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HUNTINGTON BEACH ENERGY PROJECT

Presiding Member's Proposed Decision



CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown Jr, Governor

September, 2014
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**CALIFORNIA
ENERGY COMMISSION**

1516 Ninth Street
Sacramento, CA 95814

http://www.energy.ca.gov/sitingcases/huntington_beach_energy/index.html

COMMISSIONERS-

ANDREW McALLISTER
Commissioner, Presiding Member

KAREN DOUGLAS
Commissioner, Associate Member

SUSAN COCHRAN
Hearing Adviser

DISCLAIMER

This report was prepared by the California Energy Commission Huntington Beach Energy Project AFC Committee as part of Huntington Beach Energy Project, Docket No. 12-AFC-02. The views and recommendations contained in this document are not official policy of the Energy Commission until the report is adopted at an Energy Commission Business Meeting.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

The Committee hereby submits its Presiding Member's Proposed Decision for the Huntington Beach Energy Project, (Docket Number 12-AFC-02). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code 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: September 2, 2014, at Sacramento, California.

Original Signed By:

ANDREW McALLISTER
Commissioner and Presiding Member
Huntington Beach Energy Project Committee

Original Signed By:

KAREN DOUGLAS
Commissioner and Associate Member
Huntington Beach Energy Project Committee

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I. INTRODUCTION

A. SUMMARY OF THE PROPOSED DECISION

This Decision contains the rationale of the California Energy Commission (Energy Commission) in determining that the proposed Huntington Beach Energy Project (HBEP) will, as mitigated, have no significant impacts on the environment and comply with all applicable laws, ordinances, regulations, and standards (LORS). This Decision 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 record¹ supporting our findings and conclusions, and specified the measures required to ensure that the HBEP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The Energy Commission has exclusive jurisdiction to license this project and is considering the proposal under a review process established by Public Resources Code section 25540.6.

On June 27, 2012, AES Southland Development, LLC, (the Applicant) submitted an Application for Certification (AFC) seeking approval from the Energy Commission to develop the HBEP, a natural-gas-fired, combined cycle and air-cooled electrical power plant facility proposed in the city of Huntington Beach, Orange County. On August 9, 2012, the Energy Commission found the AFC to be “data adequate”, thus starting the Energy Commission’s formal review of the proposed project. The Energy Commission also assigned a Committee of two Commissioners to conduct proceedings on the AFC. (Pub. Res. Code §25211; Cal. Code Regs., tit. 20, §1204.)

The 28.6-acre HBEP would be constructed and operated within the existing footprint of the still-operating Huntington Beach Generation Station (HBGS). HBEP construction will require the removal of the existing HGBS Units 1, 2, and 5. HBGS Units 3 and 4 were licensed through the Energy Commission (CEC; 00-AFC-13C) and demolition of these units is authorized under that license and will proceed irrespective of the HBEP. Therefore, demolition of existing HGBS Units 3 and 4 is not part of the HBEP project definition. However, to ensure a comprehensive review of potential project impacts, the demolition of existing HBGS Units 3 and 4 is included in the cumulative impact assessment.

¹ The Reporter’s Transcripts of the evidentiary hearings are cited as “date of hearing RT page:line-page:line. For example: 07/21/14 RT 77:14-78:16. 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.

HBEP will reuse existing onsite potable water, natural gas, stormwater, process wastewater, and sanitary pipelines and electrical transmission facilities. No offsite linear developments are proposed as part of the project. The existing HBGS units use ocean water for cooling. The new HBEP facility would use evaporative air cooling, eliminating the existing HBGS generators' daily need for large quantities of ocean water for purposes of once-through cooling. HBEP will use potable water, provided by the city of Huntington Beach, for construction, operational process, and sanitary uses, but at substantially lower volumes than historically used by the existing generating units at the HBGS. The minimal industrial, wash-down and associated water necessary for HBEP's industrial steam and landscape irrigation would generally be 115 acre-feet per year (AFY), but could be a maximum of 134AFY. This Decision analyzes the potential for the project to use treated effluent for cooling purposes, but finds them to be economically infeasible and environmentally unsound. For more discussion of the use of reclaimed water for HBEP cooling, please see the **SOIL & WATER RESOURCES** section of this Decision.

