaminants into San Francisco Bay.
5. Nitrogen deposition on San Bruno Mountain currently exceeds acceptable levels.

6. Emissions from SFERP, if not mitigated, will increase nitrogen deposition on San Bruno Mountain. While this increase alone is insignificant, it does contribute to an existing adverse cumulative impact.

7. The purchase of oxides of nitrogen offsets adequately mitigates SFERP's contribution to nitrogen deposition impacts.

8. The SFERP's structures will be low relative to the surrounding industrial development, and do not pose a significant risk for avian collisions.

9. The SFERP will not directly intake water from, nor discharge effluent into, San Francisco Bay.

10. The Regional Water Quality Control Board will oversee the process addressing migration of existing soil and ground water contamination from the project site to San Francisco Bay.

11. Conditions contained in the **SOIL AND WATER RESOURCES** portion of this Decision ensure that an ecological and human health risk assessment is performed, and that appropriate measures to adequately mitigate the potential migration of existing soil and groundwater contaminants from the project site to the Bay are identified and implemented.

We therefore conclude that implementation of the Conditions of Certification contained in the **AIR QUALITY** and **SOIL AND WATER RESOURCES** portions of this Decision ensure that construction and operation of the SFERP will not create any significant direct, indirect, or cumulative adverse impacts to biological resources, and that the project will conform with all applicable laws, ordinances, regulations, and standards relating to biological resources as identified in the pertinent portion of **Appendix A** of this Decision. No specific **BIOLOGICAL RESOURCES** Conditions of Certification are required.

## B. 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. Resources Code, § 5024.1; Cal. Code of Regs., tit. 14 § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. Since there is often a five year lag between resource evaluation and the date that eligibility is decided, cultural resources specialists may use 45 years as a criterion for considering potential eligibility.[33]

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

[33] The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

meeting the requirements of Section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, 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 of Regs., title 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. Resources 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: is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, is associated with the lives of persons significant in our past (Criterion 2); or, that 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 has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). [Pub. Resources Code §5024.1.] In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. [Cal. Code of Regs., title 14, §4852(c); Public Resources Code sections 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 project is located in the Potrero area of the western shoreline of San Francisco Bay, about 1.5 miles south of the Bay Bridge. The power plant site and laydown area are undeveloped and unpaved, consisting entirely of land created by filling in the Bay. The project area is industrial, with the former Pier 70 shipyard complex and warehouses to the north, warehouses to the south, and the Pier 80 shipping complex to the southeast. An open field, where a San Francisco MUNI Operations and Maintenance Facility is being constructed, is due west of the site. A residential area at the base of Potrero Hill known as the Dogpatch Neighborhood is northwest of the project area.

The project's 115kV underground transmission line route totals 3,000 feet in length. Except at the power plant and the switchyard, the entire proposed route is in City streets. Construction of the 900 foot long underground natural gas pipeline will be primarily open-trench in a 50-foot-wide construction corridor. The plant will require two water supply lines, one for process water and one for potable water. The process water line will be about 2,600 feet long, consisting of all new construction. The plant will also tap into the City's potable water distribution system.

The earliest documented occupation of the area between San Francisco and Monterey Bays dates to about 8,000 BP. (Before Present, based on the date of 1950). Archaeological evidence indicates that, prior to 2,000 BP, this area was occupied by small groups of hunter-gatherers who used both terrestrial and marine resources (primarily shellfish). Large shell mound sites began to be

occupied around San Francisco Bay around 2,500 BP.[34] The shell mound sites were occupied until the arrival of the Spanish.

Spanish explorers reached San Francisco Bay in 1769. Soldiers and priests established the San Francisco Presidio (military post) and the Mission Dolores on the peninsula in 1776. The Mexican government in the early 1830s closed the missions. Former mission lands were granted to soldiers and other Mexican citizens for use as cattle ranches. Ranching in the Potrero area continued during the American period that began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. The Gold Rush of 1849 brought large numbers of Anglo-Americans to San Francisco.

The wide expanse of the Mission Bay tidal flats north of the Potrero Point area discouraged settlement during the early American period, but the lack of development south of the flats, coupled with the deep water anchorage on the bay at the point, earmarked the area early in the City's history as an ideal location for the production of black powder, used for hard rock mining in the Sierra. E.I. du Pont de Nemours Company built the first black powder magazine on the south shore of the point in 1854 and initiated the industrial development of the Potrero area. Soon other industries were attracted to the vacant land to the south. From the late 1850s on, the Potrero area became the center for San Francisco's industrial activity. Between 1850 and 1950 many other industries, especially those oriented to marine activities, established themselves in the area, including a rope factory, steel rolling mills, several shipyards, a slaughterhouse, a lighting gas manufacturing plant, an electrical generating plant, a sugar-processing plant, a barrel factory, and a manufacturer of tin cans.

Before electricity was generally available in San Francisco, gas was used for lighting. Gas was manufactured from coal or oil until natural gas became

[34] The project area is in territory formerly occupied by the Native American group known to the Spanish and twentieth-century ethnographers as the Costanoan. The contemporary descendants of this group are members of the Ohlone Indian Tribe.

available in 1929. The City Gas Company established the first gas manufacturing plant at Potrero Point in 1872. The Potrero gas plant was converted from coal to oil in 1906. It was placed on standby status from 1929 to 1960, and most of it was subsequently demolished.

Claus Spreckels established the California Sugar Refinery at Potrero Point in 1881 to refine and produce sugar made from Hawaiian sugar cane. In 1901 Spreckels built Station A, a large brick structure that housed a steam-powered electrical generating plant. It was purchased by San Francisco Gas & Electric, which was renamed Pacific Gas & Electric. Station A was the largest steam electric plant west of the Rocky Mountains between 1903 and 1913 and supplied almost all of San Francisco's electricity during this period. With continuing equipment upgrades, Station A remained in operation until 1983. (Ex. 36, pp. 4.3-1 to 4.3-5.)

2. Cultural Resources

Applicant's records search included all known cultural resources within a one-quarter-mile radius of the plant site, laydown area, and appurtenant linear facilities. The object of the search was to identify known prehistoric and historical terrestrial and submerged archaeological sites, historic architectural structures, and Native American sacred sites in the project area. The records and relevant previous cultural resources studies examined included:

- A cultural resources study of the area around an earlier proposed expansion of the Potrero power plant;
- A cultural resources inventory of the PG&E Potrero power plant site was part of an EIR completed for the sale of the Potrero and other power plants;
- A 2000-01 survey of the Central Waterfront area done by the San Francisco Department of Planning;
- Energy Commission Final Staff Assessment of cultural resources for the proposed Potrero Unit 7 power plant project, which incorporated information from various sources relating to this project's application for certification;

- A cultural resources study for the original SFERP on the Potrero Power Plant property;
- A search for records (#NWIC 04-687) at the California Historical Resources Information System (CHRIS) at Sonoma State University in January, 2005;
- A review of the public on-line shipwrecks database of the State Lands Commission (SLC), and a search of the SLC's non-public shipwreck database;
- A search of the Native American Heritage Commission's (NAHC) database of Native American sacred lands; and
- An NAHC-provided list of Native Americans having historic ties to the Potrero area, to whom the applicant sent a letter on May 27, 2005, asking them if they were aware of any cultural resources which could be affected by the proposed project.

On April 26, 2005, Energy Commission staff obtained from the NAHC the names and addresses of Native Americans interested in the Potrero area. On May 12, 2005, Staff sent a letter to all listed Native Americans informing them of the project and asking that they contact Staff if they had any concerns about the project's potential effects on cultural resources. Applicant made an additional effort to obtain information on cultural resources from Native Americans, telephoning those on the NAHC list on July 11 and again on July 13, 2005. Applicant had received no responses to this outreach by December 1, 2005. (Ex. 46, pp. 4.3-12 to 4.3-13.)

The plant site was physically surveyed for archaeological resources on February 21, 2005, and the laydown area was surveyed on July 20, 2005. No indications of railroad usage and no other artifacts or features were found. Geotechnical boring conducted by Applicant at the plant site was monitored by a qualified archaeologist to assess the possibility of encountering submerged/buried cultural resources under the fill on the site. The soils pulled up from fifteen borings, ranging in depth from about 30 feet to over 168 feet below present ground surface, were examined but no significant cultural materials were found. (Ex. 46, p. 4.3-13.) Other archaeological surveys and studies of the proposed SFERP plant site and laydown area found no archaeological resources. The routes of the

linear facilities and the process water intake site were not surveyed because they are in City streets, under pavement, and/or in existing utility corridors.

The recent Central Waterfront survey, carried out for the San Francisco Department of Planning in 2000-01, identifies buildings and structures that are eligible for the NRHP and the CRHR, as well as those resources significant at the local level. The survey recorded 243 buildings having status codes indicating an undetermined status or either actual or potential eligibility for some register (the NRHP, or the CRHR, or local historic listing).

The survey identified four potential historic districts: the Dogpatch Neighborhood; Pier 70 (Bethlehem Steel's San Francisco Yard); Bridges and Tunnels; and Industrial-Type Buildings included within the Central Waterfront District. Dogpatch and Pier 70 have been officially recognized as historic districts. Pier 70 is also a fully documented district that may be eligible for the NRHP. The Bridges and Tunnels district and the Industrial-Type Buildings district are not officially recognized, but the Central Waterfront survey indicates they are fully documented, and potentially eligible for the NRHP. A larger potential historic district, the Central Waterfront Historic District, encompassing these four districts and corresponding to the boundaries of the Central Waterfront survey, has also been fully documented. (Ex. 46, p. 4.3-16.)

A number of buildings which were recorded in the Central Waterfront survey are located along the proposed SFERP linear facility routes. These buildings were evaluated for eligibility to the NRHP or the CRHR, for contributing or not contributing to the Central Waterfront Historic District and, in some instances, for special consideration in local planning. Only five recorded historic buildings along the routes of SFERP linear facilities are potentially significant resources.

Pier 70 structures are three to four blocks away from the proposed SFERP plant site, and the old power plant structures are two blocks away, with a tall building

intervening. The sugar warehouses, however, are about 1.5 blocks from the proposed SFERP plant site, with only relatively low buildings and the Bay between the two locations.

The NAHC informed the Applicant that no known Native American cultural resources in the project area were found in the NAHC's sacred lands database. Thus, no ethnographic resources have been identified in the vicinity of the project. (4/27/06 RT 102-03; Exs. 2, 3, 15, 16, 19, 21, 22, 23, 34, 39, 45, 46, pp. 4.3-1 to 4.3-30.)

3. Potential Impacts

Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic standing structures when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations.

Generally speaking, indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts

when project construction creates improved accessibility and vandalism or greater weather exposure becomes possible.

The evidence of record is uncontradicted in that no significant known archaeological resources have been identified in any of the areas affected by project construction. Subsurface disturbance, during construction, however, has the potential to disturb as yet unknown archaeological resources. Similarly, remains of Western Pacific Railroad could be encountered during construction of the plant. In addition, the entire plant site was once ten or more feet under water. There is some chance that submerged prehistoric cultural resources may now be buried under the fill used to create the land where the site is located. Procedures for identifying, evaluating, and mitigating these potential impacts must therefore be included in the Conditions of Certification (see **CUL-1, CUL-5, CUL-6, CUL-8**).

If newly found resources are eligible for the CRHR, the direct impacts from construction could materially impair the resources. Appropriate mitigation measures, such as avoidance or assessment and data recovery, will be implemented to reduce that impact to less than significant. Provisions for this eventuality are contained in Conditions of Certification (see **CUL-5, CUL-6, CUL-7** and **CUL-8)** requiring that construction workers be trained, as part of the Worker Environmental Awareness Program, to recognize archaeological resources; that construction be monitored by a qualified archaeologist and an interested Native American, if necessary, and halted if archaeological resources are encountered; that finds be evaluated for significance; and that data recovery be carried out if impacts cannot be avoided.

No standing historic structures would be demolished for this project. (4/27/06 RT 104.) The plant's tall combustion turbine stacks would, however, introduce a new element into the immediate area. The evidence shows that the power plant will have only a negligible effect on the integrity of the potential Central Waterfront

historic district because of its location at a distance from any of the buildings or structures identified as historic properties in the Central Waterfront study, and because the industrial character of the proposed power plant is entirely in keeping with the character of the potential Central Waterfront historic district. The evidence thus establishes that the introduction of the SFERP will not have a significant effect on the setting, feeling, or any character-defining features of the potential Central Waterfront historic district. (Ex. 46, p. 4.3-27.)

4. Cumulative Impacts

Cumulative impacts to historic architectural resources (structures or districts) in the project vicinity may occur if the construction of other projects results in increasing numbers of structures of historic age being demolished. However, the largest group of industrial historic buildings remaining in the area is the Pier 70 Historic District, adjacent to the proposed project on the north. The CCSF and Port of San Francisco are studying adaptive reuse of these structures as part of future development projects. Thus, these structures may be preserved as a result of future projects. The other group of historic buildings in the area is the residential, commercial, and industrial buildings in the Dogpatch Neighborhood west of Third Street. No specific projects proposed for this area are known.

The construction of other projects in the same vicinity as the SFERP could affect unknown subsurface archaeological deposits (both prehistoric and historic). In particular, the construction of San Francisco Municipal Railway's Metro East Light Rail Maintenance and Operations Facility on the 13 acres to the west of the power plant site has the potential to impact the same kinds of archaeological resources as may be affected by the construction of the power plant because the land for both has the same history. These impacts can be mitigated to less than significant by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance

or data recovery for resources evaluated as significant. (Ex. 46, pp. 4.3-28 to 4.3-29.)

## 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 project area.
2. Construction activities associated with the SFERP 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 project owner will obtain the services of a Native American monitor to observe ground disturbance activities in areas where Native American artifacts are discovered.
5. The project owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered.
6. The SFERP is compatible with the historical industrial setting of the area.
7. The potential for cumulative impacts to cultural resources is insignificant.
8. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

The Commission therefore concludes that with implementation of the Conditions of Certification below, the project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

## CONDITIONS OF CERTIFICATION

**CUL-1** Prior to the start of ground disturbance (including grading), the project owner shall obtain the services of a Cultural Resources Specialist

(CRS), and one or more alternates, if alternates are needed, to manage all monitoring, mitigation, and curation activities. The CRS may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility to the California Register of Historic 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 (Compliance Project Manager) approval of the CRS, unless 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 (CRS)**

The resume for the CRS and alternate(s) shall include information demonstrating that the minimum qualifications specified in the U.S. Secretary of the Interior's Guidelines, including the minimum qualifications for a specialization in historical archaeology, as published at Title 36 of the Code of Federal Regulations, Part 61, are met. In addition, the CRS shall have the following qualifications:

1. A technical specialty in anthropology or history and historical archaeology; and
2. At least three years of archaeological resource mitigation and field experience in California.

The resume of the CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS on referenced projects and shall demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during ground disturbance. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed CRS or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

**CULTURAL RESOURCES MONITOR (CRM)**

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., prehistoric 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 of 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 resignation of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval.

At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resource monitoring required by this condition. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs at least five days prior to the CRMs beginning on-site duties. At least 10 days prior to beginning specialized technical tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for on-site work and is prepared to implement the cultural resources Conditions of Certification.

**CUL-2** Prior to the start of ground disturbance (including grading), if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC and the 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 of the proposed plant site and linear facilities at an appropriate scale (e.g., 1:200 or 1" = 20') for plotting archaeological features. If the CRS requests enlargements for the plant site 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 maps and drawings that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless 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. The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

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.

**Verification:** At least 40 days prior to the start of ground disturbance, the project owner shall submit the subject documents to the CRS and the subject maps and drawings to the CPM and CRS. The CPM will review the project owner's submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

1. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide to the CRS and CPM revised maps and drawings for those changes and an e-mail or letter from the CRS stating that cultural resources information, compiled during the siting phase of the project, has been received.

2. At least 15 days prior to each phase, if project construction is phased, the project owner shall provide to the CRS the subject maps and drawings, if not previously provided, and notify the CRS and CPM in writing, identifying the proposed schedule of each project phase.

3. On a weekly basis during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, email, or fax.

4. Within five (5) days of identifying any changes to the scheduling of construction phases, the project owner shall provide written notice to the CRS and CPM of the changes.

**CUL-3** Prior to the start of ground disturbance (including grading), the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by (or its preparation overseen by) the CRS, to the CPM for approval. The CRMMP shall 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 monitor, and the project owner's on-site

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

The CRMMP shall include, but not be limited to, the following elements and measures:

1. A proposed 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 functions of the research questions formulated in the research design. A programmatic treatment plan may be included in the CRMMP for limited resource types.

2. The following statement shall be added to the CRMMP's Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. If there appears to be any conflict between the Conditions and the way in which they have been summarized, described, or interpreted in the CRMMP, the Conditions, as written in the Energy Commission's Final Decision, supersede any interpretation of the Conditions in the CRMMP." The Cultural Resources Conditions of Certification shall be attached as an appendix to the CRMMP.

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related archaeological tasks during ground disturbance, construction, and post-construction analysis phases of the project.

4. Identification of the person(s) expected to perform each of the archaeological tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.

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

6. A discussion of all avoidance measures (such as flagging or fencing) which will be used to prohibit or otherwise restrict access to sensitive cultural resource areas that are or, once discovered, may need to be avoided during construction and/or operation, and identification of areas where these measures may be implemented. The discussion shall address how these measures would be implemented prior to the start of construction, or after discovery,

and how long they would be needed to protect the resources from project-related effects.

7. A discussion of the requirement that all cultural resources encountered that cannot be treated programmatically shall be recorded on a DPR form 523, mapped, and photographed. In addition, a discussion shall be included of the requirement that all records produced and all archaeological materials collected and retained as a result of the archaeological investigations (survey, testing, monitoring, and data recovery) shall be curated in accordance with the State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," in a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Code of Federal Regulations, Part 79.

8. A discussion of any requirements, specifications, or funding needed for the curation of the materials to be delivered for curation and how requirements, specifications, and funding shall be met. This shall include information indicating that the project owner will pay all curation fees and state that any agreements concerning curation will be retained and be available for audit for the life of the project. Also, the name and phone number of the contact person at the curating institution shall be provided.

9. A discussion of the availability of and the designated specialist's access to equipment and supplies necessary for photographing and site mapping, and for recovering, recording, and photographing all cultural materials encountered during construction that cannot be treated programmatically.

10. A discussion of the required Cultural Resources Report (CRR, see **CUL-4**).

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall submit the subject CRMMP. Ground disturbance activities may not commence until the CRMMP is approved, unless specifically approved by the CPM. A letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, monitoring, and data recovery).

**CUL-4** The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by the CRS and shall be provided in the ARMR format. The CRR shall report on all field activities including dates, times, locations, samplings, analyses, and findings. All survey reports, Department of Parks and Recreation (DPR) 523 forms, and additional research reports not previously

submitted to the California Historical Resources Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR. If the ARMR reports have previously been sent to the CHRIS, then receipt letters from the CHRIS shall be included in an appendix.

**Verification:** Within 90 days after completion of all ground disturbance (including grading and landscaping), the project owner shall submit the subject CRR. Within 10 days after CPM approval of the CRR, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the SHPO, the CHRIS, and the curating institution (if archaeological materials were collected and curated).

**CUL-5** Prior to and for the duration of ground disturbance (including grading and landscaping), the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment. The training shall be 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 project owner will require all trained workers to sign a WEAP Certification of Completion form. The training shall include:

1. A discussion of applicable laws and penalties under the law;

2. Samples or visuals of artifacts and visuals of archaeological deposits that might be found in the project area;

3. Instruction that the CRS, the alternate CRS, and the CRMs have the authority to halt construction to the extent necessary, as determined by the CRS, in the event of the discovery of or an unanticipated impact to a cultural resource;

4. Instruction that employees are required to halt work on their own in the vicinity of a potential cultural resources discovery and to contact their supervisor and the CRS or CRM, and that redirection of work shall be determined by the construction supervisor and the CRS;

5. An informational brochure that identifies reporting procedures in the event of a discovery;

6. A WEAP Certification of Completion form to be 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 cultural resources portion of the WEAP program, unless specifically approved by the CPM.

**Verification:** At least 30 days prior to the beginning of 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 Certification of Completion form which the project owner shall require each WEAP-trained worker to sign. The project owner shall provide in the Monthly Compliance Report the WEAP Certification of Completion forms of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

**CUL-6** The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor ground disturbance (including grading and landscaping) full-time at the project site and for the full width and length of excavations for linear facilities (such as underground transmission lines and water, gas, and sewer pipelines), except for the process water pipeline along Third and Marin Streets, to ensure there are no impacts to undiscovered cultural resources and to ensure that known cultural resources are not impacted in an unanticipated manner. If ground disturbance (such as grading for run-off control) becomes necessary at the laydown or any other ancillary areas, full-time monitoring shall be conducted there as well. Full-time archaeological monitoring is defined as archaeological monitoring of all earth-moving activities on a construction site for as long as the activities are ongoing. Full-time archaeological monitoring may require one monitor per active earthmoving machine working in archaeologically sensitive areas. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter or e-mail providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval at least 24 hours prior to any reduction in monitoring. Reduced monitoring will not be approved at the site of the underground transmission line splice boxes.

The project owner shall ensure that the CRS has an agreement in effect for the curation of artifacts recovered during project-related archaeological activities. 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, any other cultural resources activities, and any instances of non-compliance with the Conditions of Certification and/or applicable LORS. Copies of the daily logs shall be provided to the CPM by the CRS. In addition, the CRS shall use these logs to compile a monthly summary report on the progress or status of cultural resources-related activities. If there are no monitoring activities, the summary report shall specify why

monitoring has been suspended. The CRS may informally discuss cultural resources 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 of Certification.

The CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours of any incidents of non-compliance with the Cultural Resources Conditions of Certification and/or applicable LORS, upon becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions of Certification. 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 Monthly Compliance Report (MCR).

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall provide to the CPM a copy of the agreement between the CRS, or between the environmental firm employing the CRS, and the curation facility(ies). At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS reproducible copies of forms to be used as daily monitoring logs and non-compliance reports. Each day the CRS shall provide copies of the legibly handwritten daily logs of the monitors to the CPM as emails or in some other form acceptable to the CPM. While monitoring is ongoing, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS. Copies of daily logs shall be retained by the project owner on-site during construction.

**CUL-7** A Native American monitor or monitors shall be obtained to monitor ground disturbance (including grading and landscaping) in areas where Native American artifacts may be discovered. Lists of concerned Native Americans, with contact information, and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor or monitors shall be given to Native Americans with traditional ties to the area that shall be monitored.

**Verification:** At least one (1) week prior to ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. The project owner shall also provide a plan identifying the proposed monitoring schedule and information explaining how Native Americans who wish to provide comments will be allowed to comment. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project

owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

**CUL-8** The project owner shall grant authority to halt construction to the CRS, alternate CRS, and the CRMs in the event previously unknown cultural resources sites or materials are encountered (discovery), or if known resources may be impacted in a previously unanticipated manner. Redirection of ground disturbance (including grading and landscaping) shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources are found or impacts can be anticipated, construction shall be halted or redirected in the immediate vicinity of the find and shall remain halted or redirected until all of the following have occurred:

1. The CRS has notified the project owner and the CPM has been notified within 24 hours of the discovery, or by the following Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday. Notification to the CPM must 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 Department of Parks and Recreation (DPR) 523 primary form for all cultural materials that cannot be treated programmatically. The 523 primary form will include in the Description entry a recommendation of the significance of the find. The completed forms shall be submitted to the CPM.

3. The CRS and the project owner have consulted with the CPM, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, including the curation of the artifacts, or other appropriate mitigation.

4. Any necessary data recovery and mitigation has been completed.

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction activities within 100 feet 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. For discovered cultural material that cannot be treated programmatically, completed DPR form 523s shall be submitted to the CPM for review and approval no later than 48 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever is more appropriate for the subject cultural material.

## C. GEOLOGY AND PALEONTOLOGY

This section reviews the project's potential impacts on significant geological and paleontological resources. It also evaluates whether project-related activities could result in exposure to geological hazards, whether the facility can be designed and constructed to avoid any such hazards, and whether geologic or mineralogic resources are present. The analysis of record also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present. The parties did not dispute any matters in this discipline.[35] (4/27/06 RT 109-121.)

There are two types of impacts considered in this section. The first are geologic hazards, which could impact proper functioning of the proposed facility and include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches. The second considers potential impacts the proposed facility could have on existing geologic, mineralogic, and paleontologic resources.

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located along the eastern side of the San Francisco Peninsula, near the San Francisco Bay and north of the Islais Creek Channel within the limits of the Potrero District. (Ex. 15, p. 8.15-1.) The San Francisco Peninsula lies within the northern Coast Ranges physiographic province. This province is characterized by a northwest-trending series of elongated ranges and narrow valleys; it extends from the Oregon border to the Transverse Ranges in Southern California.