During HBEP operation, stormwater and process wastewater will be discharged to a retention basin and then ultimately to the Pacific Ocean via an existing outfall. Sanitary wastewater will be conveyed to the Orange County Sanitation District via the existing city of Huntington Beach sewer connection.

Two, 230-kilovolt (kV) transmission interconnections will connect both HBEP power blocks to the existing Southern California Edison (SCE) 230-kV switchyard that is located on a separate parcel within the existing HBGS site. See Section III (D), **TRANSMISSION SYSTEM ENGINEERING**, for a discussion of the HBEP interconnection to the existing SCE 230-kV switchyard.

If approved by the Energy Commission, HBEP demolition and construction is proposed to take approximately 90 months to complete, as shown in **Introduction Table 1**.

**Introduction - Table 1
Demolition/Construction Activity**

DEMOLITION/CONSTRUCTION ACTIVITY	TIMELINE
Demolish Unit 5, fuel tanks and Units 3 & 4 stack	Q1 2015 – Q2 2016 (15 months)
Construction Power Block 1	Q3 2016 – Q4 2018 (30 months)
Commercial Operation Power Block 1	Q4 2018 or Q1 2019
Demolish Units 3 & 4	Q1 2016 – Q1 2018 (27 months)
Construction Power Block 2	Q3 2018 – Q2 2020 (28 months)
Commercial Operation Power Block 2	Q2 or Q3 2020
Demolish Units 1 & 2	Q4 2020 – Q3 2022 (24 months)
Construction of buildings 33 & 34	Q3 2021 – Q3 2022 (14 months)

The capital cost for the project (i.e., demolition of Units 1, 2, and 5 and construction of Power Blocks 1 and 2) is estimated to exceed \$500 million. (Ex. 2000, p. 4.8-27.) The number of workers required for the construction and demolition would peak during months 82 and 83 with 236 workers. During operations, HBEP would employ 33 workers. (Ex. 2000, pp. 4.8-9.)

B. SITE CERTIFICATION PROCESS

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

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

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

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

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining necessary technical information. During this time, Commission staff sponsors public workshops at which intervenors, agency representatives, and members of the public meet with Staff and the Applicant to discuss, clarify, and negotiate pertinent issues. The Commission staff also prepares a Preliminary Staff Assessment (PSA) that includes staff's technical and environmental impact analyses. Additional public outreach occurs on the PSA.

Following publication of the PSA, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order to schedule formal Evidentiary Hearings. At the Evidentiary Hearings, all formal parties, including intervenors, may present sworn testimony, which is subject to questioning by the other parties and the Committee. Members of the public may offer oral or written comments at these hearings. Evidence submitted at the hearings provides the basis for the Committee's analysis and recommendations to the full Commission.

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

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

C. PROCEDURAL HISTORY

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

On June 27, 2012, AES Southland Development, LLC, (the Applicant) submitted an AFC seeking approval from the California Energy Commission to develop the HBEP. On August 9, 2012, the Energy Commission accepted the AFC as "date adequate" and assigned a Committee of two Commissioners to conduct proceedings, thus starting the Energy Commission's formal review of the proposed project.

The formal parties included the Applicant, Energy Commission staff (Staff), and Intervenors Jason Pyle² and Monica Rudman.

On August 21, 2012, the Committee issued its "Notice of Public Site Visit and Informational Hearing." The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the HBEP. The Public Adviser's Office also advertised the public hearing and site visit and distributed information to local officials and sensitive receptors surrounding the project site.³

On September 10, 2012, the Committee conducted a site visit to tour the proposed HBEP site and then convened a public Environmental Scoping Meeting and Informational Hearing at the Central Library in Huntington Beach, California. At that

² While Mr. Pyle was formally an intervenor, he did not present any evidence nor participate in the evidentiary hearings on the HBEP.