[35]Intervenor CARE submitted prefiled testimony on this topic but neither the intervenor or its witness appeared at the evidentiary hearing. (4/27/06 RT 121.)

Potrero Point lies within the Hunters Point Shear Zone. This shear zone is an older structure that trends northwest across the peninsula and is part of the Coast Range Thrust Fault that juxtaposed the Franciscan Formation and Great Valley Sequence. The California Division of Mines and Geology considers the shear zone inactive. No known active faults cross the SFERP site. (Ex. 46, p. 5.2-2.)

Site Conditions. The project site is relatively level and consists of reclaimed tidal flats. The site is immediately underlain by artificial fill, younger bay mud, upper layered sediments, older bay mud, lower layered sediments, and Franciscan-age bedrock. The thickness of the artificial fill materials varies from 21 to 31 feet across the site. The fill material generally consists of loose to medium dense, poorly graded to well-graded gravels and silty to clayey gravels and sands that contain rubble and debris (e.g. bricks, concrete, wood, and re-worked bedrock). Although the artificial fill could contain fossils since it is typically comprised of sediments from older deposits, any such fossils would lack stratigraphic context such that they would only have very limited scientific and educational value.

The younger bay mud that underlies the artificial fill site varies in thickness between 18 and 40 feet across the site. This unit is comprised of soft to stiff fat clay, and includes zones that exhibit trace to abundant shell fragments.

The upper layered sediments consist of interbedded alluvial and marine sediments that are comprised of silty and clayey sands, sandy to clayey silts, lean to fat clays, and clean poorly graded sands. The fine-grain soils in this unit are generally stiff to very stiff, while the granular soils are typically dense to very dense.

The layers of older bay mud are interfingered with the overlying upper layered sediments at depths between 70 and 90 feet and 110 and 135 feet below existing

grade. This material is classified as stiff and as exhibiting a trace amount of shell fragments.

The lower layered sediments consist of a sequence of interbedded alluvial and marine sediments present at a depth between 135 and 158 feet below existing grade. These materials are classified as very stiff to hard alluvial sandy lean clays and marine deposited fat clays.

Artificial fill materials and underlying sediments and bedrock are anticipated along the proposed process water supply pipeline, underground electrical, and natural gas pipeline alignments. Ground water also is most likely present. (Exs. 15, 16, 35, 39, 45, 46, pp. 5.2-3 to 5.2-4.)

Paleontologic Resources With the exception of the artificial fill that mantles the site, the soils present, which include early Holocene and late Pleistocene bay muds and sediments, have produced numerous significant plant, invertebrate, and vertebrate fossils at previously recorded fossil sites and, as a result, have a high potential for additional similar fossils to be uncovered by excavations for project construction that extend into native materials. (Ex. 46, p. 5.2-3.)

Paleontological resources have been documented within 1 mile of the project site, and the native materials exhibit a high sensitivity rating with respect to containing significant paleontologic resources. Since the project will include significant amounts of grading, foundation excavation, and utility trenching, the probability that paleontological resources will be encountered during such activities appears to be high when native materials are encountered.

Potential impacts to paleontologic resources would include, but not be limited to, disturbing the natural depositional state of the resource that would prevent proper chronological inventory, in addition to damaging (i.e. crushing, cracking, and/or fragmentation) the resource itself. Conditions of Certification **PAL-1** to **PAL-7**

are designed to mitigate any paleontological resource impacts to a less than significant level. (Ex. 46, pp. 5.2-5, 5.2-9.)

Seismicity. The project is located within seismic Zone 4, which has the most stringent building requirements in the CBC. No active or potentially active faults are known to cross the power plant footprint or its associated linear facilities. The closest known active fault is the San Andreas Fault, which is located approximately 13 kilometers west of the project site. This fault is designated a class "A" fault under the CBC (a fault with a maximum magnitude earthquake greater than 7 and a slip rate in excess of 5 mm/year). The maximum moment magnitude earthquake, defined as the largest earthquake that a given fault is considered capable of generating, for the segment of San Andreas Fault closest to the project is a moment magnitude 7.9 event. The evidence uniformly establishes the strong ground shaking will be mitigated to less than significant through facility design as required by Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section of this Decision. (4/27/06 RT 117-18.)

Liquefaction. Liquefaction is a condition in which a cohesion less soil loses its shear strength due to a sudden increase in pore water pressure. The soils most prone to liquefaction during earthquakes are submerged fine-grained, poorly graded, sands and silts. The plant site and the proposed project linear facilities are located in a liquefaction hazard zone. (4/27/06 RT 114, 117.)

Potentially liquefiable soils are expected to occur as zones or pockets, rather than as horizontally or vertically continuous layers. The potential for liquefaction-induced lateral spreading within the fill is considered low due to low surface gradients at the project site, the heterogeneous nature of the fill, and the lateral confinement present immediately around the site. (Ex. 46, p. 5.2-6.) The potential impact from liquefaction can be mitigated to less than significant

through facility design as required by Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section.

Dynamic Compaction. Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume since the soil grains tend to rearrange into a more dense state (an increase in soil density). The decrease in volume can result in settlement of overlying structural improvements.

The evidence shows that the potential for localized areas of dynamic compaction is considered high for the site and associated project linear facilities that pass through artificial fill materials; however, this potential impact will be mitigated to less than significant through facility design as required by Conditions of Certification **GEN-1, GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section. (Ex. 46, p. 5.2-7.)

Geologic, Mineralogic, and Paleontologic Resources. The evidence of record further shows that there are no known viable geologic or mineralogic resources located at or immediately adjacent to the proposed SFERP site. The power plant footprint and the majority of the proposed linear facility routes are located in mineral resource zone (MRZ) MRZ-1, while portions of the proposed underground electrical and process water line routes are within MRZ-4. The MRZ-1 designation means that there are no known mineralogical resources, while the MRZ-4 designation indicates an area where available information is inadequate for assignment to any other MRZ zone. The only potential mineral resource in the vicinity of the project site is construction aggregate generated from the serpentine bedrock. This is not a viable resource, however, since the site and surrounding area have been developed, the amount of potential aggregate would be very limited for such a small site, ground water is present at shallow depths, and the potential resource is covered by artificial fill. (Ex. 46, pp. 5.2-6 to 5.2-9.)

Finally, facility closure activities are not anticipated to impact geologic, mineralogic, or paleontologic resources. This is due to the fact that no such resources are known to exist at the power plant location or along its proposed linear facilities. In addition, decommissioning and closure of the power plant should not negatively affect geologic, mineralogic, or paleontologic resources since the majority of the ground disturbed in plant decommissioning and closure would have been previously disturbed during construction and operation of the facility.

## 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. The project will be designed to withstand earthquake shaking in accordance with the requirements for Seismic Zone 4 established in the California Building Code.

3. There are no known significant geologic or mineralogic resources in the project area.

4. Although there are no known paleontologic resources on the site, such resources may be discovered during project construction.

5. The Conditions of Certification ensure that activities associated with construction and operation of the project will cause no significant adverse impacts to geological or paleontological resources.

6. The Conditions of Certification are sufficient to ensure that the project complies with all applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineralogic, or paleontological resources.

## CONDITIONS OF CERTIFICATION

General Conditions of Certification with respect to Geology are covered under Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section of this Decision. Paleontological Conditions of Certification follow.

**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. he 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 experience monitoring in California; or
- AS or AA in geology, paleontology or biology and four years experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

**Verification:** (1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

**PAL-2** The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated in previously undisturbed sediments. 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 will be 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 shall be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Prior to work commencing on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field

manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

**Verification:** (1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

(2) If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

(3) If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

**PAL-3** The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;
3. A thorough discussion of the anticipated 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 where undisturbed sediment is likely to be encountered during excavations and 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 in native sediment, 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 in previously undisturbed soils. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern. If appropriate, multi-lingual

training shall be provided for workers not fluent in English. 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 shall be provided 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 Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

**Verification:** (1) At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP including the brochure with the set of reporting procedures the workers are to follow.

(2) At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning on using a video for interim training.

(3) If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

(4) In the Monthly Compliance Report (MCR) the project owner shall provide copies of the WEAP Certification of Completion forms with the names of those trained and the trainer or type of training (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. 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 notifies the CPM within 24 hours 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 that will be placed in the Monthly Compliance Reports (MCR). The summary will include the name(s) of PRS or PRM(s) active during the month, general

descriptions of training and monitored construction activities and general locations of excavations, grading, etc. A section of the report shall include: the 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 the project construction.

**Verification:** The project owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resource Report (See **PAL-7**). The project owner is 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
# San Francisco Reliability Project (Docket #04-AFC-1)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on Cultural, Paleontology and Biological Resources for all personnel (i.e., construction supervisors, crews and plant operators) working on-site or at related facilities. By signing below, the participant indicates that they understand and shall abide by the guidelines set forth in the Program materials. Include this completed form in the Monthly Compliance Report.

| No. | Employee Name | Title/Company | Signature |
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Cultural Trainer: _____ Signature:_____Date: __/___/____

Paleo Trainer: _____ Signature:_____Date: __/___/____

Biological Trainer: _____ Signature:_____Date: __/___/__

## D. SOIL AND WATER RESOURCES

This section 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.

The record in this area developed over time with Applicant initially submitting evidence characterizing the existing condition of the site based on studies done for the MUNI Maintenance and Operations Center adjacent to the site. Requests by Staff, in consultation with the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB or Regional Board), lead to further studies to more specifically characterize the existing condition of the project site. By the close of the evidentiary record, all differences between the Applicant, Staff, and the Regional Board staff had been resolved. We have incorporated the conditions reflecting this resolution.

Applicant presented a panel of expert witnesses and submitted extensive evidence related to the SFERP's effects on soil and water resources. (5/22/06 RT 168-178; Exs. 3,15, 16, 19, 21, 24, 36, 39.) Applicant's witnesses testified that potential soil and water impacts of the project will be mitigated to less than significant levels through implementing the agreed-upon Conditions of Certification which follow this discussion. A panel of expert witnesses for the City determined that the project would comply with all applicable laws, ordinances, regulations, and standards related to soil and water resources. (Ex. 88, pp. 11-12.)

After analyzing supplemental studies done by both Staff and Applicant, the two parties agreed upon appropriate conditions of certification for mitigation of any environmental impacts from the project. (*Id.,* RT 115:23-25, 130.)

Intervenors CARE and Sarvey offered no evidence regarding either soil and water resources or waste management. (5/22/06 RT 166.) However, CARE argued that the approach agreed upon by Applicant and Staff violates the City's ordinances and CEQA. (CARE Opening Brief at 24.) CARE urges that "…deferring mitigation until after the project is approved…" denies public input to the decision-making process and amounts to a "piecemeal" analysis prohibited by CEQA. (*Id.* at 25). CARE further advocates that review of the project's impact should be combined with review of the MUNI Metro-East Facility as one project. (*Id.* at 27.) CARE provided neither evidence nor persuasive argument in support of its positions.

Regulatory Jurisdiction

Because of the pre-existing contamination of the project's brownfield site, jurisdiction over clean-up or remediation requirements is addressed primarily by the Regional Board, in conjunction with and in addition to the analysis carried out by the Energy Commission staff. (See 5/22/06 RT 78-86.)

State policy supports the re-use of brownfield sites, as well as ways to make such re-use less problematic to potential developers. Otherwise such potential developers may be wary of assuming clean-up liability when they purchase brownfield sites. One set of laws implementing the encouragement of brownfield re-use is the Unified Agency Review of Hazardous Release Sites. (Health & Saf. Code, § 25260 *et seq.*) Its primary purpose is allowing the owners of a polluted site to have a single, Cal-EPA designated State "administering agency" that exercises all State and local authority with regard to "site investigation and

remedial action."[36] The Unified Agency Review provisions concentrate all State and local authority in a singular "administering agency," which is either DTSC or the local regional water quality control board with jurisdiction in the area. [Health & Saf. Code, § 25262(c).] Once designated, the administering agency preempts the authority of all other State and local agencies for the purposes of site investigation and remedial action. [Health & Saf. Code, § 25264(a).] The Cal-EPA Site Designation Committee designated the Regional Board as the Administering Agency for the property containing the SFERP site on December 10, 1998. (Ex. 88, App. C.)

This sweeping jurisdictional authority potentially conflicts with the Commission's broad preemptive authority for power plant siting in the Warren-Alquist Act. However, the designated administering agency's authority is not based on an application for a permit or other government approval. Rather than a permit, a "responsible party" is seeking a single government entity with which to deal with a polluted site problem, as well as a legal "safe harbor" for its remediation activities.[37]

It should be noted the contamination on SFERP site is a *pre-existing* condition that is not related to the project. In fact, Staff determined that the project itself will have no impacts on the Bay and that project construction is likely to reduce existing contamination risks as a result of capping the site. Thus the pre-existing contamination is not related to the project and is not part of a CEQA analysis of project impacts. This pre-existing contamination will be addressed by the Regional Board. The staffs of both the Commission and the Regional Board

[36] Prior to this statute, a landowner could be subject to several State and local jurisdictions regarding efforts to investigate and remediate a given property; such jurisdictions could include the Department of Toxic Substance Control ("DTSC"), regional water quality control boards, counties, municipalities, and sometimes other State agencies.

[37] Although administering agencies do not grant permits, they may issue a "certificate of completion" when a responsible party completes an agency site investigation and remedial action to the agency's satisfaction. [Health & Safety. Code, § 25264(b).] The significance of such a certificate is that it provides a high degree of legal immunity from any action by other state and local agencies regarding site remediation. [Health & Saf. Code, § 25264(c).]

have worked cooperatively to make sure that requirements for both agency roles are satisfied and that the public health and the environment is protected. (See 5/22/06 RT 78-86, 93.)

**SUMMARY OF THE EVIDENCE**

The site subject to this designation of Regional Board jurisdiction for remediation is described as "the Former Western Pacific Property," approximately 30 acres of property west of Pier 80 in San Francisco County. (*Ibid*.) This piece of land, which consists of three separate parcels[38], was once used as a rail switchyard. (Ex. 88, p. 3.)

1. Soil Resources

The entire SFERP site, the adjacent construction laydown area, and the proposed linear facilities, are located in areas that were formerly part of San Francisco Bay and its adjacent tidal flats. The majority of this soil unit is urban land with a smaller portion of soils consisting of highly variable fill material. The fill material may consist of any combination of soil, gravel, concrete, solid waste and Bay Mud, with fill material ranging in depth from approximately 8 to 31 feet below existing grade. This fill is underlain by Bay Mud extending to depths of approximately 50 feet. Stiff sandy silty clay and silty clayey sand extend below the Bay Mud to Franciscan bedrock at a depth of over 200 feet (*Id.*) The soil is not suitable for crop production and it has low erosion potential. There are no agricultural land uses within the SFERP site or vicinity. (Ex. 46, p. 4.9-6.)

Soil characteristics of concern at the SFERP site are the potential for a high water table and the potential for subsidence. Subsidence is possible in areas containing primarily fill material and could impact the foundation of the structures at the SFERP site. Given the industrial history of the SFERP site and

[38] One parcel is owned by MUNI for light rail maintenance and operations, one is the four-acre SFERP site, and the parcel to the east is owned by the Port of San Francisco. (Ex. 88, p. 3.)

surrounding properties, soil materials impacted by heavy metals, polynuclear aromatic hydrocarbons and residues from a former manufactured gas plant will likely be encountered during drilling and excavation activities. (*Id.*)

Staff determined that potential environment risks could be mitigated through the use of Best Management Practices (BMPs), the drainage sediment control plan, and Storm Water Pollution Prevention Plans (SWPPPs) that are included in Conditions of Certification **SOIL&WATER 1** and **2**. (5/22/06 RT 111.)

2. Water

There are no surface waters located within the boundary of the SFERP site or construction laydown areas. The site is approximately 500 feet from the western shore of San Francisco Bay. (*Id*. p. 4.9-7.) Construction elevations for the site will range from 12 to 14 feet. The highest recorded tide in the area is 9.25 feet[39]. Flooding on the San Francisco waterfront has the potential to impact the project site. (*Id.*) Surface waters and ground waters at the site flow towards the Bay (5/22/06 RT 110:23-25.)

The water table is shallow with a depth to groundwater of approximately 6.3 to 7.6 feet below the ground surface. Groundwater generally flows to the east/northeast through the project site with a relatively flat gradient (0.001 to 0.00001 feet/foot). It is likely that groundwater will be encountered during some construction activities, which will require dewatering. (Ex. 46, p. 4.9-7.)

Post-construction treatment of storm water will be accomplished by directing sheet flow from both the power plant site and 25th Street in front of the power plant into a storm water treatment feature incorporating a dry, vegetated swale. An oil/water separator may be used if deemed necessary though on-site review. The finished plant site will be an impervious surface, as is the existing street.

[39] This level does not account for wave run-up.

Thus, all surface water will flow easterly to the vegetated swale that will flow northward into San Francisco Bay. (Exs. 1, 2, 10, 12, 15, 16, 17, 18, 19, 25, 29, 39, 45, 46; 4/27/06 RT 18-54.)

3. Project Water Supply and Treatment

The primary water supply for the project will be reclaimed water from the Southeast Water Pollution Control Plant. The project will use a water treatment system that includes ultra-filtration, disinfection, and reverse osmosis. A duel pumping system will prevent the mixing of treated wastewater and potable water supplies. (5/22/06 RT 113.)

Wastewater discharge will be to the combined sewer system. (*Id.*) Staff detailed the quality of the disinfected tertiary recycled water supply in Table 3 of its testimony. (Ex. 46, Table 3, p. 4.9-13.)

4. Soil & Groundwater Contamination

The project site is a brownfield site on a reclaimed area of San Francisco Bay. As is typical for such sites, soil and groundwater contamination were found during investigations performed in 1999 at the adjacent MUNI site. The site is impacted by petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAH), VOCs, and metals from previous land uses. There is the potential that existing contamination could be migrating towards San Francisco Bay.

Total petroleum hydrocarbon (TPH), diesel/motor oil/bunker oil, arsenic, lead, other metals and semi-volatile organic compounds were found in the soil and groundwater at the adjacent MUNI site. (Ex. 46, p. 4.9-8.). Groundwater sampling at monitoring wells located west (up gradient) of the SFERP site and near the northeast corner (down gradient) of the project site was conducted as part of the MUNI site investigation. Results of the sampling found low

concentrations of TPH compounds, lead, and arsenic to be present in the groundwater both up gradient and down gradient of the SFERP site. These sample results indicate a high likelihood that the site may have areas of significant soil and groundwater contamination. (*Id.*)

A Human Health and Ecological Risk Assessment was conducted for the Western Pacific Property – Port Site in September 2000. This assessment, which included the SFERP site, suggested that the threat to human health and the environment is within acceptable levels. Staff, however, determined that insufficient data was collected from the currently-proposed SFERP site to provide an adequate risk characterization. Conditions of Certification will require additional data. (*Id.*)

Notwithstanding the evidence of contamination, expert witnesses for the Applicant, the Staff, and the Regional Board all testified that there is nothing unusual or particularly severe about the contamination on the project site. (5/22/06 RT 25:11-18; 106:6-16; 5/31/06 RT 23-24.) The expert witnesses for Applicant and for Staff also testified that the project site has been well characterized. (5/22/06 RT 25:11-18; 5/22/06 RT 127-8.) Nevertheless, additional studies will be required.

5. Additional Site Characterization

The City originally submitted the health risk assessment (HRA) from the 1999-2000 investigations of the adjacent MUNI site in support of its application for the project site. Staff determined that the use of this HRA not specific to the SFERP site, used outdated methods that are inconsistent with current Cal-EPA requirements, and did not include all currently required data. (Ex. 46, p. 4.13-4.) Staff therefore asked the City to provide site specific sampling for the SFERP site itself, with a new HRA and using the Regional Board's 2005 Environmental

Screening Levels (ESL). (*Id*. at p. 4.13-6) Staff also advocated preparation of a new Ecological Risk Assessment (ERA)[40] because of the project site's:

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- Close proximity of the SFERP Site to San Francisco Bay.
- Known high concentrations of soil contaminants at the SFERP Site.
- Groundwater flow direction; which flows from the SFERP site towards San Francisco Bay.
- The high potential for groundwater contamination at the SFERP site.

**Mitigation**

As a result of Staff consultations with the Regional Board staff and of various workshops, Staff, Applicant, and the Regional Board staff agreed on appropriate Conditions of Certification to protect public health, worker safety, and to assess any existing effects of site pollution on the San Francisco Bay. The agreed-upon Conditions have been crafted to meet the regulatory mandates of each of the three jurisdictions involved: Staff's requirement pursuant to CEQA to assess and mitigate project impacts; the City of San Francisco's requirements under the City's Maher ordinance regarding industrial site pollution; and, the Regional Board's duties to investigate and remediate existing soil and groundwater pollution. The Conditions require:

1. **Human Health Risk Assessment (HRA).** This will measure human health risk from the exposure of persons to chemicals from remediation activities (if required) and site construction (including risks to workers). The HRA will specify risk reduction measures to be taken. The HRA pertains to *project impacts*, principally from construction.

2. **Screening Level Ecological Risk Assessment (ERA)**. The ERA will consider existing groundwater pollution and whether such pollution may be reaching and affecting the San Francisco Bay. Although it could indicate the need for site remediation requirements by the Regional Board,

[40] The purpose of the ERA is to determine the impacts of *existing pollution* on the Bay, not to determine *project impact*. (*Id.* at p. 4.9-9.) Thus, the ERA will help the Regional Board determine what remediation is required, but is not relevant to the Commission's statutory duty to disclose and mitigate project impacts.

the ERA pertains to *existing pollution* rather than to project impacts subject to CEQA mitigation.

3. **Site Cleanup Plan (SCP).** If the above analyses indicate that site remediation is required, the SCP will indicate the remedial measures to be taken. The SCP, which is a Regional Board-approved document, will include any necessary risk reduction measures indicated by the HRA to protect public health and worker safety.[41]

4. **(Revised) Risk Management Plan (RMP).** This plan governs soil and groundwater handling procedures.

5. **Site Management Plan (SMP).** The SMP governs specific long-term management of the site, taking into account the SCP, ERA, and HRA, including ongoing mitigation requirements and procedures.

6. **Certification Report.** This is required by the City's Maher Ordinance, often referred to as Article 22A; it requires the results of the verification sampling analysis.

The purpose of the above-required analyses, reports, and plans is to provide comprehensive risk assessment and specific measures as required to protect public health and worker safety. The measures will include the Regional Board's requirements for any remediation activities regarding existing pollution. To protect public health during construction and for any required remediation activities, conservatively health-protective performance standards are included in Conditions of Certification **Waste-6** and **Soil and Water-13**. The performance standards contained in the Conditions of Certification ensure that project construction and any required remediation will not result in a public health risk exceeding 1 in one million (cancer) and a 1.0 Hazard Index, and that workers will not be subject to greater than 1 in 100,000 (cancer) and 1.0 Hazard Index. (Ex. 49, p. 6.)

[41] Rather than an SCP, the Regional Board may issue a "no further action letter" (Ex. 88, p. 10.) These types of mitigation generally required for remediation have been identified and discussed in testimony by City, Staff, and Regional Board staff. These measures will include rigorous dust control (already in proposed Conditions of Certification), and may additionally include "hot spot" soil removal, ventilation of soil vapor, and pumping and treatment of polluted groundwater. (Ex. 49, pp. 2, 4-5; May 31 RT 15-16.)

Pre-Construction. The Conditions of Certification require the Applicant to prepare and obtain approval for the following documents prior to commencement of any activities that disturb soil or the beginning of site mobilization:

- a site specific health and screening level ecological risk assessment
- a site clean up-plan (SCP)
- a risk management plan (RMP)

The documents must be approved by the Regional Board staff and reviewed by the San Francisco Public Health Department (SFDPH) for verification of compliance with the Maher Ordinance[42]. In addition, the documents must be approved as meeting the conditions of certification by the CPM. (Ex. 88 at 15.)

Pre-Operation. Prior to commencing commercial operations, the City must prepare:

- a site management plan (SMP)
- A certification report.

These documents must be approved by the Regional Board and reviewed by the SFDPH for verification of compliance with Article 22A. In addition, the documents must be approved as meeting the Conditions of Certification by the CPM. The City cannot begin commercial operation until it obtains these approvals, including approval by the CPM. (Ex. 88, pp. 15-16.)