³ Sensitive receptors are people or institutions with people that are particularly susceptible to illness, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.

event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the project, described the Commission's review process, and explained opportunities for public participation.

On October 1, 2012, the Committee issued its initial Scheduling Order. The Committee Schedule was based on both the Applicant's and Staff's proposed schedules and related discussion at the Informational Hearing. The schedule contained a list of events that must occur in order to complete the certification process. The Committee issued several revised schedules during the course of discovery.

In the course of the review process, Staff conducted several publicly noticed workshops. The first workshop was held on November 14, 2012, at the Eader Elementary School Multipurpose Room in Huntington Beach, California. Topics discussed included air quality, public health, biology, noise, and the existing synchronous condensers at the HBGS. Participating agencies in the workshop included Orange County, several Huntington Beach agencies and the South Coast Air Quality Management District (SCAQMD). Several members of the public were also present.

On November 20, 2013, Staff conducted a second publicly noticed workshop at the Huntington Beach Central Library. Topics discussed included air quality, cultural resources, hazardous materials management, land use, traffic and transportation, public health, soil and water resources, visual resources, and waste management. Participating agencies in the workshop included several Huntington Beach public agencies and the SCAQMD, as well as members of the public.

Staff's PSA, Part A, was published on October 10, 2013. Part A included: Executive Summary; Introduction; Project Description; Biological Resources; Cultural Resources; Efficiency; Facility Design; Compliance and Closure; Geology/Paleontology; Hazardous Materials; Land Use; Noise and Vibration; Reliability; Socioeconomics; Traffic and Transportation; Transmission Line Safety and Nuisance; Transmission System Engineering; Visual Resources; Worker Safety and Fire Protection; Waste Management; and Soil and Water Resources.

On December 20, 2013, Staff published a "Supplemental Focused Analysis for the Preliminary Staff Assessment- Part A", that addressed the following subject matters: Biological Resources; Cultural Resources; Land Use; Noise and Vibration; Compliance and Closure; Socioeconomics; Traffic and Transportation; Visual Resources; Worker Safety and Fire Protection; Waste Management; and Soil and Water Resources.

Staff published its PSA, Part B, on March 7, 2014. Part B included: Executive Summary; Air Quality (including Greenhouse Gas Emissions), Public Health, and Alternatives.

On April 3, 2014, Staff conducted a workshop on all portions of the Preliminary Staff Assessment at the Huntington Beach Central Library. The Final Staff Assessment was published on May 30, 2014, including responses to comments received from other interested agencies and the public on the PSA.

The Committee conducted the Prehearing Conference on July 11, 2014, in Sacramento at the Energy Commission. The first Evidentiary Hearing was conducted on July 21, 2014, at the Hilton Waterfront Huntington Beach, in Huntington Beach. A second Evidentiary Hearing was conducted on August 6, 2014, in Sacramento at the Energy Commission headquarters.

The Committee published the PMPD on September 2, 2014, and held a Committee Conference on the PMPD on September 17, 2014, at the Energy Commission in Sacramento, California.

The Full Commission considered the PMPD (and Errata) at its October 7, 2014, business meeting.

D. COMMISSION OUTREACH

Several divisions within the Energy Commission provide various notices concerning power plant siting cases. Staff provides notices of Staff workshops and the release of the Staff Assessments. The Hearing Office notices Committee-led events such as the Informational Hearing and Site Visit, Status Conferences, the Prehearing Conference, and Evidentiary Hearings. The Public Adviser's Office provides additional outreach for critical events as well as provides information to interested persons that would like to become more actively involved in a power plant siting proceeding. Further, the Media Office provides notice of events to local and regional press through press releases. The public may also subscribe to the proceeding's e-mail List Server offered on the web page for each project which gives an immediate notification of documents posted to the project web page. Through the activities of these entities, the Energy Commission has made every effort to ensure that interested persons are notified of activities in this proceeding.

E. PUBLIC COMMENT

The record contains public comments from concerned individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing.

At the Evidentiary Hearing on July 21, 2014, several individuals spoke in broad support for the project. Assemblymember Travis Allen of the 77th District, in which the HBEP would be located, spoke in favor of the project, citing its contributions to providing a

secure, diverse, and flexible power source. Also speaking in favor of the HBEP was Don Hansen, a former councilmember from Huntington Beach. Other oral and written public comments were received during the Evidentiary Hearings and to a lesser extent during the PMPD comment hearings and comment periods. The significant comments are addressed throughout the remainder of this Decision, either directly or in the narratives.

II. PROJECT DESCRIPTION AND PURPOSE

INTRODUCTION

On June 27, 2012, AES Southland Development, LLC, submitted an Application for Certification (AFC) to the California Energy Commission (CEC or Commission) to construct, own, and operate the Huntington Beach Energy Project (HBEP). The HBEP would replace and be constructed on 28.6 acres entirely within the footprint of the existing and operating AES Huntington Beach Generating Station (HBGS). (Ex. 2000, p. 4.5-3.)

The existing HBGS has five steam generating units (Units 1, 2, 3, 4, and 5). Units 1 and 2 are currently operational. Unit 5 was retired in 2002. Units 3 and 4 are owned by Edison Mission Huntington Beach, LLC. Effective October 31, 2012, Units 3 and 4 ceased commercial operation, and the air emission credits transferred to the Walnut Creek Energy Park, a 500 MW generating facility located in City of Industry, California. On September 7, 2012, the California Independent System Operator (CAISO) approved a must-run contract on Units 3 and 4. On December 7, 2012, the Commission approved an amendment to HBGS' existing license to convert Units 3 and 4 to synchronous condensers¹ to provide voltage support to southern Orange County and San Diego. This voltage support was required because of the unavailability of San Onofre Nuclear Generating Station units 2 and 3 for the summer of 2013 and thereafter. (Ex. 2000, p. 4.13-7)

Construction of the HBEP would require demolition of part of the existing HBGS and would occur over 90 months. During the course of construction, Units 3 and 4 would continue to provide voltage support through the synchronous condensers. Upon demolition of Units 3 and 4, the synchronous condensers would be taken out of service. (07/21/14 RT 196:22-198:16)

As required by the California Environmental Quality Act (CEQA), this section of the Decision describes the project based on the evidence in the record. (Cal. Code Regs., tit. 14, §15124.)

Both the Applicant and Staff presented evidence on the Project Description. Intervenor Monica Rudman also provided evidence on the subject of Project Description. Evidence on project description was heard at the evidentiary hearing on July 21, 2014, and is contained in the following exhibits: (07/21/14 RT 29:13-30:3, 30:6-31:11, 31:12-31:25; Exs. 1001, 1051, 1054, 1058, 1059, 1060, 1115, 1121, 1130, 1132, 1133, 1137, 2000, 2003, and 4009.)

¹ Synchronous generators provide voltage support to the grid but do not generate electricity. They consume small amounts of energy to keep spinning. (Ex. 2000, pp. 4.13-7, 6-26.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project Setting and Features

Power Plant:

HBEP would be located in an industrial area of Huntington Beach, Orange County, California, at 21730 Newland Street, just northeast of the intersection of the Pacific Coast Highway (PCH-Highway 1) and Newland Street. The site is adjacent to Huntington Beach State Park and is approximately 900 feet inland from the Pacific Ocean. It is relatively flat with an approximate elevation of 10 to 14 feet above mean sea level. The project site borders a manufactured home/recreational vehicle site on the west, a tank farm on the north, the Magnolia Marsh wetlands on the north and east, and the Pacific Ocean and Huntington Beach State Park on the south and southwest. Depth to groundwater ranges from five to twelve feet below surface level. The site currently consists of four parcels of land, totaling approximately 46.23 acres. The entire site is covered with asphalt or concrete pavement. (Ex. 2000, pp. 4.9-6, 4.9-8, 5.2-6.)