During the evidentiary hearings, intervenors asked which entity has the ultimate authority in reviewing Applicant's proposal. In fact, the Conditions of Certification give each agency a meaningful and appropriate role. In the case of the Energy Commission, the CPM must approve the documents as meeting the Conditions

[42] Article 22A of the San Francisco Public Health Code.

of Certification. However, the Conditions of Certification give an enforcement role to both the Regional Board and the CEC. The joint enforcement is further memorialized and enforced by the formal MOU entered by the staffs of the two agencies on June 5, 2006.[43]

At a May 31, 2006 evidentiary hearing Stephen Hill, head of the Toxics Cleanup Division for the Regional Board staff, testified that the health protective standards proposed by the Commission staff to address CEQA mitigation are appropriate, and that the Regional Board has agreed to implement them through the conditions of the Regional Board's SCP[44]. (See 5/31/06 RT 13.) The proposed performance standards for the project's CEQA mitigation are similar to the kinds of conditions used by the Regional Board, which also typically employs performance standards. (*Id*.) Mr. Hill also stated that the MOU between the Regional Board staff and Commission Staff would provide for the Commission to have an advisory role when the Regional Board prescribes any future site remediation requirements.[45] (5/31/06 RT 19-20.) In this consultative role the Commission staff will be able to assure the implementation of measures that will meet the performance standards that protect public health and worker safety. (*Ibid*.)

[43] Memorandum of Understanding (MOU) Between the California Energy Commission staff and Staff of the San Francisco Bay Regional Water Quality Control Board, dated June 5, 2006, docketed June 8, 2006. The MOU is part of the administrative record in this case and supplements testimony in evidence. (5/31/06 RT 11-12,19.) CARE contends that the MOU between Staff and the Regional Board staff which covers site remediation measures, violates the Open Meetings Act. (CARE Brief, pp. 19-23.) However, agreements between agency staffs (as opposed to decision-making boards and commissions) are not subject to the Open Meetings Act, and the legal authority cited by CARE is not on point. It deals with closed sessions of a City Council, which is a deliberative decision-making body. In a letter dated June 22, 2006, the Executive Officer of the Regional Board staff also rejected CARE's Open Meetings Act argument.

[44] Mr. Hill, appeared at the May 31 evidentiary hearing, at the Committee's request, to corroborate the Staff's and Applicant's proposed mitigation approach and to answer Committee questions. (5/31/06 RT 5-24.)

[45]The staff-to-staff MOU, signed by the staff directors of both agencies, was docketed on June 6, 2006, and placed on the Commission's SFERP website.

Mr. Hill testified about the Regional Board's role as the designated "administering agency" for the project site. (5/31/06 RT 7.) He recalled the cooperative consultations between his staff and the Commission staff regarding the SFERP site and how his agency intends to implement performance standards in its regulation of the site. (*Id*. RT 12-13.) Mr. Hill also described the SFERP site as a typical cleanup site in the Bay Area which did not appear to pose a particular threat in terms of human health or water quality. (5/31/06 RT 23-24.)

The Regional Board staff witness further testified that the conditions of certification are consistent with the Regional Board's process and will be incorporated by that agency. (5/31/06 RT 17.) CEC Staff witnesses testified that, with the conditions of certification, the project would have no significant impacts on water quality. (5/22/06 RT 143: 23.) In arriving at this conclusion, CEC soil and water witnesses also made reference to conditions of certification that will address soil erosion, including use of best management practices. (5/22/06 RT 160: 2-23.) The record further establishes that any impacts on the Bay from contaminated soil would arise from pre-existing conditions and would not be caused by the project. (5/22/06 RT 93:6-24; see also 5/31/06 RT at 131: 2-5.)

**Intervenors' Arguments**

Intervenors CARE and Sarvey have argued that the mitigation approach supported by expert witnesses for Applicant, Commission staff, and the Regional Board staff, raise problems concerning deferred mitigation, a lack of public input, and cumulative impacts. However, the evidence does not support these charges.

Intervenor CARE contends that the City is inappropriately postponing the identification of mitigation measures until after the permit is issued by the Commission and that doing so violates City ordinances as well as CEQA. (CARE

Opening Brief, p. 24.) These claims are not supported by the law or the evidence of record. On the contrary, it appears that the City has cooperated with Staff in reaching agreement on a set of conditions that will accurately characterize the project site and provide for appropriate remediation of any contamination which is found. In adopting the proposed Conditions of Certification the Commission has not deferred mitigation. Rather, it has required complete characterization of the pollution at the site and required health protective performance standards for any subsequent remediation activity. In addition, based on the site characterization, it has provided a "menu" of possible remediation measures. In preparing its proposed conditions the Staff has collaborated with the Regional Board staff to get agreement that the Regional Board, which determines site remediation in its role as the Administering Agency, can implement the measures. These conditions will make sure that the health-protective performance standards incorporated in this Decision will fully address any subsequent site cleanup activities. Further, Staff has entered into an MOU to collaborate with the Regional Board to make sure that the performance standards are observed during cleanup.

We also note that the proposed mitigation measures are consistent with CEQA. Numerous cases have held that, where an agency has identified feasible mitigation measures and committed itself to the mitigation of potential significant impacts, the specific mitigation measures to be used may be selected after the project has been approved. CEQA makes clear that mitigation measures required to reduce each significant environmental impact identified in the EIR must be feasible. [Pub. Res. Code § 21100(b)(3); 14 Cal. Code Regs., § 15126.4.] However, timing may have an effect on which of the potential mitigation measures are appropriate and feasible. Regarding the timing of determining the appropriate mitigation measures, CEQA Guidelines Section 15126.4(a)(1)(B) states that "formulation of mitigation measures should not be deferred until some future time." [14 Cal. Code Regs., § 15126.4(a)(1)(B).] However, that same provision also states that for situations in which multiple

measures may be available to mitigate a particular type of harm, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." (*Id*.)

Case law supports agency decisions to approve projects that provide for "post-certification" identification of the specific control measures to be used. The primary case on this point, *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, explained that "for the kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process . . . the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval. Where future action to carry a project forward is contingent on devising means to satisfy such criteria, the agency should be able to rely on its commitment as evidence that significant impacts will in fact be mitigated." [*Sacramento, supra*, 229 Cal.App.3d 1028-30.]

In the instant case, every expert witness who testified agreed that, based on the site characterization undertaken to date, it is possible to conclude that the existing on-site contamination contains nothing extraordinary and that there are known and effective mitigation measures available to protect the public health and the environment. (See 5/22/06 RT 124, 127; 6/31/06 RT 13-15, 23-24.) As in the *Sacramento* case, the importance of the issue has been identified in this case and the particular mitigation measures that are available and must be analyzed going forward are identified. The record in this case establishes that the CEQA standard set forth in case law has been met for both the treatment of existing on-site contamination and for potential project-related impacts.

Further, the process set forth in the Conditions of Certification does not constitute inappropriate "piecemealing" as CARE contends.[46] There is no evidence in the

[46] The charge of "piecemealing" is generally leveled in cases where an entity has separately analyzed the environmental impacts of two aspects of what is, or should in effect be, the same project.

record to suggest that the work required under the proposed Conditions of Certification, or the possible mitigation measures themselves, will result in environmental impacts that have not been adequately assessed.

Finally, CARE's contention that the SFERP and the MUNI Metro East project should be considered a single project for purposes of CEQA has no basis. CEQA requires an EIR to analyze the cumulative impacts of the project at issue along with other closely related past, present and reasonably foreseeable future projects as part of its cumulative impacts analysis. [14 Cal. Code of Regs., §§15130, 15355.] However, CEQA does not require that multiple projects, which can proceed independently, be analyzed in one EIR. [*Sierra Club v. West Side Irrigation District et. al.*, supra, 128 Cal.App.4th 699.] In addition, "[p]reparation of an EIR need not be interminably delayed to include all potential comments or results of works in progress which might shed some additional light on the subject of the impact statement….". [*San Francisco Ecology Center* v*. City and County of San Francisco* (1975) 48 Cal.App.3d 584, 594.]

The evidence establishes that the SFERP and the MUNI Metro East facility are different and independent projects with different timelines[47] and with different purposes. The MUNI Metro East project involves the construction of a facility for the storage, maintenance, and operation of MUNI's new light rail vehicles. (Ex. 46, p. 4.5-6.). On the other hand, the SFERP is a power plant undertaken to ensure reliable electricity generation within the City and to facilitate the retirement of the Potrero Power Plant.

Intervenors also suggested during cross-examination that sampling at the project site was not thorough. However, Staff witness Dr. Greenberg explained the methods of sampling and concluded that the project site was a very well characterized site. (5/22/06 RT 128-129.) The witnesses for Staff and Applicant

[47] The environmental analysis of the MUNI Metro East facility was undertaken in 1998 as part of the Environmental Impact Report of the Third Street Light Rail Project, of which the MUNI Metro East facility is an integral component. (See Ex. 92, p. S-8.)

also adequately explained the sampling of surface soil conditions (5/22/06 RT 75-76; 120-121.)

In addition, intervenors raised concerns about the ability of the public to comment on future decisions involving site clean-up. CARE has asserted that the process identified in the proposed Conditions of Certification will not provide for adequate public participation. In fact, this concern is mistaken both as to prior and future project-related proceedings. The reality is that intervenors in this case have, to date, had an ample opportunity for public participation during the on-going CEC licensing proceedings, and in the future, intervenors will have three levels of opportunity for public participation; during the compliance phase at the CEC, before the Regional Board, and before the City. (5/22/06 RT 35-37.)

Regarding the CEC process, the opportunity for the public to participate began early on in this case and has been extensive throughout the process. Through the discovery period, after publication of the Preliminary Staff Assessment, and during numerous workshops intervenors were accorded opportunities to comment on substantive aspects of the case. The compliance phase of Commission proceedings includes the public filing of key documents on the CEC website. This provides notice to all members of the public. In addition, intervenors have the opportunity to file challenges to the work being done by the compliance Staff. (5/22/06 RT 40:2-4.)

Mr. Hill, of the SFRWQCB staff, explained the opportunities for public input available before the Regional Board. He testified the SFRWQCB tailors the public participation process to the level of interest and severity of contamination associated with a particular site. (5/31/06 RT 9-10.) Mr. Hill explained that opportunities for public participation include initial notices, thirty-day public comment periods for key reports, fact sheets, information reports, and responsiveness summaries if the public does submit comments. (*Id*.)

Finally, Applicant in this case is the City and County of San Francisco. As a public agency it must obtain approval for its actions in numerous public forums depending on the nature and degree of the activity in question. The City is subject to broad public access requirements. At each of these three levels of project review, it is clear that intervenors' concerns about inadequate future opportunities for public input are unfounded.

Intervenors also raised a concern that the assessment of the contamination on-site does not include an adequate cumulative impact analysis. However, Applicant's public health witness adequately addressed this matter as it relates to soil contaminants contributing to air quality and public health cumulative effects. (5/31/06 RT 96-99.) In addition, Staff witnesses addressed the potential for cumulative impacts from contaminated surface runoff at the site. They concluded that no cumulative effects of significance would occur. (5/22/06 RT 160-1.) Applicant's witness Franck also noted that the project will comply with the Port's Stormwater program which covers all projects on Port property. He testified that the Port stormwater program is designed to minimize the incremental effects from all of the individual projects going on at the Port, and that by participating in the program, he believes Applicant is mitigating for cumulative impacts. (5/22/06 RT 188-9.)

**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. The record also considers potential project-related cumulative impacts to water quality in the vicinity of the project.
2. Applicant has submitted a draft erosion control plan for the construction phase of the project which identifies best management practices to be used to control erosion and the discharge of storm water off-site. If implemented these measures will ensure no significant adverse impacts occur to area soils.

3. The SFERP will not directly intake water from, nor discharge effluent into, San Francisco Bay.

4. The Regional Water Quality Control Board will oversee the process addressing migration of existing soil and ground water contamination from the project site to San Francisco Bay.

5. Conditions contained in this Decision ensure that an ecological and human health risk assessment is performed, and that appropriate measures to adequately mitigate the potential migration of existing soil and groundwater contaminants from the project site to the Bay are identified and implemented.

6. Use of reclaimed water for cooling at the SFERP is consistent with the state water policies for the conservation of potable water supplies.

7. Expert testimony has unanimously established that contaminants on the project site have been well characterized and do not present unusual challenges for remediation.

8. The MOU between the staffs of the Commission and the Regional Board provides that Staff will collaborate with the Regional Board staff to make certain that health-protective performance standards required in this Decision are met when the Regional Board requires any site remediation activities.

9. Conditions of Certification contained in this Decision establish a mitigation process pursuant to California environmental statutes and CEQA case law.

10. The evidence of record identifies a reasonable range of potential mitigation measures and the efficacy of such measures to address site-specific conditions.

11. Conditions of Certification contained in this Decision establish appropriate, predetermined performance standards for mitigation measures.

12. The conditions in this Decision require numerous analyses, reports, and plans designed to provide comprehensive risk assessment and specific, feasible and appropriate mitigation measures required to protect public health and worker safety. Such analyses include:

    a. A Human Health Risk Assessment (HRA) to measure risks from exposure of persons to chemicals from any remediation activities and site construction.

    b. A Screening Level Ecological Risk Assessment (ERA) to determine the existence of any *existing* groundwater pollution and whether

such pollution may be reaching and affecting the San Francisco Bay.

c. A Site Cleanup Plan (SCP) which will indicate the remedial measures to be taken if site remediation is required.

d. A (Revised) Risk Management Plan (RMP) to govern soil and groundwater handling procedures.

e. A Site Management Plan (SMP) to govern specific long-term management of the site.

f. A Certification Report, required by the City's Maher Ordinance, it requires the results of the verification sampling analysis.

13. The performance standards contained in the Conditions of Certification will ensure that project construction and any required remediation will not result in a public health risk exceeding 1 in one million (cancer) and a 1.0 Hazard Index, and that workers will not be subject to greater than 1 in 100,000 (cancer) and 1.0 Hazard Index.

14. The Conditions of Certification, below, are adequate to ensure that construction and operation of the SFERP will not create significant adverse impacts to the matters addressed in the technical discipline of **Soils and Water Resources**.

We therefore conclude that the project will conform with all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of **Appendix A** of this Decision.

**CONDITIONS OF CERTIFICATION**

**SOIL & WATER-1** Prior to site mobilization, 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 SFERP 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 San Francisco Electric Reliability Project (SFERP) site, lay down area, all linear facilities, and 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 SFERP 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 sizes in acres; the hydraulic analysis to support the selection of Best Management Practices (BMPs) to divert off-site drainage around or through the SFERP site and laydown 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. Illustrate 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 SFERP (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. Treatment control BMPs utilized during construction should enable testing of stormwater runoff prior to discharge to San Francisco Bay. If runoff has unacceptable levels of contaminants including metals, TPH, or PAH constituents, the runoff must be treated to acceptable levels prior to discharge to the Bay, which could include multiple tank media filtration or other BMP's. The maintenance schedule should include post-construction maintenance of erosion control BMPs applied to disturbed areas following construction.
- 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 start of site mobilization, the project owner shall submit a copy of the plan to the City and County of San Francisco Public Works Department and San Francisco Public Utilities Commission for review and comment. No later than 60 days prior to start of site mobilization, the project owner shall submit the plan and City and County of San Francisco Public Works Department and San Francisco Public Utilities Commission comments to the CPM for review and approval. The CPM shall consider comments received from the City and County of San Francisco Public Works Department and San Francisco Public Utilities Commission. 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. 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 SFERP 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, Port of San Francisco, 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.

**SOIL & WATER-3** The project owner shall comply with the discharge limitations, pretreatment requirements, peak flow restrictions, dewatering discharges, payment of fees, and monitoring and reporting requirements as found in the San Francisco Public Works Code, Article 4.1 during discharge of potentially hazardous wastewater from de-watering of construction sites and discharge of water used for cleaning/hydrostatic testing of pipes or tanks, or during any other activity that generates wastewater, other than from routine commercial and/or industrial processes.

**Verification:** At least 30 days prior to the start of site mobilization, evidence of how the project owner complies with San Francisco Public Works Code, Article 4.1 shall be submitted to the CPM. The project owner shall submit copies of all correspondence between the project owner and SFPUC Bureau of Environmental Regulation and Management within 10 days of its receipt (when the project owner receives correspondence from the SFPUC) or its mailing (when the project owner sends correspondence to the SFPUC). The CPM shall be notified in writing of any analyzed sample that does not comply with the regulatory limits within 10 days of receiving sample results.

**SOIL & WATER-4** Prior to beginning any site mobilization activities, the project owner shall submit a Dual Plumbing Plan utilizing disinfected tertiary recycled water for plant service needs not requiring potable water to the San Francisco Department of Public Works for review and comment and to the CBO for review and approval. The Dual Plumbing Plan shall be prepared in accordance with San Francisco Public Works Code Article 22, and Title 22 of the State Water Code. This plan may be consolidated with the Engineer's Report for the Production, Distribution and Use of Recycled Water at the SFERP if practical, as specified in **SOIL & WATER-5**. The project owner shall comply with any reporting and inspection requirements set forth by the San Francisco Public Works Department to fulfill statutory requirements.

**Verification:** At least 30 days prior to the start of any site mobilization activities, the project owner shall submit the Dual Plumbing Plan to the San Francisco Department of Public Works and the CBO. 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.

**SOIL & WATER-5** Prior to beginning any site mobilization activities, the project owner shall submit an Engineer's Report for the Production, Distribution and Use of Recycled Water at the SFERP to the State

Department of Health Services and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for review and comment and to the CPM for review and approval. The Engineer's Report for the Production, Distribution and Use of Recycled Water at the SFERP shall be prepared in accordance with Titles 17 and 22 of the CA Code of Regulations, the Health and Safety Code, and the Water Code. The project owner shall comply with any reporting and inspection requirements set forth by the State Department of Health Services and SFRWQCB to fulfill statutory requirements.

**Verification:** At least 30 days prior to the start of any site mobilization activities, the project owner shall submit the Engineer's Report for the Production, Distribution and Use of Recycled Water at the SFERP to the State Department of Health Services, the SFBRWQCB, and the CPM. The project owner shall request letters from the State Department of Health Services and the SFBRWQCB with their comments on the Engineer's Report for the Production, Distribution and Use of Recycled Water at the SFERP. The project owner shall submit comments from the State Department of Health Services and any comments or conditions stipulated by the SFBRWQCB on the Engineer's Report or those related to the use and treatment of recycled water to the CPM for consideration in the review and approval of the Engineer's Report. The project owner shall revise the Engineer's Report per the CPM's instructions. The project owner shall provide the CPM a copy of any correspondence between themselves and State Department of Health Services, or the SFRWQCB within 10 days of receipt or submittal.

**SOIL & WATER-6** At least sixty (60) days prior to any soil disturbance or the beginning of site mobilization, whichever is later, the project owner shall prepare and submit the documents listed below to address contaminated soil and groundwater at the project site. This information shall be submitted to: the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for review and approval; the San Francisco Department of Public Health (SFDPH) for review and verification of compliance with Article 22A requirements; and the Compliance Project Manager (CPM) for review and approval that these documents meet the requirements of this Condition of Certification.

a) a Human Health Risk Assessment (HHRA),

b) an Ecological Risk Screening Assessment (ERSA) using site-specific groundwater concentrations compared to SFBRWQCB 2005 ESLs,

c) a site-specific Risk Management Plan (RMP) that will govern soil and groundwater handling procedures during soils movement and construction, and

d) a site-specific Site Cleanup Plan (SCP) that will present cleanup goals and remedial alternatives considered and selected to address human and ecological risks and reduce any significant risk identified to less than significant. The SCP, which is equivalent to a Removal Action Work Plan (RAW), will be developed in compliance with SFBRWQCB requirements and guidance and Article 22A requirements. This plan will also detail the program and schedule to implement the selected remedies. Either a waiver or a "no action" letter from the SFBRWQCB and the SFDPH may be submitted instead of an SCP if approved by the CPM.

The project owner shall provide the CPM with a copy of any and all correspondence between itself and the SFBRWQCB and the SFDPH within five (5) days of submittal to the agency or receipt from the agency.

**Verification:** At least sixty (60) days prior to any soils disturbance or the beginning of site mobilization, the project owner shall provide the documents listed above to the SFBRWQCB for review and approval, the SFDPH for review and verification, and the CPM for review and approval. At least ten (10) days prior to any soil disturbance or the start of site mobilization, the project owner shall submit approval letters from the SFBRWQCB and the SFDPH for each of the documents listed above to the CPM.

**Soil and Water-7** At least forty-five (45) days prior to the start of commercial operations, the project owner shall submit the documents listed below to address the long-term management of contaminated soil and groundwater at the project site to the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for review and approval, to the San Francisco Department of Public Health (SFDPH) for review and verification of compliance with Article 22A requirements, and to the Compliance Project Manager (CPM) for its approval that these documents meet the requirements of this Condition of Certification.

- *Site Management Plan* – The Site Management Plan (SMP), which shall be developed based on the findings of the HHRA, ERSA, and taking into account the SCP, will govern the long-term management of environmental conditions at the SFERP site relative to potentially ongoing mitigation programs (which could include treatment and /or monitoring programs, if required) and procedures to be followed should subsurface intrusion into chemically-impacted soil and groundwater be required in the future. The SMP will be recorded in an Environmental Restriction.

- *Certification Report* – The Certification Report shall be prepared in accordance with SFBRWQCB requirements and Article 22A. The

Certification Report shall contain the results of verification sampling analysis, if required by the SFBRWQCB and SFDPH.

**Verification:** At least 45 days prior to the start of commercial operations, the project owner shall submit the documents listed above to the SFBRWQCB for review and approval, to the SFDPH for review and verification of compliance with Article 22A requirements, and to the CPM for its approval that these documents meet the requirements of this Condition of Certification. The project owner shall provide the CPM with a copy of any correspondences to or from the regulatory agencies within 10 days of submittal. At least 10 days prior to the start of commercial operation, the project owner shall submit approval letters from the SFBRWQCB and SFDPH for the SMP to the CPM. In addition, at least 30 days prior to the start of commercial operations, and after approval of the SMP, the project owner shall submit to the CPM documentation that the SMP has been recorded as part of the Environmental Restrictions.

**SOIL & WATER-8** The project owner shall comply with the discharge limitations, pretreatment requirements, peak flow restrictions, dewatering discharges, payment of fees, and monitoring and reporting requirements as found in the San Francisco Public Works Code, Article 4.1 and in accordance with the discharge requirements specified in San Francisco Department of Public Works Order No. 158170 during commissioning and commercial operation.

**Verification:** At least 30 days prior to the start of commissioning activities, evidence of how the project owner complies with the San Francisco Public Works Code, Article 4.1 shall be submitted to the CPM. The project owner shall submit copies of all correspondence between the project owner and SFPUC Bureau of Environmental Regulation and Management within 10 days of its receipt (when the project owner receives correspondence from the SFPUC) or its mailing (when the project owner sends correspondence to the SFPUC). The CPM shall be notified in writing of any analyzed wastewater sample that does not comply with the regulatory limits of Article 4.1 within 10 days of receiving sample results. The annual compliance report shall provide evidence of how the project owner has complied with San Francisco Public Works Code, Article 4.1 and provide a summary of the wastewater sampling results.

**SOIL & WATER-9** The project owner shall comply with the requirements of the Port of San Francisco Municipal National Pollutant Discharge Elimination System (NPDES) Permit. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the operation of the SFERP (operational SWPPP).

**Verification:** The project owner shall submit copies to the CPM of the operational SWPPP for the entire SFERP site prior to commercial operation for review and approval, as well as all correspondence between the project owner and the Port of San Francisco, the City and County of San Francisco Public Works Department, and the City Bureau of Environmental Regulation concerning

the Port's Municipal NPDES Permit within 10 days of its receipt (when the project owner receives correspondence from the Port) or within 10 days of its mailing (when the project owner sends correspondence to the Port). This information shall include a copy of the Notice of Intent and Notice of Termination.

**SOIL & WATER-10** The project owner shall use disinfected tertiary recycled water supplied from the on-site treatment plant as its primary water supply source for cooling, process, and other approved non-potable uses. Prior to the use of a water source during commercial operation by the San Francisco Electric Reliability Project (SFERP), the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volumes of water supplied to the SFERP from each water source. Those metering devices shall be operational for the life of the project.

The project owner shall prepare an annual Water Use Summary, which will include the monthly range and monthly average of daily non-potable water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. Potable water use on-site shall be recorded on a monthly basis. 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 60 days prior to use commercial operation of the SFERP, the project owner shall submit to the CPM conclusive proof that metering devices have been installed and are operational on the non-potable and potable water supply and distribution system. 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. The summary report shall distinguish between recorded water use of recycled and potable water. Included in the summary report of water use, the project owner shall submit copies of meter records from the City of San Francisco documenting the quantities of tertiary treated recycled water provided (in gallons per day) by the SEWPCP. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report.