The HBEP would be a 939 MW (nominal gross output) combined cycle power plant, employing the Mitsubishi Heavy Industries (MHI) 501DA (M501DA) gas turbine generators (also referred to as combustion turbine generators, or CTGs) in a combined cycle configuration. This configuration has the ability to start up, shut down, turn down, and provide load following and cycling service, adding flexibility to meeting California's power demands. The project's combined cycle equipment would consist of two generator trains. Each train would consist of three M501DA CTGs with evaporative inlet air cooling, three single-pressure heat recovery steam generators (HRSGs) with natural-gas-fired duct burning, and one single-pressure condensing steam turbine generator (STG) arranged in a three-on-one combined cycle train (that is, three CTGs and three HRSGs coupled with one (STG) The gas turbines and HRSGs would be equipped with dry low-NOx (oxides of nitrogen) combustors and selective catalytic reduction, respectively, to control air emissions. No new offsite linear facilities are proposed as part of this project. **Project Description Figures 1A, 1B and 2** show the virtual and existing site appearance for the proposed project. **Project Description Figure 3** is the project site location map. (Ex. 1001, §§ 1.1, 2.1, 2.1.3, 2.1.4, 2.1.5.1, 2.1.5.2, 2.7; Ex. 2000, p. 5.3-2.) The project will have a generator ramping rate of up to 30 percent per minute when operating above minimum gas turbine turndown capacity, which allows it to respond rapidly to changes in generation and demand. Other equipment and facilities to be constructed and shared by both power blocks include natural gas compressors, water treatment facilities, emergency services, and administration and maintenance buildings. The plant may operate to a maximum of 6655 hours annually. (Ex. 2000, p. 4.9-12.)

Natural gas at 145 psig² pressure would be delivered to HBEP via an existing Southern California Gas (SoCalGas) 16-inch-diameter pipeline. SoCalGas will furnish a new metering station as part of this project (Ex. 1001, §§ 2.1.1.1.1, 4.0, Figure 4.01; Ex. 2000, p. 5.3-2.)

Construction would commence with the removal of the existing HBGS unit 5 and onsite fuel tanks. Unit 5 demolition is scheduled to begin the 1st quarter of 2015; its removal would clear necessary space to construct the new Block 1, which is expected to take approximately 30 months. Block 1 construction would begin between mid 2016 and mid 2018 and Block 2 construction would begin between mid 2018 and mid 2020. HBGS Units 1 and 2 demolition would begin between late 2020 and late 2022 after Blocks 1 and 2 are built and operational. (Ex. 2000, pp. 4.9-6, 4.13-7.)

Units 1 and 2 are not currently licensed by the CEC. However, the State Water Resources Control Board has adopted Resolution No. 2010-0020 that requires all coastal power plants to reduce intake volume and velocity by the end of 2020. HBGS Units 1 and 2 would have to be retrofitted to comply with Resolution No. 2010-0020. Existing HBGS Units 3 and 4 were licensed through the California Energy Commission (00-AFC-13C) through December 2020; demolition of these units is authorized under that license and will proceed irrespective of the HBEP. (07/21/14 RT 207:24 -209:23.)

If HBEP is approved, demolition of HBGS Units 3 and 4 would take place during the 1st quarter of 2016, with construction of Power Block 2 taking approximately 27 months. While demolition of Units 3 and 4 is not part of the HBEP project approved by this Decision, to ensure a comprehensive review of potential project impacts, the demolition is included in the cumulative impact assessment. (Ex. 1001, p. 5.6-1; Ex. 2000, p. 4.9-6, 4.13-7.)

Laydown Area:

HBEP construction will require both onsite and offsite laydown and construction parking areas. Approximately 22 acres of construction laydown will be required, with approximately 6 acres at the Huntington Beach Generating Station used for a combination of laydown and construction parking, and 16 acres at the AES Alamitos Generating Station (AGS) used for construction laydown (component storage only/no assembly of components at AGS). AGS is located in the city of Long Beach in Los Angeles County. During HBEP construction, the large components will be hauled from the construction laydown area at the AGS site to the HBEP site as they are ready for installation. (Ex. 1001, p. 5.6-2.)