**SOIL & WATER-11** The SFERP shall not use more than 50 acre-feet of potable water during any consecutive three-year period as an emergency

backup to disruptions in the production or distribution of the recycled water from the tertiary water treatment facility. The project owner will monitor the use of emergency backup water and report total usage to the CPM immediately after any occurrence when potable water was used. During severe droughts, the project owner shall work with appropriate local agencies to reduce energy demand during planned and unplanned outages in order to reduce the need for potable water.

**Verification:** At least 30 days prior to any planned interruption the project owner will notify the CPM in writing of the potential use of potable backup water and with an estimate of the volume required to continue normal power generation. During any unplanned outages the project owner will notify the CPM as soon as it is realized that emergency backup water supply will be necessary. The project owner will document total usage for each planned and unplanned service interruption where potable water was used as an emergency backup. The project owner will report all disruptions to the recycled water tertiary treatment process, the associated volume of potable water used, and the total annual use for the year, and the two years prior, in the annual compliance report. The annual report shall report on the feasibility of alternative water supplies in lieu of potable water for emergency backup. The annual report shall discuss any energy conservation measures taken during planned outages.

**SOIL & WATER-12** In the event the project owner is notified by the Bay Conservation and Development Commission (BCDC) or the Port of San Francisco (Port) that a proposed segment of the San Francisco Bay Trail or BCDC-required shoreline access is to be located across the outfall of the SFERP stormwater swale, the project owner shall design and construct a conveyance, such as a culvert or bridge, to accommodate continuation of the San Francisco Bay Trail or BCDC-required shoreline access across the outfall without impeding stormwater flow from the SFERP site. The conveyance shall be consistent with all applicable requirements of the BCDC, Port, and the San Francisco Bay Regional Water Quality Control Board (RWQCB).

**Verification:** Within 90 days of notification by BCDC or the Port of San Francisco that a San Francisco Bay Trail segment or other form of shoreline access will cross the outfall from the SFERP stormwater swale, the project owner shall submit a proposed plan for a conveyance to accommodate continuation of the San Francisco Bay Trail or BCDC-required shoreline access across the outfall without impeding stormwater flow from the SFERP site. The plan shall be provided to the BCDC, Port and RWQCB for review and comment and to the CPM for review and approval. Upon approval of the plan, the project owner shall commence design and construction of the conveyance on a schedule approved by the BCDC and the Port.

**Soil and Water-13** Collectively, the implementation of the Site Cleanup Plan (SCP), the Risk Management Plan (RMP), and Site Management Plan (SMP) shall ensure that, during and after construction, the risk to off-

site receptors shall not exceed $1x10^{-6}$, the hazard index shall not exceed 1.0, and the risk to site construction and operations workers during site activities shall not exceed $1x10^{-5}$ and a hazard index of 1.0.

**Verification:** At least 45 days prior to the start of commercial operation, the project owner shall submit a copy of the above-specified documentation to the CPM for approval that this Condition of Certification has been met.

# 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.[48]

### SUMMARY AND DISCUSSION OF THE EVIDENCE

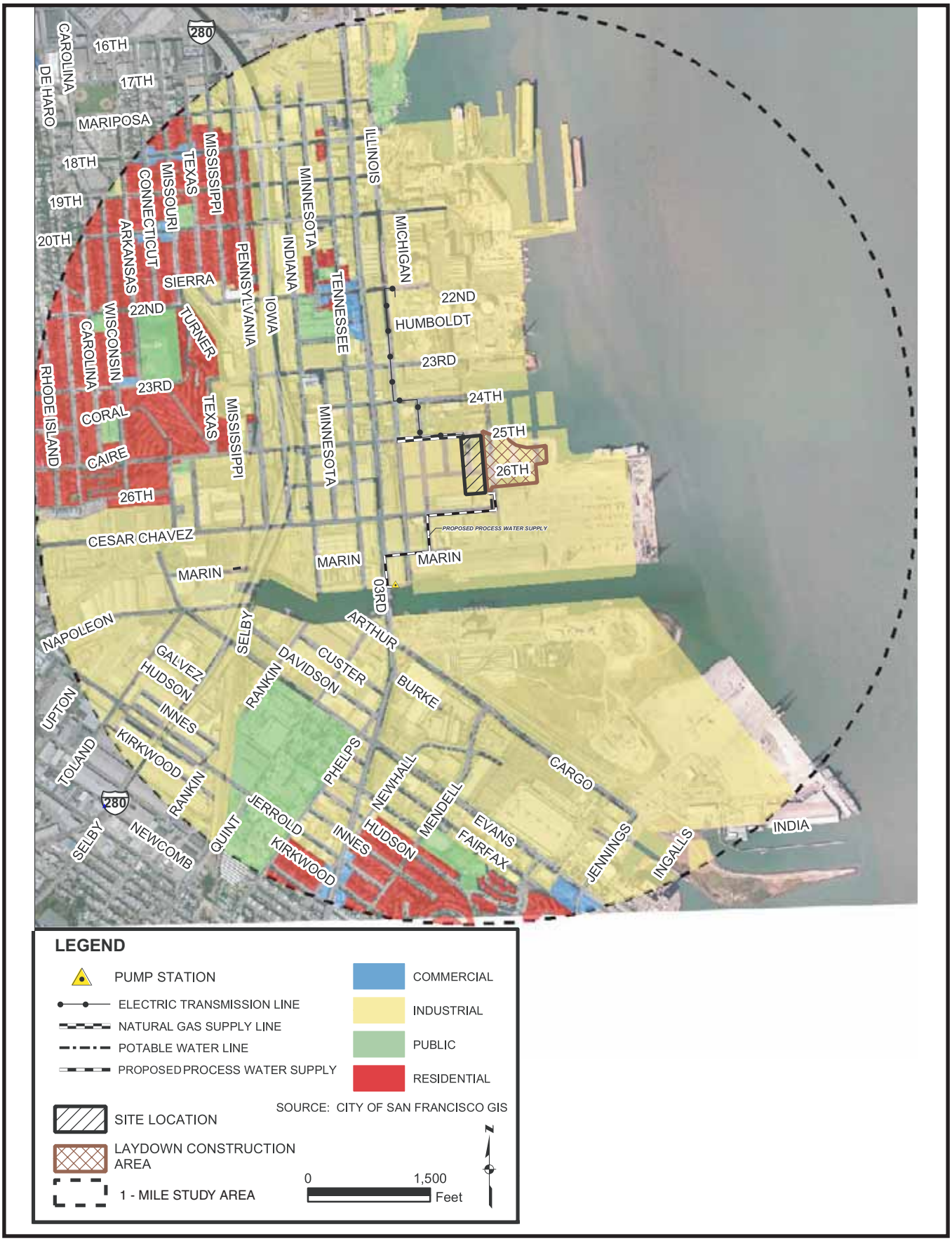
The SFERP site consists of approximately four acres and is situated within Potrero Point along the eastern shoreline of the San Francisco Bay between Central Basin in the north and Islais Creek Channel in the south. This area of San Francisco is referred to as the Central Waterfront. The site is bounded by Illinois Street and San Francisco Bay, between 25th and 26th Streets. Site access is by way of 25th Street, approximately 900 feet east of Illinois Street. (**See Land Use Figure 1**.)

Industrial, commercial, and heavy manufacturing uses predominate in the immediate site vicinity. Pier 70 (a Port of San Francisco property) is approximately one mile north of the SFERP site. Current uses at Pier 70 include general industry within an M-2 Heavy Industry zone. The existing Potrero Power Plant is located at Illinois Street between 22nd and 23rd Streets.

[48] Although it reserved time for cross-examination, intervenor CARE did not appear or otherwise participate at the evidentiary hearing on this topic.

**LAND USE - FIGURE 1**

San Francisco Electric Reliability Project Supplement A - Existing Land Use Designations in the Study Area

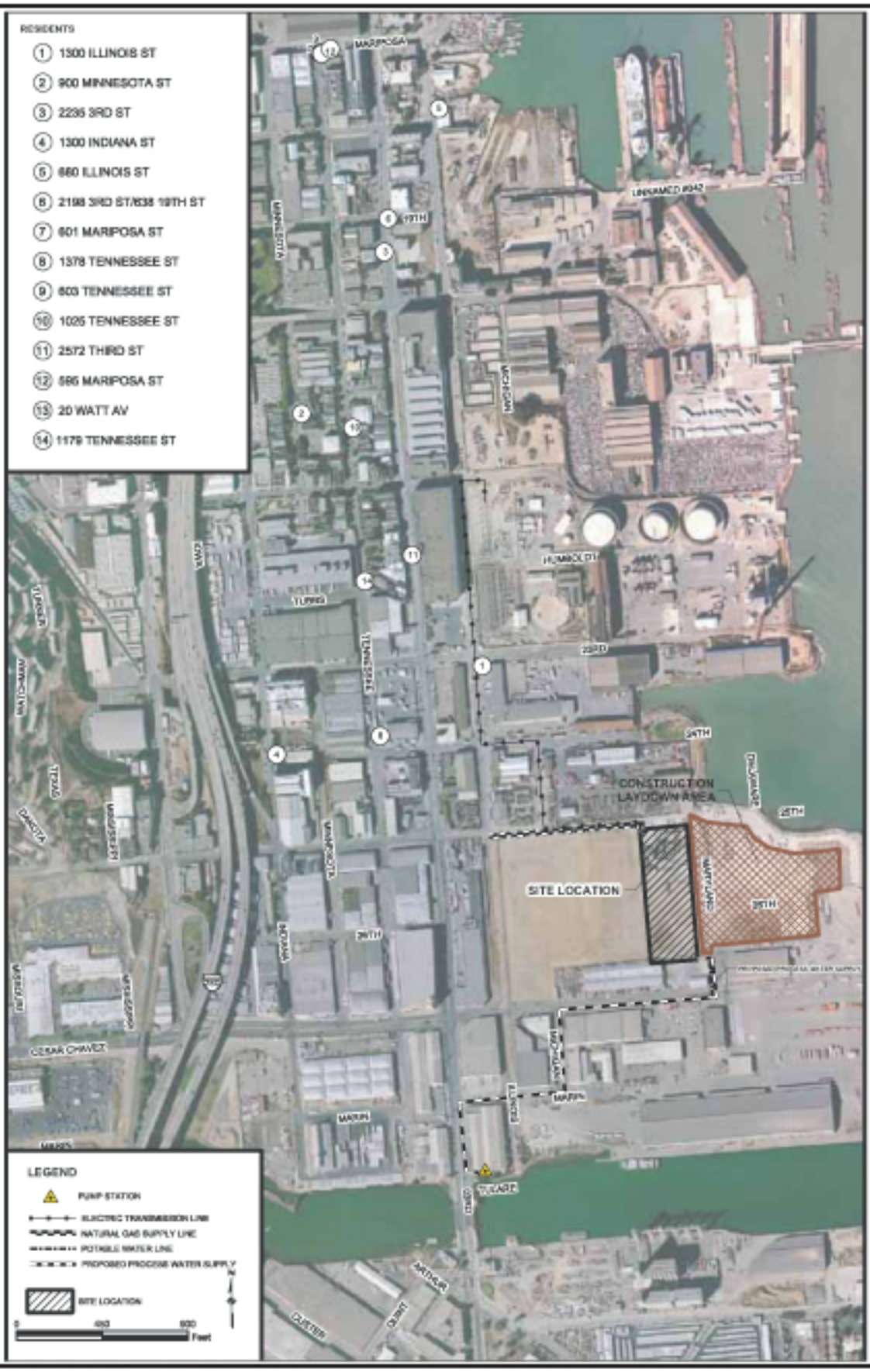



**CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, FEBRUARY 2006**

SOURCE: Exhibit 15

## LAND USE - FIGURE 2

San Francisco Electric Reliability Project Supplement A - Locations of Proposed or Recently Approved Housing




CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, FEBRUARY 2006

SOURCE: Exhibit 15

The generation unit will be erected on a site owned by the City/County of San Francisco (CCSF). There are no permanent structures on the site, although a temporary concrete batch plant occupies the northern portion. The area immediately east of the project site, within the proposed staging area, is currently used as a trailer storage facility for a trucking operation.

The closest residentially zoned areas occur south and west of the SFERP. The Bayview-Hunters Point neighborhood is less than one mile south of the site at its nearest point. To the west, closer residential areas occur on Potrero Hill, along Third Street, and in the small community known as Dogpatch on Third Street near 22nd Street. This community is the nearest (approximately 0.75 miles to the northwest) residentially zoned area. (Ex. 46, pp. 4.5-2 to 4.5-3.)

Future development plans would continue the existing commercial and industrial uses, and also accommodate residential development in the project vicinity. (4/27/06 RT 150-51, 156-57; see **LAND USE FIGURE 2**.) For example, approximately one mile north of the SFERP site, at the Port of San Francisco's Pier 70, plans call for mixed uses in the future, including approximately 610,000 square feet of commercial office and/or research and development space; 100,000 feet of retail/commercial space; and 240,000 square feet of public access and recreational uses. There is no set schedule for this development.

To the west, the San Francisco Municipal Railway (MUNI) construction is underway at the Third Street Light Rail Extension. Station stops along the route in the vicinity of Third Street are expected to encourage commercial and, perhaps, residential development. In support of the new transit line, MUNI is constructing a new Metro East Operating and Maintenance Facility which will be built on approximately 13-17 acres at 25th and Illinois Streets for storing, maintaining, and dispatching light rail vehicles. (Ex. 46, p. 4.5-4.)

The Central Waterfront area has also experienced an increase in residential units in previously non-residential areas through the development of live/work units.

As a result, the residential population in the vicinity of the SFERP has increased. Applications for about 400 housing units have recently been approved or are pending approval in the Central Waterfront area. (Ex. 46, p. 4.5-3.) The evidence also indicates that a number of projects are proposed for development in the vicinity of the SFERP which, in combination, could cause cumulative impacts. These are listed in the documentary evidence of record (4/27/06 RT 158–60; Ex. 46, pp. 4.5-6 to 4.5-8) and are characterized as reasonably foreseeable land use projects by Staff's expert witness. (4/27/06 RT 161: 2-5.)

The evidence uniformly indicates that the SFERP represents further development of a site already committed to industrial use. There is no evidence of record which indicates, much less establishes, that the power plant project, its laydown area, or its linear facilities would either introduce a new industrial use into a non-industrial area, would preclude a planned use, conflict with an existing use, or physically divide an established community (Exs. 3, 9, 15, 16, 40, 46, pp. 4.5-4 to 4.5-5.) Similarly, the evidence of record uniformly establishes that the SFERP will comply with all local LORS,[49] a fact that Staff verified with local officials. (4/27/06 RT 153-155.) The Conditions of Certification further ensure that the project will comply with CCSF's Zoning Code.

The evidence of record establishes that the SFERP is consistent with CCSF's long-range planning policies. Furthermore, as discussed in numerous other sections of this Decision, the evidence of record persuasively establishes that the SFERP would not make a significant contribution to regional environmental impacts related to new development or growth. The record contains no credible evidence that the project would create or contribute to adverse cumulative land use impacts. (Ex. 46, p. 4.5-8.)

[49] According to the San Francisco Bay Conservation and Development Commission staff (BCDC), a small portion of the project's drainage facilities lie within BCDC's jurisdiction. BCDC has thus requested that a future conveyance, such as a culvert or bridge, be required to accommodate further expansion of the San Francisco Bay Trail. (4/27/06 RT 156; Ex. 46, p. 4.5-9 to 4.5-10.) This is discussed further in the **SOIL** and **WATER RESOURCES** portion.)

## FINDINGS AND CONCLUSIONS

Based upon the persuasive weight of the evidence of record, we make the following findings and reach the following conclusions:

1. The SFERP is located in an industrially zoned area and is a compatible use within that area.
2. The project is consistent with the City of San Francisco's existing land use designation, land use plans, and zoning.
3. The project would not disrupt or divide the physical arrangement of an established community.
4. The project would not preclude or unduly restrict existing or planned land uses, either industrial or residential.
5. The evidence of record considers the SFERP in conjunction with a number of proposed development projects in the vicinity.
6. The evidence of record persuasively establishes that the SFERP would not make a significant contribution to regional impacts related to new development and growth.
7. The Conditions of Certification ensure that the project will comply with all applicable local land use requirements.

We therefore conclude that the SFERP 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 minimum design and performance standards for the Heavy Industrial Zone District set forth in the City /County of San Francisco Zoning Ordinance.

**Verification:** At least 30 days prior to the start of construction, the project owner shall submit written documentation, including evidence of review by the City/County of San Francisco, that the project conforms with the minimum design and performance standards of the Zoning Ordinance.

**LAND-2** The project owner shall comply with the parking standards established by the City/County of San Francisco's Zoning Ordinance (Article 1.2 of the City Planning Code).

**Verification:** At least 30 days prior to start of construction, the project owner shall submit to the Compliance Project Manager (CPM) written documentation, including evidence of review by the City and County of San Francisco, that the project conforms to all applicable parking standards.

**LAND-3** The project owner shall ensure that any signs erected (either permanent or for construction only) comply with the outdoor advertising regulations established by the City/County of San Francisco's zoning ordinance (Article 6 of the City Sign Ordinance).

**Verification:** At least 30 days prior to start of construction, the project owner shall submit to the CPM written documentation, including evidence of review by the City/County of San Francisco, that all erected signs will conform to the zoning ordinance.

## 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. (Exs. 3, 15, 16, 39, 40, 46; 5/1/06 RT 9-10.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located between Cesar Chavez (formerly called Army) and 25th Streets, just east of Third Street and approximately 0.38 miles east of State Route (SR) 280, and three miles south of downtown San Francisco. The facility will be located immediately east of the proposed MUNI Metro East Light Rail Vehicle Maintenance and Operations Facility. The San Francisco Bay shoreline lies to the east.

Transportation routes in the project area include freeways, highways, and local roadways. Plant construction and operation traffic will use the existing area roadways. The project's construction and operation traffic routes connecting to highways are located entirely within the boundaries of the City and County of San Francisco. The key roads and highways in the vicinity of the SFERP include SR-280, US Highway 101, Third Street, Cesar Chavez Street, Pennsylvania Avenue, 23rd Street, 25TH Street, and Illinois Street. There are also MUNI bus routes and bicycle lanes in the vicinity. (Ex. 46, pp. 4.10–4 to 4.10-5; see **TRAFFIC AND TRANSPORTATION FIGURE 1**.)

## TRAFFIC AND TRANSPORTATION - FIGURE 1

San Francisco Electric Reliability Project Supplement A -
Local Transportation Network near the Project Site


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, FEBRUARY 2006
SOURCE: Exhibit 15

ON

The Levels of Service (LOS)[50] for street intersections in the vicinity are shown in **Table 1**, below.

**TRAFFIC AND TRANSPORTATION Table 1**
**Level of Service Summary for Existing, Baseline 2007, and Baseline 2007 Plus Project**
**For Selected Intersections**

| Intersection | Peak Hour | Existing (2000) LOS | Baseline (2007) LOS | **Baseline (2007) Plus Project During Construction** LOS |
|---|---|---|---|---|
| Third Street/16th Street | Morning | B | C | C |
| | Evening | B | B | B |
| Third Street/20th Street | Morning | A | A | A |
| | Evening | A | A | A |
| Third Street/25th Street | Morning | B | A | A |
| | Evening | B | B | B |
| Third Street/Cesar Chavez Street | Morning | C | D | D |
| | Evening | C | D | D |
| Third Street/Evans Avenue | Morning | D | D | D |
| | Evening | C | D | D |
| Evans Avenue/Cesar Chavez Street | Morning | B | B | B |
| | Evening | B | C | C |

Source: Ex. 46, pp. 4.10-6 and 4.10-7.

As shown, the SFERP will not cause degradation in the LOS on area streets. This conclusion is based upon the evidence presented below.

[50] 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.

1. Construction

The Applicant anticipates that construction will take twelve months. Based on regional demographics, the construction workers will probably come from the City of San Francisco (25 percent), Marin County (15 percent), East Bay area (40 percent), and San Mateo County (20 percent). They will park at the laydown site on 25th Street adjacent to the project site. Some workers may be able to use public transit (i.e. bus, light rail).

To reach the laydown site, workers traveling from Marin County will likely exit onto Cesar Chavez Street, proceeding to Third or Illinois Streets. Workers from the East Bay would use I-80 to US 101, and exit on Cesar Chavez Street proceeding to Third or Illinois Streets. The traffic would then proceed north for two blocks, turning right on 25th Street to reach the laydown site. Workers from within the City will use 16th Street and Third Street, while workers coming from San Mateo County will use SR-280, exit at Evans Avenue, and proceed to Third Street. The traffic would then proceed north on Third Street to 25th Street.

The average number of construction workers will be approximately 161, while the peak workforce will consist of approximately 264 workers (construction month six), including 250 workers at the plant site and eight workers for water pipeline construction. All plant construction workers will park at the lay-down area on 25th Street, while the pipeline construction crew will park adjacent to the pipeline construction sites. (Ex. 46, pp. 4.10-8 to 4.10-9.)

Using the peak number of workers (264) and an Average Automobile Occupancy (AAO) rate of 1.0, approximately 528 one-way daily worker trips will occur. The evidence indicates that SFERP-related traffic will not cause a deterioration of LOS to the 2007 baseline for any intersections in the local area. (Ex. 46, p. 4.10-8.)

Heavy equipment will be used throughout the construction period. This includes trenching and earthmoving equipment, forklifts, cranes, cement mixers and drilling equipment. Construction is expected to require 40 truck trips per day. Condition of Certification **TRANS-1** will ensure that these trips occur during off-peak traffic hours. Thus, truck traffic will be minimized during the morning and evening commute periods. (Ex. 46, pp. 4.10-8 to 4.10-9.)

Deliveries of hazardous materials during construction will be conducted in accordance with federal and state laws. The preferred route involves use of the SR 280 off-and-on ramps and Cesar Chavez, Third, and 25th Streets since this route is relatively short and goes through a commercial/industrial area with no residences, schools, hospitals, or other sensitive areas.[51] (Ex. 46, p. 4.10-10.)

Transportation of equipment which exceeds the load size and limits of certain roadways will require special permits from Caltrans. Conditions of Certification **TRANS-2** and **TRANS-3** require the project owner to secure appropriate permits from Caltrans and/or CCSF for oversized loads, encroachment, and activities within road rights-of-way. Condition of Certification **TRANS-6** requires a road mitigation plan for any roads damaged by oversize or overweight vehicles.

Construction of the water, gas, and transmission lines affects 25th, Illinois, Maryland, Cesar Chavez, Michigan, Main, Marin, Third, and Tulare streets. Pipeline and transmission line construction personnel will park adjacent to their work sites. Water lines, gas pipeline, and transmission line construction will require excavation in local roadways and could temporarily interfere with vehicle and pedestrian use. Condition of Certification **TRANS-1** requires mitigation of any linear construction impact by ensuring that the construction traffic plan addresses minimizing traffic disruption and maintaining access to residential and commercial properties. (Ex. 46, pp. 4.10-10 to 4.10-11.) This will ensure that the LOS does not deteriorate.

[51] Potential risks associated with hazardous materials are discussed in the **HAZARDOUS MATERIALS MANAGEMENT** section, *supra*.

The evidence of record also contains a discussion of four projects whose construction periods could coincide with that of the SFERP:

- Segment C (23rd Street to Cesar Chavez Street) of the MUNI Light Rail Transit extension along Third Street;
- A proposed 71 unit residential condominium and retail project at 1275 and 1301 Indiana Street; this project would be a 183,000 sq. ft. planned unit development;
- A proposed 141 residential unit and retail (restaurant and warehouse) project at 2235 3rd Street (20th and 3rd/Illinois Streets); this project would be a 167,500 sq. ft. planned unit development; and
- A bridge across the Islais Creek channel along the line of Illinois Street being constructed by the Port of San Francisco.

The evidence further indicates that MUNI expects to complete construction of Segment C prior to the commencement of construction on the SFERP. Similarly, construction of the Bridge project should also be completed. The construction schedule for the 71 unit and the 141 unit developments are speculative at present. Based upon the available information, it thus appears that construction of the SFERP will not add to adverse cumulative transportation impacts. (5/1/06 RT 14 – 16; Ex. 46, pp. 4.10-13 to 4.10-14.)

2. Operation

During project operations, the 11 full-time employees will generate a maximum of 22 one-way trips daily. Other project-related trips (such as deliveries and visitors) will generate about 60 one-way trips. The evidence indicates that this is a minor addition to the normal traffic on the surrounding streets. (Ex. 46, p. 4.10-11.)

Condition **TRANS-4** requires that the transportation of hazardous materials to and from the site be conducted in accordance with all applicable LORS. 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.[52] (Ex.46, pp.4.10-11 to 4.10-12.)

A licensed hazardous waste transporter will haul any hazardous project waste from the SFERP site to one of three Class 1 hazardous waste landfills in Southern California. Waste haulers will access the project site by traveling on Illinois Street to 23rd Street. Specific inbound and outbound hazardous materials and waste routes will be the same as for construction trucks. These routes do not involve truck travel through sensitive residential neighborhood areas. Hazardous wastes will be transported on SR-280 and U.S.101 south to I-5 or SR-99 for permanent disposal at a Class 1 hazardous waste facility. (Ex. 46, p. 4.10-12.) Overall, the evidence of record contains no credible assertion that the SFERP 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. The additional traffic associated with construction and operation of the SFERP project will not have an adverse effect on existing levels of service for roads in the project vicinity.
2. Development and implementation of a construction traffic control program will offset any temporary, short-term increases in congestion resulting from construction of the project and its linear facilities.

[52] See also, **HAZARDOUS MATERIALS MANAGEMENT** section, *supra*.

3. The construction of the project's linear alignments will not significantly effect traffic due to the temporary nature of the construction period and the changing locations for construction activities.
4. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws.
5. The preferred route for deliveries of hazardous materials involves use of the SR 280 off- and on-ramps, and Cesar Chavez, Third, and 25th Streets.
6. Implementation of the Conditions of Certification, below, ensure that both construction and operation of the project will comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision.

The Commission, therefore, concludes that construction and operation of the project, as mitigated 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**

**TRANS-1** The project owner shall develop a construction traffic control plan that limits peak hour construction-period truck and commute traffic in coordination with the City and County of San Francisco (CCSF) Public Works Department. The project owner shall also consult with Caltrans regarding any freeway access and on/off-ramps, the San Francisco Unified School District regarding school bus routes, and the CCSF staff dealing with traffic regulation enforcement. Specifically, the overall traffic control plan shall include the following:

- Require the primary contractor and major subcontractors to develop and implement a construction employee carpool program;
- Through worker education and shift scheduling, maximize worker commute trips during off-peak hours (off-peak hours are (1) before 7:00 AM; (2) between 9:00 AM and 4:00 PM; and (3) after 6:00 PM or other hours as agreed to by the CPM;

- Schedule heavy vehicle equipment, building material, and hazardous materials and equipment deliveries to the site and adjacent lay-down area to occur during off-peak hours; and
- Coordinate with CCSF and other applicable agency staff to mitigate any potential adverse traffic impacts from other proposed construction projects that may occur during the SFERP construction phase (i.e. Illinois Street Bridge).

The construction traffic control plan shall also address the following issues to control construction traffic for linear facilities:

- Water and gas pipeline construction affecting local roads should take place outside the peak traffic periods to avoid traffic flow disruptions, or other hours as agreed to by the CPM;
- Signing, lighting, and traffic control device placement;
- Temporary travel lane closures and potential need for flaggers;
- Maintaining access to adjacent residential and commercial properties; and
- Emergency access.

**Verification:** At least 60 days prior to start of site mobilization, the project owner shall provide to the CCSF and Department of Parking and Transportation, the Public Works Department, and the California Highway Patrol for review and comment, and to the CPM for review and approval, a copy of the construction traffic control plan. The plan must document consultation with Caltrans and the San Francisco Unified School District.

**TRANS-2** The project owner shall comply with Caltrans and other affected jurisdictions' limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

**Verification:** In the Monthly Compliance Reports to the CPM, the project owner shall submit copies of any oversize and overweight transportation permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in the on-site compliance file for at least six months after the start of commercial operation.

**TRANS-3** The project owner shall ensure compliance with Caltrans and other relevant jurisdiction's limitations for encroachment into public rights-of-way, and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

**Verification:** In the Monthly Compliance Reports to the CPM, the project owner shall submit copies of any encroachment permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in the on-site compliance file for at least six months after the start of commercial operation.

**TRANS-4** The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of all hazardous materials, and that all federal and state regulations for the transport of hazardous materials are observed.

**Verification:** In the Monthly Compliance Reports to the CPM, the project owner shall provide copies of all permits and licenses acquired by the project owner concerning the transport of hazardous materials during that period. In addition, the project owner shall retain copies of these permits and licenses in the on-site compliance file for at least six months during construction and operation of the power plant.

**TRANS-5** Prior to the construction of the power plant and all related facilities, the project owner shall develop a parking and staging plan for all phases of project construction to ensure that all project related parking occurs on-site.

**Verification:** At least 30 days prior to the start of site mobilization, the project owner shall submit the plan to the CCSF Public Works Department for review and comment, and to the CPM for review and approval. The material submitted to the CPM shall include documentation of the Public Works Department's review and comments. Monthly Compliance Reports submitted to the CPM shall describe the project owner's actions pursuant to the parking and staging plan.

**TRANS-6** Prior to the beginning of site mobilization activities, the project owner shall prepare a mitigation plan for any identified street that has the potential to be damaged by oversize or overweight vehicles and underground utility construction, and shall submit the plan to the CCSF Public Works Department and the CPM. The intent of this plan is to ensure that any streets that has the potential to be damaged by oversize or overweight vehicles serving the project and underground utility construction will be repaired and reconstructed to original or as near original condition as possible. This plan shall include:

- Documentation of the pre-construction condition of the surface streets in the vicinity of the site and those along the underground utility routes. Prior to the start of site mobilization, the project owner shall provide to the CPM photographs or videotape of the affected streets.

- Documentation of any portions of streets that may be inadequate to accommodate oversize or large construction vehicles, and identify necessary remediation measures;
- Provide for appropriate bonding or other assurances to ensure that any damage to a street due to construction activity will be remedied by the project owner;
- Relocation of utility poles, if necessary, to insure that adequate clear zones are established along the property frontage; and
- Reconstruction of portions of streets that are damaged by project construction including the use of oversize or overweight construction vehicles, and the installation of underground utilities.

**Verification:** At least 90 days prior to the start of site mobilization, the project owner shall submit a mitigation plan focused on restoring identified streets to their pre-project condition to the CCSF Public Works Department for review and comment, and to the CPM for review and approval.

At least 90 days prior to the start of any underground utility construction, the project owner shall submit a separate street damage mitigation plan to the CCSF Public Works Department for review and comment and to the CPM for review and approval.

Within 90 days following the completion of construction, the project owner shall provide photo/videotape documentation to the CCSF Public Works Department, and the CPM that the damaged streets have been restored to their pre-project condition.

## C. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings. (Cal. Code of Regs., tit. 14 § 15382, Appendix G.)

The evidence presented on this topic (Exs. 3, 7, 15, 16, 19, 39, 46, pp. 4.12-1 to 4.12-30) was undisputed. (4/27/06 RT 71-72.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The SFERP will be constructed in an industrial setting near the City of San Francisco's eastern waterfront. The site has a concrete batch plant on its north end that will be removed prior to development. The remainder of the site is vacant.

Within the project vicinity, foreground to middle-ground views (generally one mile or less) of the project site are primarily limited to the upper elevations of the surrounding terrain, or to the upper floors of multi-storied buildings. Views toward the site are either open or disrupted by the roof tops of structures.

The surrounding view to the north of the site is the Central Basin, an industrial area. The view consists of many masonry and concrete type structures. To the south are the Port of San Francisco North Container Terminal, the India Basin industrial/business park area, and Hunters Point, a prominent ridge and residential neighborhood. The existing Hunters Point Power Plant is visually prominent in this area. To the east of the project site is the Port of San Francisco's truck terminal and beyond it the open panoramic waterscape of San

Francisco Bay. To the west of the project site, along Third Street, are masonry and corrugated steel industrial type rectangular structures and scattered residential units. West of Third Street (west of Interstate-280), single-family and multi-family residential units become more prominent, with dense residential areas at higher elevations on Potrero Hill. (Ex. 46, p. 4.12-3.)

The most visible components of the proposed power plant include three 85-foot tall exhaust stacks, three 32-foot tall (including the intake air filters) gas combustion turbine generators (CTGs), a 32-foot tall recycled water treatment building, two 33-foot tall water storage tanks, and a 45-foot tall duplex chiller/coolant tower package.

No landscaping is proposed as part of the project. The exteriors of all project elements will be treated with a neutral gray finish to optimize visual integration with the surrounding environment.

The facility's perimeter fence will be an eight foot high wrought iron security type with curved pointed tips. This type of security fence is designed with limited horizontal rails to discourage climbing. It will be consistent with the proposed perimeter fence approved for the San Francisco Metro East Light Rail Maintenance and Operations Facility on the adjoining 13 acres to the west of the project site. (Ex. 46, 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. 46, pp. 4.12-23 to 4.12-26.)

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 of Regs. Appendices G and I.)

Scenic Vistas. The project is within the boundary of the City of San Francisco's Central Waterfront Area Plan. The Plan does not identify any scenic vistas within the project's viewshed.

The nearest public access to an unobstructed view of San Francisco Bay in the vicinity of the project is the Warm Water Cove Park. This public park is north of the site. The Bay is east of the park. The SFERP would not visually obstruct views of San Francisco Bay from the park.

Potrero Hill is considered a vista point. Views from it would be slightly affected. The additional visual contrast and view blockage caused by new power plant structures is expected to be low.

The new power plant would appear small when compared to other features in the view, and in particular the Metro East Light Rail Maintenance and Operations Facility with its approximate 40-foot tall, 180,000 square foot main building. The evidence shows that the proposed project would not have a substantial adverse effect on a scenic vista, and would thus cause a less than significant visual effect. (Ex. 46, p. 4.12-5.)

Scenic Resources. Warm Water Cove Park is surrounded on three sides by industrial structures. Views toward the project site are disrupted or blocked by a graffiti-covered plywood fence and a 30 to 40 foot tall old warehouse. From the Park, a small portion of the top of the SFERP three 85-foot tall exhaust stacks will be visible above the existing warehouse. These stacks will be about 600 feet south of the warehouse. The top portion of the stacks will introduce prominent linear, regular geometric forms with strong vertical lines to the southern view from the park. The evidence shows that potential view of the stacks would generate a less than significant visual impact in the context of the existing industrial character of the area and the on-going heavy equipment storage bordering the park.

Views of SFERP structures from the Pier 70 or Dogpatch historic districts are substantially disrupted by large industrial buildings in the area. The proposed project will thus cause low visual contrast and low view disruption when viewed from the historic districts. (Ex. 46. p. 4.12-6.)

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.

The SFERP site is surrounded on all sides by industrial activity and structures. There are a few residences with partial views of the site within ½-mile. Residences on the east side of Potrero Hill have nearly full views of the site from greater than ½-mile away. These residences have elevated panoramic views of the industrial area and San Francisco Bay, and viewers are accustomed to seeing industrial uses on a regular basis.

During the approximate 12-month long construction period, views of tall cranes and other heavy equipment, materials, vehicles, etc. will occur. The project will, however, appear quite small in the existing wide field of view, and the construction implements will appear as subordinate within the existing urban/industrial features of the viewshed and the panoramic landscape of San Francisco Bay. Construction of the project's linear features (transmission line and gas and water pipelines) will cause a temporary visual disruption along several public streets. These surface areas will, however, be cleaned up, repaired, and restored to pre-construction condition by the project owner. (See Condition of Certification **VIS-2**. Similarly, the laydown area will be restored upon project completion. (Ex. 46, p. 4.12.-8.)

Residents, pedestrians, and motorists will have partial foreground and middle ground views of the SFERP. After completion of the MUNI maintenance and operations facility, however, the visible aspects of the power plant structure will consist only of the top portions of the three 85-foot tall exhaust stacks, the top of the duplex chiller/coolant tower package, and the roof of the corrugated tin recycled water treatment building. (Ex. 46, pp. 4.12-10 to 4.12-11; see **VISUAL RESOURCES** Figure 1.)

The project will introduce vertical structural lines and linear forms, specifically three turbine combustion generators and stacks. The introduced forms and lines will be consistent with forms and lines already established by other structures in the vicinity (e.g. Port of San Francisco's ten 130+ foot tall cranes). Moreover, the evidence establishes that the introduction of neutral gray colored project structures (as required by Condition **VIS-3**) into the view will present a minor color contrast with the darker blue colors of San Francisco Bay, the green to brown colors of the East Bay Hills, and the varied coloration of the existing urban/industrial area. Overall, visual contrast with the existing setting will be low. Thus, the overall visual change caused by the proposed project will be low due to the low visual contrast, low dominance and low degree of view disruption and

blockage of the higher quality landscape feature of San Francisco Bay. (Ex. 46, p. 4.12-11.)

VISUAL RESOURCES - FIGURE 1
San Francisco Electric Reliability Project - Supplement A - KOP 1 - Stimulated View of the Project Site from Watchman Way Residences

**CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION,** FEBRUARY 2006
SOURCE: Exhibit 15

Impacts may also result from visible plumes from the cooling tower and the combustion exhausts. The evidence shows that visible plumes from the cooling tower are predicted to occur less than five percent of the time during seasonal daylight clear hours. No evidence of record suggests this limited frequency will create a significant impact. Condition of Certification **VIS-5** is designed to verify the cooling tower design parameters and ensure that visible plume impacts remain insignificant. (Ex. 46, pp. 4.12-11 to 4.12-13, 4.12-27 to 4.12-30.)

Light or Glare. General sources of night lighting in the view from Watchman Way (on Potrero Hill; also identified as KOP-1) include street and vehicle lights, and area and perimeter lighting of existing commercial, industrial, and maritime operations. Many of the lights in the area are unshielded or appear in clusters. Existing visible night lighting ranges from a soft amber color to an intense white light. Vehicle head lights and tail lights on I-280 are also a prominent source of light and appear as horizontal bright, solid orange and red bands.

The project will add ambient light to the existing nighttime landscape. If project lighting were uncontrolled, the resultant direct light trespass and uplighting to the nighttime sky could cause a significant adverse visual impact on sensitive visual receptors, such as residences on Potrero Hill. Condition of Certification **VIS-4** requires review and approval of a lighting plan for the project by Energy Commission staff to ensure that adequate mitigation measures are properly implemented and that the SFERP will not generate a substantial new source of light that could adversely affect nighttime views. (Ex. 46, p.4.12-12.)

The City apparently intends to fully develop the shoreline within the Central Waterfront Areas. Potential projects include a mixed-use development at Pier 70, the building of 1,500 housing units, a large development involving 600 acres in Mission Bay north of the SFERP site, and a 44 acre distribution and warehouse complex involving Piers 90-94. The SFERP's impact to visual

resources will remain subordinate within the industrial waterfront and the panoramic background landscape, especially when considered in conjunction with the impacts of other known projects. (Ex 46, pp. 4.12-13 to 4.12-14.)

Nighttime construction is not expected to take place. In the unlikely event that it does occur, the project owner will minimize the off-site visibility of lighting by using the minimal lighting required for operations and safety, and using lighting that is shielded and highly directional. Condition of Certification **VIS-1** ensures that construction lighting impacts, if they occur, will be kept to less than significant levels.

**FINDINGS AND CONCLUSIONS**

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

1. The SFERP will be located in an industrially zoned area of the City the San Francisco.
2. The project area possesses no identified scenic vistas.
3. The SFERP will not substantially degrade the existing visual character or quality of the site and its surroundings.
4. Construction of the project's linear facilities will cause temporary visual impacts, but no permanent visual impacts will result.
5. The primary project components that could affect visual resources include the three exhaust stacks, the duplex chiller/coolant tower package, and the roof of the recycled water treatment building.
6. The project owner will implement appropriate mitigation measures to reduce or eliminate visual impacts due to backscatter and glare from nighttime lighting, as well as from the project components.
7. The predicted occurrence of visible vapor plumes is less than 5 percent of seasonal daylight clear hours.
8. Condition of Certification **VIS-5** ensures that the occurrence of visible cooling tower plumes will be kept to a less than significant level.

9. Implementation of the Conditions of Certification will ensure that the project's visual impacts are less than significant.

10. The SFERP 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 SFERP complies with all applicable laws, ordinances, regulations, and standards relating to visual resources identified in the pertinent portion of **Appendix A** of this Decision.

We therefore conclude that, with implementation of the following Conditions of Certification, the project will not cause any significant adverse direct, indirect, or cumulative impacts to visual resources.

**CONDITIONS OF CERTIFICATION**

**CONSTRUCTION LIGHTING**

**VIS-1** The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

A. All lighting shall be of minimum necessary brightness consistent with worker safety and security;

B. All fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (i.e., direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries); and

C. Wherever feasible, any lights not necessary for safety or security shall be turned off when not in use.

**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 requires modifications to the lighting, 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 the CPM with a complaint resolution form report as specified in the General

Conditions section of this Decision, including a proposal to resolve the complaint and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report following complaint resolution.

**SITE SURFACE RESTORATION**

**VIS-2** The project owner shall remove all evidence of the laydown area and linear facility 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 this. The project owner shall submit to the CPM for review and approval a surface restoration plan which, when implemented, will satisfy these requirements.

**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. 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 treat the surfaces of all project structures and buildings visible to the public such that: a) their color(s) minimize(s) visual intrusion and contrast by blending with the landscape; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. 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, for CPM review and approval, a specific surface treatment plan that will satisfy these requirements. The 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, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by

vendor, name, and number or according to a universal designation system;

C. One set of color brochures or color chips showing each proposed color and finish;

D. One set of 11” x 17” color photo simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture, from Key Observation Point 1;

E. A specific schedule for completion of the treatment; and

F. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

**Verification:** At least 90 days prior to specifying to the vendor the color(s) and finish(es) of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the City and County of San Francisco Planning Department for review and comment. The Planning Department shall provide the CPM with documents 45 days prior to the estimated date of providing paint specification to vendors.

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.

Within ninety (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 they are ready for inspection and shall submit one set of electronic color photographs from the same key observation points identified in (D) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify: a) the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of 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: a) light fixtures do not cause obtrusive spill light beyond the project site; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to City and County of San Francisco Planning Department for review and comment a lighting mitigation plan that includes the following:

A. Location and direction of light fixtures shall take the lighting mitigation requirements into account;

B. Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;

C. Lighting shall incorporate commercially available fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

D. Light fixtures shall not cause obtrusive spill light beyond the project boundary;

E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

F. 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 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to City and County of San Francisco Planning Department for review and comment a lighting mitigation plan. The Planning Department shall provide comments to the CPM 45 days prior to ordering date.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions of this Decision, including a proposal to resolve the complaint, and a schedule for implementation. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

**PLUMES**

**VIS-5** To ensure that the cooling tower plumes will not cause significant visual impacts, the project owner shall ensure that the cooling tower is designed and operated as certified.

The cooling tower shall be designed and operated so that (1) the exhaust air flow rate (per cooling tower cell) will not be less than 118 kilograms per second at an ambient of 52 degrees Fahrenheit and 60 percent relative humidity and will not be less than 108 kilograms per second at an ambient of 80 degrees Fahrenheit and 36 percent relative humidity when the cooling tower cell fan is operating; and (2) the fan from at least one cooling tower cell shall be operating when the cooling tower is receiving any heat load from the turbine inlet air chiller(s).

**Verification:** At least 90 days prior to ordering the cooling towers, the project owner shall provide to the CPM for review the final design specifications of the cooling tower to confirm that design mass flow rates for the cooling tower cells meet the requirements of this Condition. The project owner shall not order the cooling tower until notified by the CPM that this design requirement has been satisfied.

The project owner shall provide written documentation in each Annual Compliance Report to demonstrate that the cooling towers have consistently been operated within the above-specified design parameters, except as necessary to prevent damage to the cooling tower. If determined to be necessary to ensure operational compliance, based on legitimate complaints received or other physical evidence of potential non-compliant operation, the project owner shall monitor the cooling tower operating parameters in a manner and for a period as specified by the CPM. For each period that the cooling tower operation monitoring is required, the project owner shall provide to the CPM the

cooling tower operating data within 30 days of the end of the monitoring period. The project owner shall include with this operating data an analysis of compliance and shall provide proposed remedial actions if compliance cannot be demonstrated.

## 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. (4/27/06 RT 72-74.)

### SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is in an industrialized neighborhood that is zoned M-2 (Heavy Industry). The area surrounding the project site is fairly noisy, due to freeway and surface street traffic, marine activities, airplane over flights, and the sounds of commerce.

The nearest sensitive noise receptors are dwelling units and offices in a 21-unit building at the corner of Minnesota and 25th Streets, approximately 1,600 feet west of the project site. Other sensitive noise receptors include a row of residences along Tubbs Street, approximately 2,100 feet northwest of the site, and a work/live loft building on the southwest corner of 23rd and Minnesota Streets, approximately 2,200 feet from the project site. Both the loft building and the residences along Tubbs Street are shielded from power plant noise by intervening buildings. Other sensitive receptors are residences on Potrero Hill to the west, over 2,700 feet from the project site. (Ex. 46, p. 4 6-5.)

Applicant performed an ambient noise survey in August and October, 1999, for the Potrero Power Plant Unit 7 Project (Docket No. 00-AFC-4). Since the SFERP will be constructed on a site approximately 1,500 feet south of the Potrero Unit 7 project, its noise impacts on the area will be very similar to the Unit 7 project. Little has changed in the noise regime near the project site, and the evidence indicated that this survey remains valid as a baseline for comparison of predicted project noise to existing ambient noise.

Long-term (25 consecutive hours) noise measurements were recorded at the live/work lofts at the southwest corner of 23rd and Minnesota Streets, referred to as ML-1. Short-term (one hour) measurements were taken at various times throughout the day and night at ML-1, and at three other locations:

- ML-2: Southern boundary of the Potrero Power Plant site.
- ML-3: Western boundary of the Potrero Power Plant site, adjacent to the electrical substation.
- ML-4: On a hillside in a residential district on Potrero Hill, near the intersection of 22nd and Missouri Streets, west of Interstate Highway 280.

The Applicant performed additional ambient noise monitoring on February 22 and 23, 2005, at ML-5, located at the Army Street Mini Storage on Cesar Chavez and Indiana Streets. This provides a measure of the ambient noise regime at the dwelling units at the corner of Minnesota and 25th Streets, referred to as R1, which represent the nearest residential receptors. (Ex. 15, § 8.5.4.1; Table 8.5-8).

The ambient noise monitoring surveys recorded $L_{eq}$ (energy average) and $L_{90}$ (background) noise levels. These figures are summarized in **NOISE Table 1**:

**NOISE Table 1:**
**Ambient Noise Survey Results**

| Measuring Location | Noise Level (dBA) | |
|---|---|---|
| | $L_{eq}$ | $L_{90}$ |
| ML-1: Live/work Lofts, 23rd & Minnesota Streets | 65 (daytime)<br>57 (nighttime) | 59 (daytime)<br>49 (nighttime) |
| ML-2: Southern Property Boundary | 64 (daytime) | 56 (daytime) |
| ML-3: Western Property Boundary | 62 (daytime) | 59 (daytime) |
| ML-4: Potrero Hill Neighborhood | 55 (daytime)<br>50 (nighttime) | 53 (daytime)<br>47 (nighttime) |
| ML-5: Army Street Mini Storage | 68 (daytime)<br>59 (nighttime) | 66 (daytime)<br>53 (nighttime) |

Source: Ex. 46, p.4.6-6.

The project will create noise during both its construction and its operation.

1. Construction

Construction noise is a temporary event, in this case expected to last about 12 months. Article 29 of the San Francisco Police Code limits construction equipment to 80 dBA measured at 100 feet. Unless a special permit is obtained, noisy construction work is limited to hours between 7:00 a.m. and 8:00 p.m.

Predicted construction noise levels are summarized in N**OISE Table 2**.

**NOISE Table 2**
**Predicted Construction Noise Levels**

| Receptor/Distance | Highest Noise Level (dBA $L_{eq}$) |
|---|---|
| 100 feet | 82 |
| ML-5 (1,600 feet) | 58 |

Source: Ex. 46, p.4.6-7.

While **NOISE Table 2** shows that construction noise, measured at 100 feet, could exceed the City ordinance limit (80dBA at 100 feet) by 2 dBA, this represents a

rough and very conservative estimate. Noisy construction work will be performed during daytime hours unless a special permit is issued by the City Director of Public Works. Condition of Certification **NOISE-6** ensures this.

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 receptor, the dwelling units at R-1 (represented by ML-5), may reach 58 dBA. The ambient daytime $L_{eq}$ level at ML-5, is 68 dBA (see Table 1, above). Thus, the addition of construction noise will not increase the ambient level at all.

Construction noise at the Potrero Hill neighborhood, represented by ML-4, will be quieter than at ML-5 due to its greater distance from the project site (2700 feet versus 1600 feet). This will yield construction noise levels lower than 54 dBA, which is lower than the daytime Leq at ML-4 of 55 dBA. Combining these levels yields 57 dBA, an increase of 2 dB. Such an increase is typically barely noticeable, and unlikely to cause annoyance.

Pile driving will occur during construction. Associated noise is predicted to reach 74 dBA at a distance of 1,500 feet. The nearest sensitive receptors are 1,600 feet (0.3 mile) distant at R-1. Correcting for distance yields noise levels of approximately 71 dBA at R-1. This is substantially below the permissible limit of 80 dBA specified in Section 2907(b) of the Police Code. (Id.) It is highly unlikely that vibration from pile driving could produce significant impacts at that distance.
In the event that actual construction noise should exceed prescribed limits and annoy nearby workers or residents, Conditions of Certification **NOISE-1** and **NOISE-2**, establish a Noise Complaint Process that requires the project owner to resolve any problems caused by construction noise. The evidence establishes that this is appropriate mitigation. (Ex. 46, p. 4.6-7.)

Construction of linear facilities typically moves along at a rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. With adherence to the provisions of local LORS, construction of the project linears will create noise impacts that are less than significant. (Ex. 46, p. 4 6-8.)

2. Operation

The noise emanating from a power plant during normal operation is generally broadband, steady state in nature. When it is operating, the SFERP will essentially be a continuous noise source. Occasional brief increases in noise levels will occur as steam relief valves open to vent pressure, or during startup or shutdown as the plant transitions to and from operation. Power plant noise contributes to, and becomes part of, the background noise level when most intermittent noises cease. The primary noise sources of the project include the gas turbine generators, gas turbine air inlets, exhaust stacks, natural gas fuel compressors, electrical transformers, and various pumps and fans. (Ex. 46, p. 4.6-9.)

The Applicant performed noise modeling to determine the project's noise impacts on sensitive receptors. Project operating noise at ML-1 (the live/work loft building) and at R-1 (the nearest residences) is projected to be less than 54 dBA $L_{eq}$; operating noise at ML-4 (the Potrero Hill neighborhood) would not exceed 47 dBA $L_{eq}$. Nighttime $L_{eq}$ levels at ML-1, ML-4, and ML-5 (representing the dwellings at R1, those nearest the project site) are lower than daytime levels.

As seen in **NOISE Table 3** below, the project will not exceed the prescribed limits at either ML-1, the live/work loft building, ML-5, near the dwellings at R1, or ML-4, the Potrero Hill neighborhood. The project would thus comply with local LORS. Condition of Certification **NOISE-4** will ensure compliance.

**NOISE Table 3**
**Noise Comparison Based on Zoning District**

| Receptor | Zoning District | Power Plant Noise Level dBA $L_{eq}$ | Noise Limit dBA | | Exceedance dBA | |
|---|---|---|---|---|---|---|
| | | | Daytime 7a.m.-10p.m. | Nighttime 10p.m.-7a.m. | Day-time | Night -time |
| ML-1, ML-5 | M-2 | 54 | 75 | 75 | -21 | -21 |
| ML-4 | RM-2 | 47 | 55 | 50 | -8 | -3 |

Source: Ex. 46, p. 4.6-10

Adverse impacts, as defined in CEQA, can be detected by comparing predicted power plant noise levels to the ambient nighttime background noise levels at the nearest sensitive receptors, as shown in **NOISE Table 4**:

**NOISE Table 4**
**Operational Noise Impacts at Nearest Sensitive Receptors**

| Receptor | Ambient Noise Level (dBA $L_{90}$) | Power Plant Noise Level (dBA $L_{eq}$) | Resultant Noise Level (dBA) | Change (dBA) |
|---|---|---|---|---|
| ML-1: Live/Work Lofts | 49 | 54 | 55 | +6 |
| ML-4: Potrero Hill Neighborhood | 47 | 47 | 50 | +3 |
| ML-5: Army Street Mini Storage | 53 | 54 | 57 | +4 |

Source: Ex. 46. p. 4.6-11.

An increase of up to 5 dBA is considered a less than significant impact, and an increase of more than 10 dBA as a clearly significant impact. The increase in noise at ML-1, the live/work lofts, would be approximately 6 dBA. This increase, in a relatively noisy neighborhood such as that encompassing ML-1, represents a less than significant impact.[53]

The increase in noise at R-1, the nearest residences (represented by ML-5), would be approximately 4 dBA. Such an increase is barely noticeable.[54] The increase in noise at ML-4, the Potrero Hill neighborhood, would be approximately 3 dBA. Such an increase is barely detectable, and clearly constitutes a less than significant impact. (Ex 46, p. 4.6-11.)

[53] The land at ML-1 is zoned M-2, Heavy Industry.

[54] These residences also lie on land zoned M-2, Heavy Industry.

Vibration from an operating power plant could be transmitted by two chief means; through the ground (ground borne vibration), and through the air (airborne vibration). The operating components of a simple cycle power plant consist of high-speed gas turbines, compressors, and various pumps. All of these pieces of equipment must be carefully balanced in order to operate; permanent vibration sensors are attached to the turbines and generators. The evidence indicates that it is unlikely that any vibration would be felt beyond the equipment. (Ex. 46, p. 4.6-12.)

In conclusion, the evidence establishes that a power plant such as the SFERP will fit into the industrial neighborhood for which it is proposed and that the quality and loudness of its noise emanations would tend to blend with the overall noise regime of the neighborhood, even when considered along with other local projects such as Pier 70 development and construction and operation of the MUNI maintenance facility. (Ex. 46, pp. 4.6-12 to 4.6-13.)

**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 SFERP will not significantly increase noise levels above existing ambient levels in the surrounding community.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by employing measures such as sound reduction devices and limiting construction to daytime hours in accordance with local noise control laws and ordinances.

3. 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.

4. Operational noise will not cause significant adverse impacts to nearby residences.

5. The project owner will implement measures to protect workers from injury due to excessive noise levels.

6. The SFERP will not create ground or airborne vibrations which cause significant off-site impacts.

7. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

The Commission concludes that implementation of the following Conditions of Certification ensure that the SFERP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision, and 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 one-half mile of the site and the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

**Verification:** Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

## NOISE COMPLAINT PROCESS

**NOISE-2** Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve

all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

**Verification:** Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with the local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

**NOISE-3** The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program. The project owner shall make the program available to Cal-OSHA upon request.

**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 plant operation alone to exceed 47 dBA $L_{eq}$ measured near the intersection of 22$^{nd}$ and Missouri Streets (monitoring location ML-4).

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. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at the affected residential location (ML-4) to determine the presence of pure tones or other dominant sources of plant noise.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

A. When the project first achieves a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring site ML-4, or at a closer location acceptable to the CPM. This survey during power plant operation (with all three combustion turbine units operating at a sustained output of at least 80 percent) shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been introduced.

B. If the results from the noise survey indicate that the power plant noise level ($L_{eq}$) at the affected receptor site exceeds the above value for any given hour during the 25-hour period, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

**Verification:** The survey shall take place within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity. Within 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 will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

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 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

**Verification:** Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

## CONSTRUCTION TIME RESTRICTIONS

**NOISE-6** Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times of day delineated below, unless a special permit has been issued by the City Director of Public Works:

| | |
|---|---|
| Any Day | 7 a.m. to 8 p.m. |

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

**Verification:** Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

**NOISE COMPLAINT RESOLUTION FORM**

San Francisco Electric Reliability Project
(04-AFC-1)

**NOISE COMPLAINT LOG NUMBER** _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date:

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____ Date: _____

(Attach additional pages and supporting documentation, as required).

## E. 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. (5/1/06 RT 64-72; Exs. 1, 15, 16, 46, pp. 4.8-1 to 4.8-11; see also, 5/1/06 RT 66-67.)

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 occurs in the project area, thus increasing demand for community resources.

The evidence establishes that the majority of the construction workforce is likely to be local, coming from within the nine county Bay Area.[55] Since work

[55] This includes the counties of San Francisco, San Mateo, Marin, Alameda, Contra Costa, Napa, Santa Clara, Solano, and Sonoma.

assignments during construction typically last from a matter of days to a matter of weeks, the vast majority of the workforce will likely commute to the job and not displace the local population. (Ex. 46, pp. 4.8-3 to 4.8-4.)

Project construction (power generation facility including the natural gas pipeline, processed water pipeline, and electric power transmission line) is expected to occur over a 12-month period. The greatest number of construction workers will occur in the sixth and seventh months of construction. The number of construction workers will range from about 50 in the first and last few months of construction to 264 workers at peak construction. There will be an average of 161 workers per month during construction.

During operation of the project, about 11 workers will be needed. Most of the operational workers are expected to come from San Francisco County, with the rest coming from the greater nine-county Bay Area. The evidence establishes that this small increase in employment will have little effect on employment rates. (Ex. 46, p. 4.8-4.)

The capital costs for project construction are approximately $140 million. This amount does not include the cost for combustion turbines that the City acquired from the California Department of Water Resources through a settlement with Williams Energy Marketing and Trading Company. The total construction payroll is $13.4 million and the estimated value of materials and supplies that will be purchased within San Francisco County during construction is between $2 and $3 million.

The total sales tax estimated during construction is expected to be between $170,000 and $255,000. The SFERP, which will be owned by the CCSF, is exempt from property taxes pursuant to California Revenue and Taxation Code section 202(a). The total payroll for the operation phase is estimated to be $0.9 million annually. In addition, there will be about $0.25 million in local expenditures

per year on materials and supplies during operation. Sales tax revenue from locally purchased materials during operation will likely be between $17,000 and $25,500 annually. (Ex. 46, p. 44.8-5.)

The following Table provides a summary of socioeconomic data and information, with emphasis on the economic effects of the SFERP.

**SOCIOECONOMICS Table 1**
**Data and Information**

| | |
|---|---|
| Estimated Project Capital Costs | $140 million |
| Estimate of Locally Purchased Materials | |
| Construction | $2 - $3 million |
| Operation | $0.25 million per year |
| Estimated Annual Property Taxes | Not applicable. SFERP is a public agency. |
| Estimated School Impact Fees | SFERP is exempt |
| Estimated Direct Employment | |
| Construction (average) | 161 jobs (average per month) |
| Operation | 11 jobs |
| Estimated Secondary Employment | |
| Construction | 58 jobs (plus 161 average direct jobs for a total of 219 average construction jobs) |
| Operation | 4 jobs (plus 11 direct jobs for a total of 15 average operation jobs) |
| Estimated Local Direct Expenditures | |
| Construction | $11.05 million |
| Operation | $1.17 million |
| Estimated Local Secondary Expenditures | |
| Construction | $2.5 million (plus $11.05 local direct construction expenditures for a total of $13.55 local construction expenditures) |
| Operation | $1.19 million (plus $1.17 million local direct operation expenditures for a total of $2.36 million local operation expenditures) |
| Estimated Payroll | |
| Construction | Total - $13.4 million |
| Operation | Average: $0.9 million annually |
| Estimated Sales Taxes | |
| Construction | $170,000 to $255,000 |
| Operation | $17,000 to $25,500 annually |
| Existing Unemployment Rates | Existing – 3.8 percent in December 2005, for San Francisco-San Mateo-Redwood City Metropolitan Division |
| Percent Minority Population (6 mile radius) | 57.75 percent |
| Percent Poverty Population (6 mile radius) | 11.36 percent |
| Percent Minority Population (1 mile radius) | 50.56 percent |
| Percent Poverty Population (1 mile radius) | 18.03 percent |

Source: Exhibit 46, p. 4.8-7.

The analysis of record characterizes the increase in employment and the increase in sales tax and local expenditures for both construction and operation as beneficial to the Bay Area. (Ex. 46, 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. 46, pp. 4.8-8 to 4.8-9.)

Finally, the evidence shows that the size of the available workforce in the San Francisco Bay area ensures that the SFERP construction, in conjunction with other projects planned or in process, will not put a strain on the types of workers needed to complete all other identified projects. Because the SFERP 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, it is unlikely that it would contribute significantly to cumulative socioeconomic impacts. Thus, the SFERP's impact on socioeconomics, when combined with the existing impact of other projects, is not cumulatively considerable. (Ex. 46, p. 4.8-10.)

2. Environmental Justice Aspects

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 fifty 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 fifty 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. 46, p. 4.8-10.)

The evidence shows that Census 2000 information indicates a minority population by census block of 57.75 percent within a six-mile radius, and 50.56 percent within one-mile of the SFERP project. (5/1/06 RT 69 – 70; Ex. 46, p. 4.8-10.) In addition, there are pockets (census blocks) with greater than 75 percent minority population within the six-mile radius. Census 2000 data by census block group shows that the low-income population is 11.36 percent within the six-mile radius and 18.03 percent within the one-mile radius.

Thus, minority and low-income individuals live within both a one-mile and a six mile radius of the project site. Applicant does not dispute this, having repeatedly characterized the project vicinity (Southeast San Francisco) as an "environmental justice" area which has been heavily burdened by multiple industrial sources. (See e.g. 5/31/06 RT 167; Applicant's Opening Brief, p. 22.) Applicant also details past, present, and future actions which comprise part of its overall plan for relieving the burden placed upon area residents. (5/31/06 RT 150-54.)

In Applicant's estimation, the SFERP is a critical component to reduce the environmental impacts of electric power generation in the Southeast San Francisco Community. (Opening Brief, pp. 22 -23, 26.) To achieve this goal, Applicant has stated that "[e]nvironmental justice is the primary factor for this entire project…". (5/31/06 RT 166: 16 – 20; Opening Brief, p. 22.) The Applicant variously contends that the SFERP will benefit the local community by facilitating the shutdown of existing Potrero units (5/31/06 RT 144, 45, 159), or at least assist in creating the opportunity for such shutdown (5/31/06 RT 166).[56]

Overall, and as noted by Intervenor Sarvey (Opening Brief, p. 8), the evidence of record simply does not persuade us that generation at the Potrero site will necessarily cease as a result of the SFERP. This question is interesting, but not pivotal. We do not question Applicant's motivation, intention, or policy goals in this regard, but nevertheless must constrain ourselves to basing this Decision on matters of ascertainable fact, supported by credible evidence.

As discussed throughout the various sections of this document, ascertainable facts establish credibly and persuasively that all impacts from the SFERP will be mitigated to below a level of significance. For example, the evidence convincingly establishes that $NO_x$ emissions will be offset at a greater ratio than

[56] One of the Applicant's witnesses firmly stated the belief that the SFERP "…definitely will lead to closure of Potrero." (5/31/06 RT 197.) There is little substantively discernable difference between this desire and that characterized as the "need" for the project mentioned in the Project Description and Purpose portion, *supra*.

legally required, that offsets will be local, that more $PM_{10}$ will be offset than will be emitted by the project, that additional $SO_2$ reduction credits will be obtained if necessary, that an indoor air quality program focused on pediatric asthma will be implemented, and that a tree planting program will target the area without regard to whether or not the Potrero generation continues to operate. (Applicant's Opening Brief, pp. 24 – 25 and citations therein.) In short, the evidence clearly establishes that the SFERP will cause no additional impacts to the area and will create a degree of net environmental benefit. (5/31/06 RT 162 -63, 168, 174.) Given these factors – especially the lack of significant environmental impacts attributable to the SFERP – we believe the principles underlying environmental justice are adequately satisfied.

The intervenors weave their "environmental justice" concerns throughout their challenges to the results reached in the various analyses on topic areas addressed in the Decision.[57] (See, e.g., Sarvey Opening Brief, pp. 16-24; Reply Brief, pp. 8-14; July 21, 2006 Reply Brief to Staff Late Filing, p. 27.) Intervenor CARE suggests that siting a project in an area acknowledged for its environmental justice sensitivities violates the "equal protection" mandates of the Federal and State Constitutions. (Opening Brief, p. 4). Given the lack of impact attributable to SFERP, however, we fail to see the legitimacy of this argument.

Succinctly, the intervenors' position seems to be founded on the premise that this project, even with its lack of impacts, cannot be sited in Southeast San Francisco unless it somehow ameliorates existing impacts caused by past development. This misses the point. The Environmental Justice analysis explores whether certain groups will suffer *disproportionate* impacts as the result of a project. It is

[57] Intervenor Sarvey contends, at some length, that the record is flawed in that it fails to contain a sufficient analysis of the SFERP in conjunction with the other projects, most notably those referred to in the "Southern Waterfront Environmental Impact Report". (Ex. 92b; Opening Brief, pp. 8-14.) In his view, this exacerbates the violation of Environmental Justice principles. We note that cumulative impacts of the SFERP and other reasonably foreseeable projects are addressed under each pertinent topic covered during the hearings and in each relevant section of this Decision. The intervenor's contention thus does not warrant revisiting here.

difficult to fathom how the lack of impacts from the SFERP could disproportionately affect anyone.

## FINDINGS AND CONCLUSIONS

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

1. The SFERP will draw primarily upon the local labor force from nearby counties for the construction and the operation workforce.

2. The project will not cause an influx of a significant number of construction or operation workers into the local area.

3. The proposed project is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.

4. The project will have a construction payroll of approximately $13.4 million.

5. SFERP will result in local direct construction expenditures of approximately $11 million, and local direct operational expenditures of about $1.2 million.

6. The project 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. Federal environmental justice guidelines are not binding in this case. Nevertheless, the analysis of record has been performed in conformity therewith.

9. Minority and low income populations exist within both a one and a six mile radius of the site.

10. All environmental impacts from the SFERP will be mitigated to below a level of significance, regardless of whether Potrero generation continues in operation.

11. Siting of the SFERP, and the analysis thereof, are consistent with the principles underlying environmental justice.

12. The SFERP's contribution to cumulative impacts, in conjunction with the impacts from other reasonably foreseeable projects, are adequately addressed in the evidence of record and in appropriate portions of this Decision.

13. The SFERP will not cause or contribute to disproportionate impacts upon minority or low income groups.

We therefore conclude that the project construction and operation activities will create some degree of benefit to the local area and will conform with principles of environmental justice. No Conditions of Certification are required for this topic.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Proof of Service List*

Appendix C: *Exhibit List*

# APPENDICES

## AIR QUALITY

| Federal | Description |
|---|---|
| | New Source Review : Best Available Control Technology (BACT) and Offset requirements. |
| | Title IV: Acid Rain |
| | Title V: Federal operating permit program |
| | New Source Performance Standard: 75 ppm $NO_x$ and 150 ppm $SO_x$ @15% oxygen ($O_2$). |
| **State** | |
| | California Health and Safety Code: Permitting of source needs to be consistent with approved Clean Air Plan |
| **Local** | |
| | New Source Review: BACT and offsets |
| | Acid Rain: Requires continuous emission monitoring system. |
| | Particulate Matter and Visible Emissions: Emissions shall not be darker than Ringelmann No. 1 for a continuous three-minutes, and no more than 0.15 grains PM per standard dry cubic foot. |
| | Nitrogen Oxides from Stationary Gas Turbines. 9 ppm $NO_x$@15%$O_2$. |

### FEDERAL

The Federal Clean Air Act requires the proponent of any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain a construction permit before commencing construction. This process is known as New Source Review (NSR). Its requirements differ depending on the attainment status of air contaminants in the area where the major facility is to be located. The NSR requirements apply to areas that have not been able to demonstrate compliance with national ambient air quality standards. Prevention of Significant Deterioration (PSD) requirements apply in areas that are in attainment of the national ambient air quality standards. It should be noted that the SFERP is exempt from the Federal PSD review due to its emissions.

Title V of the Federal Clean Air Act requires states to implement and administer an operating permit program. Stationary sources are required to operate in compliance with the Title V requirements promulgated in Title 40, Code of Federal Regulations, Section 70. A Title V permit contains all of the requirements specified in different air quality regulations that affect an individual project.

The U.S. Environmental Protection Agency (U.S. EPA) has reviewed and approved the Bay Area Air Quality Management District's (District) regulations and has delegated to the District the implementation of the Federal NSR, and

Title V programs. The District implements these programs through its own rules and regulations that are, at a minimum, as stringent as the Federal regulations.

The SFERP's gas turbines are also subject to the Federal New Source Performance Standards (NSPS). These standards include a $NO_x$ emissions concentration of no more than 75 parts per million (ppm) at 15 percent excess oxygen (ppm@15%$O_2$), and a $SO_x$ emissions concentration of no more than 150 ppm@15%$O_2$.

## STATE

The Federal Clean Air Act is implemented by the California Air Resources Board (CARB) and each local air district. CARB, under authority granted by the Mulford-Carrell Air Resources Act, is required to adopt state ambient air quality standards for criteria air contaminants that can be, and often are, more stringent than those adopted by the U.S. EPA. For instance, the state has its own ambient air quality standards for PM10, PM2.5, and ozone, among others. The local air districts are required to prepare air quality plans and promulgate specific air quality regulations that are approved by CARB, in order to seek and maintain compliance with the state ambient air quality standards (California Health and Safety Code, Part 3, Chapter 10). When power plants are licensed by the Energy Commission, the local air district's permit is part of that license, as the license incorporates the conditions the local air district would otherwise have required for compliance with state law.

## LOCAL

### Bay Area Air Quality Management District

As part of the licensing process, in lieu of issuing a construction permit for the SFERP facility, the District will prepare a Determination of Compliance (DOC). This document evaluates whether and under what conditions the proposed project will comply with the District's applicable rules and regulations. The project is subject to the specific District rules and regulations that are briefly described below:

### Regulation 2

Rule 1 - General Requirements. This rule contains general requirements, definitions, and a requirement that an applicant submit an application for an authority to construct and permit to operate.

Rule 2 - New Source Review. This rule applies to all new and modified sources. The following sections of Rule 2 are the regulations that are applicable to this project.

- Section 2-2-301 - BACT Requirement: This rule requires that BACT be applied for each pollutant which is emitted in excess of 10.0 pounds per day.

- Section 2-2-302 - Offset Requirement, Precursor Organic Compounds and Nitrogen Oxides. This section applies to projects with an emissions increase of 50 tons per year or more of organic compounds and/or $NO_x$. Offsets shall be provided at a ratio of 1.15 tons of emission reduction credits for each 1.0 ton of proposed project permitted emissions.
- Emission reductions of nitrogen oxides and/or sulfur dioxide may be used to offset increased emissions of PM10 at offset ratios deemed appropriate by the Air Pollution Control Officer.
- A facility that emits less than 100 tons of any pollutant may voluntarily provide emission offsets for all, or any portion, of their PM10 or sulfur dioxide emissions increases.
- Section 2-2-606 - Emission Calculation Procedures, Offsets. This section requires that emission offsets be provided from the District's Emissions Bank, and/or from contemporaneous actual emission reductions.

Rule 7 - Acid Rain. This rule applies the requirements of Title IV of the Federal Clean Air Act, which are spelled out in Title 40, Code of Federal Regulations, section 72. The Title IV requirements will include the installation of continuous emission monitors to monitor acid deposition precursor pollutants.

**Regulation 6**

Particulate Matter and Visible Emission. The purpose of this regulation is to limit the quantity of particulate matter in the atmosphere. The following two sections of Regulation 6 are directly applicable to this project:

- Section 301 - Ringelmann No. 1 Limitation: This rule limits visible emissions to no darker than Ringelmann No. 1 for periods greater than three minutes in any hour.
- Section 310 - Particulate Weight Limitation: This rule limits source particulate matter emissions to no greater than 0.15 grains per standard dry cubic foot.

**Regulation 9**

Rule 1 - Limitations

- Section 301: Limitations on Ground Level Sulfur Dioxide Concentration. This section requires that emissions of sulfur dioxide shall not impact at ground level in excess of 0.5 ppm for 3 consecutive minutes, or 0.25 ppm averaged over 60 minutes, or 0.05 ppm averaged over 24 hours.
- Section 302: General Emission Limitation. This rule limits the sulfur dioxide concentration from an exhaust stack to no greater than 300 ppm dry.

Rule 9 - Nitrogen Oxides from Stationary Gas Turbines. Effective January 1, 1997, this rule limits gaseous fired, SCR equipped, combustion turbines rated greater than 10 MW to 9 ppm@15%$O_2$.

## ALTERNATIVES

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 range of alternatives is governed by the “rule of reason” which requires consideration only of those alternatives necessary to permit informed decision-making and public participation. The California Environmental Quality Act 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 Dist. 1989) 214 Cal. App. 3d 1438.]

## BIOLOGICAL RESOURCES

| Federal | Description |
|---|---|
| Federal Endangered Species Act (1973)<br>Title 16, U. S. Code section 1531 | Projects that could adversely impact a Federally listed species require consultation with the U. S. Fish and Wildlife Service and mitigation of potential impacts |
| Migratory Bird Treaty Act<br>Title 16, U. S. Code sections 703 to 712 | Protects all migratory birds, including their nests and eggs |
| Bald and Golden Eagle Protection Act<br>Title 16, U. S. Code section 668 | Protects bald and golden eagles from harm or trade in parts |
| **State** | |
| State Endangered Species Act (1984)<br>Fish and Game Code, section 2050 et seq. | For species that are protected (listed) by the state, these species can not be 'taken' or harmed w/out a 'take' permit provided by the California Department of Fish & Game |
| Fully Protected Species<br>Fish and Game Code, sections 3511, 4700, 5050, and 5515 | Prohibits take of species that are classified as Fully Protected |
| Nests and Eggs – Take, Possess or Destroy, Fish and Game Code, sections 3503 and 3503.5 | Protects birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Also, specifically protects birds of prey and their eggs |
| Migratory Birds<br>Fish and Game Code, section 3513 | Protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the Migratory Bird Treaty Act |
| Native Plant Protection Act (1977)<br>Fish and Game Code, section 1900 et seq. | Designates and protects rare, threatened and endangered California plants |
| Title 14, California Code of Regulations, sections 670.2 and 670.5 | Lists animals designated as threatened or endangered in California |
| McAteer-Petris Act and San Francisco Bay Plan – administered by the San Francisco Bay Conservation and Development Commission (BCDC) | BCDC regulates activities and development with the potential to adversely impact the San Francisco Bay |

| **Local** | |
|---|---|
| City and County of San Francisco General Plan, Objective 8, Policies 1.1, 1.2, 1.3, & 1.4 | Conserve, protect, restore and replenish the natural resources of San Francisco |
| City and County of San Francisco General Plan, Objective 8 - Policies 8.1, 8.2, and 8.3 | Ensures protection of plant and animal life in the City, coordination with the California Department of Fish and Game, protection of habitat of plants and animals that need a relatively natural environment, and rare and endangered species |
| San Francisco General Plan Water Resources Policy 3.3 | Implement plan to improve sewage treatment and halt pollution of the Bay and ocean |
| San Francisco Public Health Code (Article 22A) | Requires soils and groundwater testing, assessment of environmental risks including risks to marine life in San Francisco Bay, implementing mitigation measures if necessary to protect the environment, and reporting the results of investigation and mitigation activities |
| Sustainability Plan for the City of San Francisco, goals 2, 3, and 4 | Protect and restore remnant natural habitats, sensitive species, and to maximize habitat value in developed and naturalistic areas, both public and private |
| San Mateo County General Plan, Policies 1.2, 1.23, 1.26, and 1.27 | Protect sensitive habitats, regulate development to minimize impacts to vegetation, water, fish and wildlife resources, and protect rare, endangered, and unique plants and animals |

## CULTURAL

| State | Description |
|---|---|
| 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 [possibly the project applicant] 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). |
| Public Resources Code 5024.1 | The California Register of Historic Resources (CRHR) is established and includes properties determined eligible for the National Register of Historic Places (NRHP)(criteria: A. events, B. important persons, C. distinctive construction, and D. data), State Historic Landmark No. 770 and subsequent numbered landmarks, points of historical interest recommended for listing by the State Historic |

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|---|---|
| | 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** | |
| San Francisco General Plan, General Goals, Goal 1 | The first goal of the General Plan is the protection, preservation, and enhancement of the economic, social, cultural, and esthetic values that establish the desirable quality and unique character of the city. |
| San Francisco General Plan, Preamble, Priority Policy 7 | Landmarks and historic buildings should be preserved. |
| San Francisco General Plan, Preservation Element, Policy 7.0 | Encourages historic preservation through local, state, and Federal programs. |
| Central Waterfront Area Plan, Urban Design Section, Policy 10.3 | Encourages the rehabilitation of architecturally or historically significant buildings with reuse potential. |

## FACILITY DESIGN

A lists of LORS applicable to each engineering discipline: civil, structural, mechanical and electrical, are described in Exhibit 1, Appendices 10-A through 10-G.

| **Federal** | **Description** |
|---|---|
| | Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards |
| **State** | |
| | 2001 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations) |
| **Local** | |
| | 1997 Uniform Building Code (UBC), Appendix Chapter 16, Division 4 |
| **General** | |
| | American National Standards Institute (ANSI)<br>American Society of Mechanical Engineers (ASME)<br>American Welding Society (AWS)<br>American Society for Testing and Materials (ASTM) |

## GEOLOGY AND PALEONTOLOGY

| Federal | Description |
|---|---|
| | The proposed SFERP is not located on Federal land. There are no Federal LORS for geologic hazards and resources for this site. |
| **State** | |
| California Building Standards Code (CBSC), 2001 [particularly Part 2, California Building Code (CBC)] | The CBC includes a series of standards that are used in project investigation, design and construction (including grading and erosion control). |
| **Local** | |
| Standard of Practice - Society for Vertebrate Paleontology (SVP), 1995 | The “Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic 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 SVP, a national organization of professional scientists. |

## HAZARDOUS MATERIALS MANAGEMENT

| Federal | Description |
|---|---|
| The Superfund Amendments and Reauthorization Act of 1986 (42 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) | Established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. |
| The CAA section on Risk Management Plans (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 CFR 172.800 | U.S. Department of Transportation (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 oil that my leak into navigable waters. |
| Title 49, Code of Federal Regulations, Part 190 | Outlines gas pipeline safety program procedures. |
| Title 49, Code of Federal Regulations, 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. |
| Title 49, Code of Federal Regulations, 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 pipeline |

| | |
|---|---|
| | construction vary according to the population density and land use, which characterize the surrounding land. This part also contains regulations governing pipeline construction, which must be, followed for Class 2 and Class 3 pipelines, and requirements for preparing a Pipeline Integrity Management Program. |
| **State** | |
| The California Health and Safety Code, section 25534 | Directs facility owners, storing or handling regulated substances (formerly called “acutely hazardous materials”) in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local administering agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP). |
| Title 8, California Code of Regulations, Section 5189 | Requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process. |
| Title 8, California Code of Regulations, Section 458 and Sections 500 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 for Material Engineering (ASME) 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. |
| **Local** | |
| San Francisco Public Health Code Articles 21 and 22 | Includes requirements for handling of hazardous materials, and enforced by the San Francisco Department of Public Health (SFDPH). The City and County of San Francisco administers the hazardous materials handling and ensures compliance with Federal and state laws. |
| Article 80 of the San Francisco Fire Code | Incorporates the hazardous materials handling requirements of the Uniform Fire Code (Articles 79 and 80, which include minimum setback requirements for outdoor storage of ammonia). The administering agency for this authority is the San Francisco Fire Department. |
| Article 21A of the San Francisco Public Health Code | Specifies the requirements for handling of regulated substances including the preparation of an RMP, and is enforced by the SFDPH. |

The Certified Unified Program Authority (CUPA) with responsibility to review RMPs and Hazardous Materials Business Plans is the San Francisco Department of Public Health (SFDPH). 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 CCR Title 24 and 2001 California Building Code (SFPUC 2005a Section 2.3.1).

## LAND USE

| Federal | Description |
|---|---|
| | The proposed project is not located on Federally administered public lands; therefore, it is not subject to Federal regulations pertaining to land use. |
| **State** | |
| | The authority to regulate land use and development on private property is delegated to local jurisdictions by the state. As a result, there are no specific state-level land use LORS applicable to the project or the site. |
| **Local** | |
| Port of San Francisco | The Port of San Francisco has jurisdictional authority as to what is built within their boundary areas, but to minimize confusion between agency entitlement processes, they adopted the City of San Francisco's Central Waterfront Area Plan in 1997. This Plan defines acceptable uses, policies and land use information applicable to all properties under the Port's jurisdiction. |
| City/County of San Francisco General Plan Objectives and Policies-Part 1 | Land Use, Industry, and Urban Design elements of the City/County of San Francisco General Plan/Central Waterfront Area Plan<br>The overall goal of this plan is to create a physical and economic environment conducive to the retention and expansion of San Francisco's industrial and maritime activities. This goal is set forth in order to reverse the pattern of economic decline in the area and establish a land base for the industrial and maritime components of the San Francisco economy. |
| City/County of San Francisco Zoning Code | Zoning is the specific administrative tool used by a jurisdiction to implement its General Plan land use policies, and is often more specifically defined than General Plan designations. The CCSF has zoned the SFERP property as M-2 Heavy Industry. This zoning designation applies to all lands bay-ward of Third Street in the vicinity of the power plant. |

### San Francisco General Plan

The San Francisco General Plan contains ten elements, which set forth goals, objectives, and policies for the physical development of the city. The General Plan also includes Area Plans with objectives and policies for specific geographic

areas of the city. The project site is in the Central Waterfront planning area that extends from Pier 48 in the north to Islais Creek in the south.

1. Objective 1 of the Central Waterfront Plan is to “strengthen and expand land use essential to realizing the economic potential of the sub-areas” and Policy 1 encourages “the intensification and expansion of industrial and maritime uses.” There are numerous other policies that call for the retention, expansion, and protection of industrial activity in this area. With this in mind, the development of new residential is not precluded.

2. Objective 6 of the Plan is to “retain and improve existing residential uses and develop a limited quantity of new housing. ”Therefore, the CCSF’s policies imply that industrial uses and residential uses can be compatible providing that the adverse environmental impacts of new development can be adequately mitigated (see Objective 1, Policy 3).

**San Francisco Planning Code (Zoning Ordinance)**

The SFERP site is within an M-2 Heavy Industry use zone. Permitted uses include steam power plants. Because the Planning Code specifically cites steam power plants as permitted uses but does not identify any other type of power plant as being permitted, staff requested a determination from the CCSF’s Zoning Administrator during the processing of the Potrero Power Plant Unit 7 application as to whether a gas-fired power plant would be considered a permitted use in the M-2 zoning district. In a letter dated August 8, 2001, the Zoning Administrator determined that the type of power plant proposed by the Potrero applicant (Mirant) is permitted in the M-2 district. The Zoning Administrator further stated that other types of power plants would also be permitted in the M-2 district because the “steam “ reference is outdated due to the fact that this Code section has not been updated in many years.

The site is within a 40-X Height and Bulk Zoning District, which imposes on development a height limit of 40 feet and a floor area ratio (FAR) of 5:1 (meaning a building may have a floor area equal to up to five times the site's square footage). The project’s three exhaust stacks exceed the height criteria for the zoning district; but structures and equipment necessary for industrial operations are exempt as long as they do not contain separate floors [San Francisco Planning Code Section 260(b)(2)(M)].

The SFERP proposal meets the requirements of the industrial zoning district and is exempt from this particular standard.

To ensure that SFERP conforms to the CCSF’s Zoning Code, staff recommends that the Commission require the following conditions of certification:

- **LAND-1** requiring compliance with the design and performance standards for the "M-2" Zoning District;
- **LAND-2** requiring compliance with the City's parking standards; and
- **LAND-3** requiring compliance with the City's outdoor advertising regulations applicable to any close up signs erected (either temporary or permanent).

**San Francisco Design Review**

Design review for industrial projects is conducted by the assigned city planner. It is informal and relies on guidance provided in the General Plan. There is no specific design review checklist applicable to industrial projects. The assigned planner can call on an internal design review committee if deemed appropriate, which has not occurred on this project.

## LOCAL SYSTEM EFFECTS

Where appropriate, the authors have utilized North American Electric Reliability Council (NERC), Western Electric Coordinating Council (WECC), and CAISO Grid Planning Standards regarding outages and system reactive margin criteria to assess the benefits or detriments of the SFERP project.

To assure that energy implications are considered in project decisions, California Environmental Quality Act (CEQA) guidelines require that environmental analyses include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The CEQA guidelines also require that the decision-maker consider “[t]he effects of the project on local and regional energy supplies and on requirements for additional capacity,…” (CEQA, Appendix F).

## NOISE AND VIBRATION

| Federal | Description |
|---|---|
| Federal (OSHA): 29 U.S.C. § 651 et seq. | Protects workers from the effects of occupational noise exposure |
| **State** | |
| Cal-OSHA<br>Cal. Code Regs., tit. 8, §§ 5095-5099 | Protects workers from the effects of occupational noise exposure |
| **Local** | |
| San Francisco Police Code, Article 29, §§ 2901, 2907-2909 | Limits noise emissions from construction and from continuous noise sources |

### FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation. There are no Federal laws governing off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

### STATE

California Government Code section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

The State of California, Office of Noise Control, prepared a Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in

the absence of local noise standards. The Model also contains a definition of a simple tone, or “pure tone,” in terms of one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by five dBA.

The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to the Federal OSHA standards.

## LOCAL

Article 29 of the San Francisco Police Code, entitled Regulation of Noise, is the local ordinance that regulates noise created by construction and operation of a project such as the SFERP (CITYSF 2004a).

### Construction Noise

Section 2907(b) of Article 29 limits the noise from construction equipment to 80 dBA measured at a distance of 100 feet. Impact tools and equipment need not meet this limit, but must be equipped with available intake and exhaust mufflers. In addition, pavement breakers and jackhammers must be equipped with acoustical shields or shrouds.

Section 2908 limits noisy construction work, i.e., noise that exceeds the ambient noise level by 5 dBA or more at the nearest property line, to the hours between 7:00 a.m. and 8:00 p.m., unless a special permit has been issued by the City Director of Public Works.

### Operational Noise

Section 2901.11 of Article 29 sets a criterion whereby any noise that exceeds the ambient noise level by 5 dBA or more, measured at the nearest property line, is considered excessive or offensive, and a violation of the Code. Section 2903 prohibits the creation of any such excessive or offensive noise where it can affect any hospital, or can affect any school or church while that facility is in use.

Section 2909(a) establishes limits for the noise that can be caused at the property line of a district based upon its zoning. Of interest in this case are the following limits:

**Operational Noise Limits Based on Zoning District**

| Zoning District | Noise Limit (dBA) and Time Period | |
|---|---|---|
| | 7 a.m. to 10 p.m. | 10 p.m. to 7 a.m. |
| RM-1, RM-2 | 55 | 50 |
| M-2 | 75 | 75 |

Source: CITYSF 2004a, section 2909(a)

## 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 reliability of this project.

## PUBLIC HEALTH

| Federal | Description |
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| 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.” |
| California Code of Regulations, Title 22, Section 60306 | Requires that whenever a cooling system uses recycled water in conjunction with an air conditioning facility and a cooling tower that creates a mist that could come into contact with employees or members of the public, a drift eliminator shall be used and chlorine, or other, biocides shall be used to treat the cooling system recirculating water to minimize the growth of Legionella and other micro-organisms. |
| **Local** | |
| Bay Area Air Quality Management District Regulation 2, Rule 5 | This rule requires a risk assessment or risk screening analysis to be performed for new or modified facilities that emit one or more toxic air contaminants. |

## SOCIOECONOMICS

The SFERP would be owned and operated by an agency of the City and County of San Francisco (CCSF) and is exempt from paying school impact fees as required by California Government Code section 65995(d). California Government Revenue and Taxation Code 202(a) exempts city property from taxes. There are no applicable Federal, state, or local socioeconomic laws, ordinances, regulations and standards (LORS).

## SOIL AND WATER RESOURCES

| Federal | Description |
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| 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 SFERP, regulation of water quality is administered by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). |
| Resource Conservation and Recovery Act | The Resource Conservation and 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. |
| 40 Code of Federal Regulations, Part 423 | The provisions of this part of the CFR are applicable to discharges resulting from the operation of a generating unit by an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil, or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium. |
| **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. |
| Water Code Section 13524 | Requires that no person shall recycle water or use recycled water for any purpose until water recycling requirements have been established pursuant to this article or a regional board determines that no requirements are necessary. |
| Water Code Section 13552.6 | Specifically identifies the use of potable domestic water for cooling towers, if suitable reclaimed water is available, as a waste or unreasonable use of water. The availability of reclaimed water is determined based on criteria listed in Section 13550 by the State Water Resources Control Board. (SWRCB). Those criteria include provisions that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources. |

| **Local** | |
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| San Francisco Public Health Code, Article 22A | Pursuant to Section 1001 of the San Francisco Public Works Code, the applicant must comply with **Article 22A** of the City and County of San Francisco Public Health Code, formerly known as the Maher Ordinance, which governs development of properties on fill that is known to or is suspected of containing contaminated soils. Under the San Francisco Building Code provisions, applicants for any building or grading permit which involves the disturbance of at least 50 cubic yards of soil shall comply with the requirement for soil sampling and analysis of **Article 22A** of the Public Health Code. This ordinance provides that no building permit application subject to the requirements of this section shall be approved until the Department receives written notification from the Director of Public Health that the applicant has complied with all applicable provisions of **Article 22A** of the Public Health Code, or verification that the requirements have been waived. |
| San Francisco Building Code, Chapter 3 | The San Francisco Building Code (SFBC) adopts Chapter 33 of the Uniform Building Code (UBC) and the California Building Code (CBC), which establishes excavation, grading and erosion control standards. The standards include specifications pertaining to excavation of fills for buildings or structures, grading associated with construction of utilities, and stormwater drainage. |
| San Francisco Public Works Code, Article 4.1 | The discharge of any industrial wastewater to the sewer would normally require approval by the City and County of San Francisco Public Utilities Commission, Bureau of Environmental Regulation and Management for a batch wastewater permit. The permit is issued pursuant to provisions of Sections 120, 124, and 125 of Chapter X (Public Works Code) of Part ll of the San Francisco Municipal Code, **Article 4.1**. The purpose of this Article and the City's industrial waste pretreatment program is to protect human health and the environment by preventing the discharge of pollutants into the sewerage system that would: (i) obstruct or damage the system; (ii) interfere with, inhibit or disrupt treatment facilities and processes, or the processing, use or disposal of sludge; (iii) pass through the sewerage system and contribute to violations of regulatory requirements imposed on the City; or (iv) otherwise harm, or threaten to harm human health or the environment. The permit would limit pollutants in the wastewater to acceptable levels and require periodic |

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| | sampling of the discharge. Permit applications would apply to both normal plant waste discharges and to the disposal for dewatering should the applicant select discharge to the sewer as the method for disposal. |
| San Francisco Public Works Code, Article 22 | **Article 22** requires the installation of dual plumbing and use of recycled water, when it is available, for projects over 40,000 square feet within the reclaimed water area. |
| San Francisco Public Works Order No. 158170 | The Order specifies industrial waste discharge limits on wastewater discharges into the City's sewer system. |
| San Francisco Bay Plan | The San Francisco Bay Conservation and Development Commission (BCDC) is charged with determining how the future development of the Bay should proceed and with protecting the beneficial uses and preserving San Francisco Bay. The policies, recommendations, decisions, advice, and authority of the SWRCB and SFRWQCB are the basis for carrying out BCDC's water quality responsibilities. The San Francisco Bay Plan was adopted by the Commission in 1968 and forwarded to the California Legislature and the Governor in 1969. Part 3, Water Quality, Policy 3 maintains that soil erosion reduction methods should be incorporated into the design and construction of shoreline projects in order for the Bay to be protected from increased sedimentation. |
| **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 22 | Title 22, Division 4, Chapter 15, requires the California Department of Health Services (DHS) review and approve the wastewater treatment systems to ensure they meet tertiary treatment standards allowing use of reclaimed water for industrial processes such as steam production and cooling water. |
| California Code of Regulations, Title 23 | Title 23, Division 3, Chapter 15, requires the Regional Board issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable. And also Chapter 26, Wastewater Treatment Plant |

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| | Classification, Operator Certification, and Contract Operator Registration Program which protects public health and the environment by providing for the effective operation of wastewater and water recycling treatment plants through the certification of wastewater treatment plant operators. |
| Resolution 75-58 | The SWRCB has adopted policies that provide guidelines for water quality protection. The principal policy of the SWRCB that specifically addresses the siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1975 as Resolution 75-58). This policy states that fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. This SWRCB policy requires that power plant cooling water should come from, in order of priority: wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy also includes cooling water discharge prohibitions such as land application. |
| SWRCB Resolution 77-1 | State Water Resources Control Board Resolution 77-1 encourages and promotes reclaimed water use for non-potable purposes. |
| SWRCB Water Quality Order 92-08 | Requires the SWRCB to regulate industrial stormwater discharge from construction projects affecting areas greater than 1 acre to protect state waters. Under Order 92-08 the RWQCB will issue NPDES permits for construction activities based upon an acceptable Storm Water Pollution Prevention Plan (SWPPP) submitted by the applicant. |
| 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 |

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| | 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 1254 | Specifies that the SWRCB in acting upon applications to appropriate water, shall be guided by the policy that domestic use is the highest use and irrigation is the next highest use of water. |
| 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. |
| California Water Code Section 13523 | Requires that a Regional Board, shall prescribe water reuse requirements for water, which is to be used or proposed to be used as recycled water after consultation with and upon receipt of recommendations from the State Department of Health Services, and if it determines such action to be necessary to protect the public health, safety, or welfare. |
| California Water Code Section 13550 | Requires the use of reclaimed water for industrial purposes subject to reclaimed water being available and upon a number of criteria including: provisions that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources. |
| California Water Code Section 13552.8 | States that any public agency may require the use of reclaimed water in cooling towers if reclaimed water is available, meets the requirements set forth in Section 13550, that there will be no adverse impacts to any existing water right, and that if public exposure to cooling tower mist is possible, appropriate mitigation or control is provided. |
| SWRCB Resolution 88-63 | The Regional Water Quality Control Boards (Regional Boards) shall assure that the beneficial uses of municipal |

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| | and domestic supply (MUN) are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation. All surface and groundwater of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of certain defined surface and groundwater suitable for exception as a source of drinking water. |
| 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. |
| 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. |
| Recycling Act of 1991 (Water Code 13575 et. seq) | States that retail water suppliers, reclaimed water producers, and wholesalers should promote the substitution of reclaimed water for potable and imported water in order to maximize the appropriate cost-effective use of reclaimed water in California. |
| Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et seq) | 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

| **Aviation Safety** | |
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| **Federal** | **Description** |
| Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable 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 Communication (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. |
| 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. |

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| **Aviation Safety** | |
| 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** | |
| **State** | |
| 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. |
| **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. |
| GO-128, CPUC, “Rules for Underground Electric Line Construction. | Covers required clearances, grounding techniques, maintenance, and inspection requirements. |

## TRANSMISSION SYSTEM ENGINEERING

| Federal | Description |
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| North American Electric Reliability Council (NERC Planning Standards | Principles designed to insure the adequacy and security of the transmission network |
| National Electric Safety Code 1999 (NESC) | Provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation |
| **Regional** | |
| Western Electricity Coordinating Council (WECC) Reliability Criteria | Insure continuity of load service and protection of the interconnected grid |
| **State** | |
| California Public Utilities Commission (CPUC) General Orders (GO) 95 and 128 | Rules for overhead and underground line construction |
| CA ISO Reliability Criteria | Incorporate NERC and WECC standards and some additional requirements |

| Federal | Description |
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| Title 49, Code of Federal Regulations (CFR), Sections 171-177; Sections 350-399 & Appendices A-G, Federal Motor Carrier Safety Regulations. | Governs the transportation and definition of hazardous materials, the types of materials defined as hazardous; criteria and regulations for the safe transportation of hazardous materials. |
| **State** | |
| California Street and Highways Code (S&HC), Sections 660, 670, 1450, 1460 et seq., 1470, and 1480.<br>California Vehicle Code (CVC) Sections 31303-31309 | Regulates right-of-way encroachment and granting of permits for encroachments on state and county roads.<br><br>The CVC also regulates the highway transportation of hazardous materials, routes used, and restrictions including the mandate that the materials be transported on state or interstate highways that offer the shortest overall transit time possible. |
| S & HC Sections 13369, 15275,2500-2505 and 15278, 25160 ET SEQ; 31303-31309, 31600-31620; 32000-32053, 32100-32109;3400-3421;34500,34501, 34510-11<br><br>S & HC Sec. 117 & 660 &72, California Vehicle Code (CVC) Sec. 35780, ET SEQ; 35550-35559 | Addresses licensing of drivers required for operation of particular types of vehicles, including those transporting hazardous, explosive, flammable, and/or combustible material; such as ammonia; safety requirements; hazardous material transport routes.<br><br>Applicable codes also regulate the transportation of explosive materials, the licensing of carriers of hazardous materials including noticing requirements, and establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. CVC Section 32105 requires shippers of inhalation or explosive materials to contact the CHP and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook specifying approved routes.<br><br>Additional codes establish special requirements for transporting flammable and combustible liquids over public roads and highways, regulate the safe operation of vehicles, including those used to transport hazardous materials, and require permits to transport oversized loads on county roads. The CVC also requires permits for any construction, |

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| | maintenance, or repair involving encroachment on state highway rights-of way. A permit is required to transport oversized or excessive loads over state highways. |
| California State Government Code Section 65302 a&b | Requires permits for transport of oversized loads on county roads and state highways; requirements for encroachment permits on state highways; CALTRANS specific weight/load limitations for all state and local roadways.<br><br>Requires cities and counties to adopt a general plan to guide development, including a mandatory circulation element.<br><br>All construction in public right-of-way needs to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans, 1996). |
| California Department of Transportation (Caltrans) | Weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in the CVC Sections 35550 to 35559. |
| **Local** | |
| City/County of San Francisco General Plan Transportation Element | The CCSF Transportation Element of the General Plan is required by State law.<br><br>The Transportation Element has several objectives and policies pertinent to the proposed power plant such as utilizing public transit whenever possible, designating expeditious routes for trucks to avoid conflicts with automobile traffic, encouraging flexible work schedules to reduce peak period congestion, and providing off-street facilities for freight loading and service vehicles on the site of new buildings sufficient to meet the demands generated by the intended uses. |
| Chapter 4, San Francisco Congestion Management Plan | The San Francisco County Transportation Authority is the designated Congestion Management Agency for San Francisco, and is responsible for developing and administering the Congestion Management Plan (CMP). If a project degrades intersections operating at a LOS of A, B, C, or D to E or F, or E to F, the CMP requires mitigation. |

## VISUAL RESOURCES

| Federal | Description |
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| | The proposed project is not located on Federally administered public lands and is not subject to Federal regulations pertaining to visual resources. |
| **State** | |
| | There are no officially designated State Scenic Highways or Scenic Routes within the project view- shed. There are no state regulations pertaining to scenic resources applicable to the project. |
| **Local** | |
| *City and County of San Francisco General Plan*<br><br>• Recreation and Open Space Element – Shoreline (Objective 3)<br><br>• Urban Design Element<br><br>• Central Waterfront Area Plan<br><br>• Urban Design (Objective 10) | Assure that new development adjacent to the shoreline capitalizes on its unique waterfront location, considers shoreline land use provisions, improves visual and physical access to the water and conforms to urban design policies.<br><br>The Urban Design Element is concerned both with development and with preservation. It is a concerted effort to recognize the positive attributes of the city, to enhance and conserve those attributes, and to improve the living environment where it is less than satisfactory.<br><br>The overall goal of this Plan is to create a physical and economic environment conducive to the retention and expansion of San Francisco's industrial and maritime activities. The purpose of this Area Plan is to guide the future development of the Central Waterfront in a manner serving the varying needs and interests of San Francisco. |
| *San Francisco Planning Code*<br><br>• M-2 (Heavy Industrial) District | This district is the least restricted as to use, and is located at the eastern edge of the City, separated from residential and commercial areas. The heavier industries are permitted, with fewer requirements as to screening and enclosure than in M-1 Districts, but many of |

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| | these uses are permitted only as conditional uses or at a considerable distance from Residential Districts. (Amended by Ord. 443-78, App. 10/6/78) |

## WASTE MANAGEMENT

| Federal | Description |
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| 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:<br>• Record keeping practices which identify quantities of hazardous wastes generated and their disposition,<br>• Labeling practices and use of appropriate containers,<br>• Use of a manifest system for transportation, and<br>• Submission of periodic reports to the Environmental Protection Agency (EPA) or authorized state agency. |
| Title 40, Code of Federal Regulations, part 260 | These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed. |
| **State** | |
| California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended) | This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency (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 San Francisco Department of Public Health enforces this Act. |
| Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal) | These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions. |

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| Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards) | These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the Federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous waste must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established and are enforced by the Cal-EPA Department of Toxic Substances Control. |
| Title 22, California Code of Regulations, §67100.1 et seq. | (Hazardous Waste Source Reduction and Management Review.)These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period. |
| The Asbestos Airborne Toxic Control Measure | The California Air Resources Board (CARB) adopted the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations which became effective in the Bay Area Air Quality Management District (BAAQMD) in 2002. The ATCM requires specific mitigation measures to prevent off-site migration of asbestos-containing dust. The BAAQMD enforces these provisions. |
| Title 8, California Code of Regulations, §§1529 and 5208 | These are regulations requiring the proper removal of asbestos containing materials and are enforced by Cal-OSHA. |
| **Local** | |
| Article 6 of the San Francisco Health Code | This Article controls solid non-hazardous waste production during construction and operation of the project and is enforced by the San Francisco Department of Public Health (SFDPH). The SFDPH has the responsibility for administration and enforcement of waste management laws regarding solid non-hazardous and hazardous wastes at the |

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| | proposed energy center. Recycling of non-hazardous wastes is governed by the San Francisco Department of the Environment. |
| Article 4.1 of the San Francisco Public Works Code and the San Francisco Department of Public Works Order No. 158170 | Regulate quantity and quality of industrial discharge to the combined sewer system, and specify requirements for discharge of non-hazardous wastewater. |
| Article 22A of the San Francisco Health Code | Enforced by the SFDPH and requires preparation of a site history report, implementation of soil investigation to evaluate presence of hazardous wastes in the soil, preparation of soil analysis report, site mitigation report, and certification report prior to excavation activities. |
| BAAQMD regulation 11-2 | Includes notification requirements for demolition projects, and must be complied with before a demolition permit is granted. |
| The San Francisco Building Code Chapter 34, Section 3407 | Contains requirements for handling of lead-based paint on the exterior of buildings or steel structures during demolition. This code is enforced by the San Francisco Department of Building Inspection. |
| California Fire Code | Enforced by the local Fire Department, and includes a requirement that businesses obtain permits for the use and storage of specified hazardous materials. This permit must be obtained before storing regulated hazardous wastes at the project site. |

## WORKER SAFETY AND FIRE PROTECTION

| Federal | Description |
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| 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 §§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 §§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. |
| 24 CCR section 3, et seq. | Incorporates the current addition of the Uniform Building Code. |
| Health and Safety Code §25500, et seq. | Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility. |
| Health and Safety Code §§25500 to 25541 | Requires a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility |
| **Local** | |
| 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. The City of San Francisco adopted the |

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| | California Fire Code (CFC) into its municipal code in 1999, and is the administering agency for the CFC standards. |
| California Building Code Title 24, California Code of Regulations §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. The Uniform Building Code, the 2001 California Building Standards Code, and the San Francisco Building Code are enforced by the City and County of San Francisco, San Francisco Department of Building Inspection (SFPUC 2005a Sections 8.15.2 and 8.15.6). |
| Uniform Fire Code, 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**

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| **IN THE MATTER OF:**<br><br>**APPLICATION FOR CERTIFICATION FOR THE *SAN FRANCISCO ELECTRIC RELIABILITY PROJECT*** | **DOCKET NO. 04-AFC-1** |

# EXHIBIT LIST

**EXHIBIT 1** Application for Certification for San Francisco Electric Reliability Project (Docket No. 04-AFC-1), Volume 2, Appendices 5, 6, 8.2A, 8.2B, 8.3C, 8.3D, 8.8A, dated March 2004. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 2** Supplement in Response to Data Adequacy Comments on the Application for Certification for the San Francisco Electric Reliability Project, dated April 16, 2004. Sponsored by Applicant; portions admitted into evidence on April 27 and May 22, 2006.

**EXHIBIT 3** Applicant's Response to CEC Staff Data Requests, Set 1A, dated July 6, 2004. Responses to Data Requests 1 through 11. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 4** Applicant's Response to CEC Staff Data Requests, Set 1B, dated July 12, 2004. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 5** Applicant's objections in response to Intervenor Sarvey's June 24, 2005 Data Requests, dated July 5, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 6** Applicant's Response to CEC Staff Data Requests, Set 2A, dated October 12, 2004. Sponsored by Applicant; received into evidence on May 31, 2006.

**EXHIBIT 7** Applicant's Response to CEC Staff Data Requests, Informal Set 1, Revised, dated August 2, 2004. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 8** Applicant's Response to CEC Staff Data Requests, Informal Set 2, dated August 20, 2004. Sponsored by Applicant; received into evidence on May 31, 2006.

**EXHIBIT 9** Applicant's Response to CEC Staff Data Requests, Informal Set 3, dated August 20, 2004. Sponsored by Applicant; portions received into evidence on April 27, May 22, and May 31, 2006.

**EXHIBIT 10** Applicant's Response to CEC Staff Data Requests, Informal Set 4, dated August 27, 2004. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 11** Applicant's Response to CEC Staff Data Requests, Informal Set 5, dated September 20, 2004. Sponsored by Applicant; received into evidence on May 31, 2006.

**EXHIBIT 12** Applicant's Response to San Francisco Community Power Data Requests, Set 1, dated August 18, 2004, Responses to Data Requests 6, 8 and 9. Sponsored by Applicant; portions received into evidence on April 27 and May 31, 2006.

**EXHIBIT 13** Applicant's Final Staff Assessment Comments, Set 2, dated March 24, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 14** Application for Determination of Compliance and Authority to Construct, filed with the BAAQMD, dated March 15, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 15** Supplement A to the Application for Certification for the San Francisco Electric Reliability Project, Volumes 1 and 2, dated March 24, 2005. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 16** Supplement B to the Application for Certification for the San Francisco Electric Reliability Project, dated January 11, 2006. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 17** Amendment to the Project Description, Vegetated Swale, dated November 18, 2005. Sponsored by Applicant; portions received into evidence on April 27 and May 22, 2006.

**EXHIBIT 18** Amendment to the Project Description, Process and Cooling Water Supply, dated December 20, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 19** Applicant's Response to CEC Staff Data Requests, Set 3A, dated June 3, 2005. Sponsored by Applicant; portions received into evidence on April 27, May 22, and May 31, 2006.

**EXHIBIT 20** Applicant's Further Responses to Data Requests, Set 3B, dated June 22, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 21** Applicant's Response to CEC Staff Data Requests, Set 3C, dated July 19, 2005. Sponsored by Applicant; portions received into evidence on April 27 and May 22, 2006.

**EXHIBIT 22** Applicant's Response to CEC Staff Data Requests, Set 3D, dated September 13, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 23** Applicant's Response to CEC Staff Data Requests, Set 3E, dated October 6, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 24** Applicant's Response to CEC Staff Data Requests, Set 3F, dated January 11, 2006. Sponsored by Applicant; portions received into evidence on May 22 and May 31, 2006.

**EXHIBIT 25** Applicant's Response to CARE Data Requests, Set 3, dated June 9, 2005. Sponsored by Applicant; portions received into evidence on April 27 and May 31, 2006.

**EXHIBIT 26** Applicant's Response to CARE Data Requests, Set 3B, dated June 22, 2005. Sponsored by Applicant; received into evidence on May 31, 2006.

**EXHIBIT 27** Applicant's Response to Sarvey Data Requests, Set 1A, dated July 25, 2005. Sponsored by Applicant; portions received into evidence on April 27, May 22, and May 31, 2006.

**EXHIBIT 28** Applicant's Response to Sarvey Data Requests, Set 1B, dated October 6, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 29** Applicant's Response to CEC Staff's Informal Data Requests, Set 6A, dated July 11, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 30** Applicant's Response to CEC Staff's Informal Data Requests, Set 6B, dated August 10, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 31** Applicant's Response to CEC Staff's Informal Data Requests, Set 6C, dated August 25, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 32** Applicant's Response to CEC Staff's Informal Data Requests, Set 6D, dated October 14, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 33** Applicant's Response to CEC Staff's Informal Data Requests, Set 6D, Addendum, dated October 26, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 34** Applicant's Response to CEC Staff's Informal Data Requests, Set 7A, dated July 19, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 35** Applicant's Response to CEC Staff's Informal Data Requests, Set 8, dated October 7, 2005. Sponsored by Applicant; received into evidence on April 27, 2006.

**EXHIBIT 36** Applicant's Response to CEC Staff's Informal Data Requests, Set 9, dated January 13, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 37** Applicant's Response to CEC Staff's Informal Data Requests, Set 9B, dated January 19, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 38** Applicant's "Air Quality Mitigation and Community Benefits Plan", dated August 4, 2005. Sponsored by Applicant; portions received into evidence on May 22 and May 31, 2006.

**EXHIBIT 39** Applicant's Comments on the Preliminary Staff Assessment, Set 1, dated October 12, 2005. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 40** Applicant's Comments on the Preliminary Staff Assessment, Set 2, dated October 31, 2005. Sponsored by Applicant; portions received into evidence on April 27, May 1, May 22, and May 31, 2006.

**EXHIBIT 41** Applicant's Comments on the Preliminary Staff Assessment, Set 3, dated November 11, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 42** Applicant's Draft Field Investigation Summary Report, dated March 30, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 43** Applicant's Comments on the Preliminary Staff Assessment, Set 4, Revised, dated December 30, 2005. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 44** Applicant's Final Field Sampling Plan, dated February 14, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 45** Applicant's Comments on the Final Staff Assessment, Set 1, dated March 17, 2006. Sponsored by Applicant; portions received into evidence on April 27 and May 22, 2006.

**EXHIBIT 46** Final Staff Assessment, dated February 17, 2006. Sponsored by Staff; portions received into evidence on April 27, May 1, and May 22, 2006.

**EXHIBIT 47** Staff's Supplemental Testimony on the Topics of Waste Management and Soils and Water, dated April 10, 2006. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 48** Errata to Final Staff Assessment's Air Quality and Cultural Resources Sections, dated April 13, 2006. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 49** Errata to Soil and Water Condition of Certification 13, dated April 17, 2006. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 50** Testimony of Lawrence Tobias, California Independent System Operator, dated March 13, 2006. Sponsored by Staff; received into evidence on May 1, 2006.

**EXHIBIT 51** Applicant's written testimony and accompanying declarations, dated April 17, 2006. Sponsored by Applicant; received into evidence on May 1, 2006.

**EXHIBIT 52** Resumes of Anne Eng and Jim Bushnell, submitted on April 17, 2006. Submitted by Applicant; not moved into evidence.

**EXHIBIT 53** Preliminary Determination of Compliance issued by the Bay Area Air Quality Management District, dated July 26, 2005. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 54** Final Determination of Compliance issued by the Bay Area Air Quality Management District, dated November 22, 2005. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 55** Revised Final Determination of Compliance issued by the Bay Area Air Quality Management District, dated January 19, 2006. Sponsored by Staff; received into evidence on May 22, 2006.

**EXHIBIT 56** Collection of "Air Quality Correspondence" (19 items excluding Determinations of Compliance), submitted as "Appendix C" to Applicant's April 17, 2006 filing (Exhibit 51). Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 57** Testimony and Resume of Lynne Brown, dated April 17, 2006. Sponsored by Intervenor CARE; received into evidence on May 31, 2006.

**EXHIBIT 58** Resumes of Michael Boyd, Bill Powers, P.E., Robert Sarvey, Kenneth Smallwood, and Clifton Smith, submitted on April 17, 2006. Submitted by Intervenor CARE; not moved into evidence.

**EXHIBIT 59** Reporter's transcript from January 12, 2004 California Public Utilities Commission hearing, pages 373–471. Sponsored by Intervenor CARE; marked for identification purposes only on May 31, 2006, and admission into evidence denied.

**EXHIBIT 60** Resolution E-3984 of the California Public Utilities Commission, dated March 15, 2006. Submitted by Intervenor CARE; not moved into evidence.

**EXHIBIT 61** Seismic Hazard Zones map of the City and County of San Francisco, dated November 17, 2001. Submitted by Intervenor CARE; not moved into evidence.

**EXHIBIT 62** Preliminary comments on remedial investigation of existing contamination. Submitted by Intervenor CARE; not moved into evidence.

**EXHIBIT 63** City and County of San Francisco Prehearing Conference Statement for the Potrero 7 Power Plant (Docket No. 00-AFC-04), dated April 16, 2002. Sponsored by Intervenor Sarvey; admission denied on May 31, 2006.

**EXHIBIT 64** City and County of San Francisco comments on the Preliminary Staff Assessment for the Potrero 7 Power Plant (Docket No. 00-AFC-04), dated July 2, 2001. Sponsored by Intervenor Sarvey; admission denied on May 31, 2006.

**EXHIBIT 65** Memorandum from John Seitz to David Howekamp re: use of emission reduction credits, dated August 26, 1994. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 66** Memorandum from Toby Levine to Byron Rhett re: Potrero Power Plant impact identification and mitigation proposals, dated June 29, 2001. Sponsored by Intervenor Sarvey; admission denied on May 31, 2006.

**EXHIBIT 67** Collection of Comments relating to the Potrero Power Plant (Docket No. 00-AFC-04). Sponsored by Intervenor Sarvey; admission denied on May 31, 2006.

**EXHIBIT 68** Monitoring Data from the BAAQMD website for San Francisco for November and December 2004, as well as January and February 2005. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 69** Projected Emission Inventory for Particulate Matter <2.5 microns, 2005 Almanac data. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 70** Table A-1 reflecting emission controls required for combined cycle and cogeneration power plant gas-fired turbines, undated, designated as “Appendix A” in Intervenor Sarvey’s April 17, 2006 filing. Submitted by Intervenor Sarvey; not moved into evidence.

**EXHIBIT 71** Table B-1 reflecting emission source test results for combined-cycle and cogeneration power plant gas turbines, undated, designated as “Appendix B” in Intervenor Sarvey’s April 17, 2006 filing. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 72** Table C-1 reflecting Area Designations for state PM2.5 ambient air quality standard, undated, designated as "Appendix C" in Intervenor Sarvey's April 17, 2006 filing. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 73** Collection of comment letters (9 items) re: emission reduction technologies, various dates in April 2004, designated as "Appendix D" in Intervenor Sarvey's April 17, 2006 filing. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 74** Air Quality Testimony of Powers and Sarvey, submitted on April 17, 2006. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 75** Environmental Justice Testimony of DaCosta and Sarvey, submitted on April 17**,** 2006. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 76** Sarvey Purpose, Need and Environmental Justice testimony submitted on April 17, 2006. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 77** Sarvey Hazardous Materials Testimony, submitted on April 17, 2006. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 78** California Air Resources Board Report to the Legislature on gas-fired power plant $NQ_x$ emission controls and related environmental impacts, dated May 2004. Submitted by Intervenor Sarvey; not moved into evidence.

**EXHIBIT 79** Resume of Francisco DaCosta, submitted on April 17, 2006. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 80** Comments from Babcock & Brown re: Docket No. 03-IEP-01-Transmission, dated August 18, 2004. Submitted by Intervenor Sarvey; not moved into evidence.

**EXHIBIT 81** Sheet entitled "Comments on DWR's Revised Analysis," dated July 30, 2003. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 82** Graphics of power point presentation of the City of San Francisco's Public Utilities Commission, dated June 11, 2004. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 83** Applicant's Responses to San Francisco Community Power Data Requests, Set 1, dated August 18, 2004. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 84** Letter to Bill Pfanner from Mark Prios, Department of Toxic Substances Control, dated March 20, 2006. Sponsored by Intervenor Sarvey; received into evidence on April 27, 2006.

**EXHIBIT 85** ***Number not used.***

**EXHIBIT 86** Memorandum to ISO Board of Governors from Gary DeShazo re: Trans Bay HVDC Cable Project, dated September 2, 2005. Submitted by Intervenor Sarvey; marked for identification purposes only on May 1, 2006.

**EXHIBIT 87** Electronic mail and Attachments from Lawrence Tobias to Bill Pfanner re: SFERP hearings, dated September 22, 2005. Submitted by Intervenor Sarvey; marked for identification purposes only on May 1, 2006.

**EXHIBIT 88** Applicant's Supplemental Testimony re: Soil Contamination: Soil and Water/Waste Management, dated May 1, 2006. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 89** ERRATA, dated May 17, 2006, to Applicant's May 1, 2006 Supplemental Testimony. Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 90** News Release from City Attorney, dated July 21, 2005. Submitted by Intervenor Sarvey; marked for identification purposes only on May 22, 2006.

**EXHIBIT 91** Document entitled "Revised Estimates of Soil Loss by Water and Wind Erosions" (undated replacement to Table 8.9-3 in Exhibit 15.) Sponsored by Applicant; received into evidence on May 22, 2006.

**EXHIBIT 92** Excerpt consisting of pages D.7 and 166 from Southern Waterfront SEIR. Submitted by Intervenor Sarvey; marked for identification purposes only on May 22, 2006.

**EXHIBIT 92A** Excerpt from Southern Waterfront SEIR entitled "Appendix D, Air Quality," pages 1 through 8. Submitted by Applicant; marked for identification purposes only on May 31, 2006.

**EXHIBIT 92B** Southern Waterfront SEIR, dated February 15, 2001. Submitted by Intervenor Sarvey; marked for identification purposes only on May 31, 2006. (Copy not provided.)

**EXHIBIT 92C** Figure 2 (Revised) from Southern Waterfront SEIR. Submitted by Intervenor Sarvey; marked for identification purposes only on May 31, 2006.

**EXHIBIT 93** Document entitled "AQ-SCII Revised," undated. Submitted by Intervenor Sarvey; marked for identification purposes only on May 31, 2006.

**EXHIBIT 94** Air Resources Board "Guidance for Power Plant Siting and Best Available Control Technology," issued September 1999. Sponsored by Intervenor Sarvey; received into evidence on May 31, 2006.

**EXHIBIT 95** Declaration of Jerry Salamy, dated May 22, 2006. Sponsored by Applicant; received into evidence on May 31, 2006.

**EXHIBIT 96** City of San Francisco Electric Resource Plan, revised, dated December 2002. Submission requested by Intervenor Sarvey; marked for identification purposes only on May 31, 2006.

**EXHIBIT 97** Testimony and Resume of Martin Homec, undated. Sponsored by Intervenor CARE; received into evidence on May 31, 2006.

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

| | |
|---|---|
| **APPLICATION FOR CERTIFICATION FOR THE SAN FRANCISCO *ELECTRIC* RELIABILITY POWER PROJECT** | **Docket No. 04-AFC-1**<br>**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. 04-AFC-01
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
**docket@energy.state.ca.us**

**APPLICANT**

Barbara Hale, Power Policy Manager
San Francisco Public Utilities Commission
1155 Market Street, 4th Floor
San Francisco, CA 94102
**BHale@sfwater.org**

Applicant Project Manager
Karen Kubick
SF Public Utilities Commission
1155 Market St., 8th Floor
San Francisco, CA 94103
**kkubick@sfwater.org**

**APPLICANT'S CONSULTANTS**

Steve De Young
De Young Environmental Consulting
4155 Arbolado Drive
Walnut Creek, CA 94598
**steve4155@astound.net**

John Carrier
CH2MHill
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833-2943
**jcarrier@ch2m.com**

**COUNSEL FOR APPLICANT**

Jeanne Sole
San Francisco City Attorney
City Hall, Room 234
1 Dr. Carlton B. Goodlet Place
San Francisco, CA 94102-4682
**Jeanne.sole@sfgov.org**

Emilio Varanini III
Special Counsel
California Power Authority
717 K Street, Suite 217
Sacramento, CA 95814
**drp.gene@spcglobal.net**

**INTERESTED AGENCIES**

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
**esaltmarsh@eob.ca.gov**

Donna Jordan
CA Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630
**djordan@caiso.com**

Dept. of Water Resources
SERS
Dave Alexander
3310 El Camino Avenue, Ste. 120
Sacramento, CA 95821-9001
**dalexan@water.ca.gov**

**INTERVENORS**

Jeffrey S. Russell
VP West Region Operations
Mirant California, LLC
P.O. Box 192
Pittsburg, California 94565
**Jeffrey.russell@mirant.com**

Mark Osterholt
Mirant California, LLC
P.O. Box 192
Pittsburg, California 94565
**mark.osterholt@mirant.com**

San Francisco Community Power
c/o Steven Moss
2325 Third Street # 344
San Francisco, CA 94107
**steven@sfpower.org**

Californians for Renewable Energy, Inc. (CARE)
Michael E. Boyd, President
5439 Soquel Drive
Soquel, California 95073
**michaelboyd@sbcglobal.net**

Lynne Brown – Member, CARE
Resident, Bayview Hunters Point
24 Harbor Road
San Francisco, California 94124
**L_brown123@yahoo.com**

Robert Sarvey
501 West Grantline Road
Tracy, CA 95376
**sarveyBob@aol.com**

Michael J. Carroll
Latham & Watkins LLP
650 Town Center Drive, Suite 2000
Costa Mesa, CA 92626
**michael.carroll@lw.com**

Potrero Boosters Neighborhood Association
Dogpatch Neighborhood Association
Joseph Boss
934 Minnesota Street
San Francisco, CA 94107
**joeboss@joeboss.com**

**ENERGY COMMISSION**

JAMES D. BOYD, Commissioner
Presiding Member
jboyd@energy.state.ca.us
lbeckstr@energy.state.ca.us

JOHN L. GEESMAN, Commissioner
Associate Member
jgeesman@energy.state.ca.us

Stan Valkosky
Chief Hearing Officer
svalkosk@energy.state.ca.us

Gary Fay
Hearing Officer
gfay@energy.state.ca.us
mread@energy.state.ca.us

Bill Pfanner
Project Manager
bpfanner@energy.state.ca.us

Margret J. Kim
Public Adviser
pao@energy.state.ca.us

Dick Ratliff
Staff Counsel
dratliff@energy.state.ca.us

## DECLARATION OF SERVICE

I, _____ , declare that on _____ 2006, I deposited copies of the attached_____, in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

***OR***

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

_____
*[signature]*