² PSIG (pounds per square inch gage pressure). Pressure referenced to standard atmospheric conditions at 0 psig. In contrast to psia (pounds per square inch absolute with perfect vacuum as point of reference and 14.7 psia at atmospheric conditions).

Parking:

Parking for workers during the demolition of the existing units at HBGS and during construction of the HBEP will be provided by a combination of onsite and offsite parking. The maximum number of workers is expected to be 236, resulting in a demand of approximately 300 parking spaces during construction and demolition activities. (Ex. 2000, p. 4.8-9) Because of the location of the HBEP near the beach, the Applicant has provided for more than 300 parking spaces in order to insure that construction workers will have places to park. These spaces will be provided at the following locations:

- Approximately 1.5 acres onsite at the Huntington Beach Generating Station (approximately 130 parking stalls);
- Approximately 3 acres of existing paved/graveled parking located adjacent to HBEP across Newland Street (approximately 300 parking stalls);
- Approximately 2.5 acres of existing paved parking located at the corner of Pacific Coast Highway and Beach Boulevard (approximately 215 parking stalls);
- 225 parking stalls at the city of Huntington Beach shore parking west of the project site; and
- Approximately 1.9 acres at the Plains All American Tank Farm located on Magnolia Street (approximately 170 parking stalls).

(Ex. 1001, p. 5.6-2.)

Use of some of these facilities would be limited on weekends, from Memorial Day to Labor Day, and on holidays during the summer (Memorial Day, Fourth of July, and Labor Day) to ensure adequate access for residents and visitors. (Ex. 2000, p. 4.5-5.)

Project Purpose and Objectives

The HBEP would provide up to 939 MW of power generation capacity to the western Los Angeles Basin Local Reliability Area and will replace the retiring Huntington Beach Generating Station. The HBGS is scheduled to cease operation by December 31, 2020, in compliance with the California State Water Resources Control's Board's (SWRCB) Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (policy). This policy was adopted by the SWRCB on May 4, 2010, and regulates the use of seawater for power generation plants utilizing the once-through-cooled (OTC) method.

The proposed HBEP would be an air-cooled, combined-cycle power generating facility designed to start and stop very quickly and be able to ramp up and down, critical in supporting both local electrical reliability and grid stability to support peak demand and

meet resource adequacy requirements, as identified by the California Independent System Operator (CAISO).

On June 7, 2013, Southern California Edison (SCE) announced that Units 2 and 3 of the San Onofre Nuclear Generating Station (SONGS) would be permanently retired. The closure of SONGS places additional responsibility on SCE for replacement of over 2200 MW of electrical generation for southern California customers. The HBEP is designed to fill a critical role in replacement generation and reliability for southern California.

The proposed HBEP project objectives are as follows:

- Provide an efficient, reliable and predictable power supply by using combined-cycle, natural gas-fired combustion turbines to replace the OTC generation;
- Provide replacement generation to replace that of SONGS for southern California customers;
- Eliminate the use of ocean water for once-through-cooling;
- Be able to support the local capacity requirements of Southern California's Western Los Angeles Basin;
- Develop a 939 MW power generation plant that provides efficient operational flexibility with rapid-start and fast ramping capability to allow for efficient integration of renewable energy sources in the California electrical grid;
- Reuse existing electrical, water, wastewater, and natural gas infrastructures and land to minimize land resource and environmental justice impacts by developing on an existing brown field site;
- Site the project on property that has industrial land use designation with consistent zoning.

(Ex. 1001, p. XX; EX. 2000, p. 3-3.)

Project Features

The main project features would consist of a 28.6-acre power plant site. The majority of the facilities, including the power plant, transmission lines, Southern California Edison (SCE) switchyard, and natural gas connection, are located within the city of Huntington Beach within an area that permits development of public utilities. Parking facilities are similarly within the City of Huntington Beach, either within the Project site or nearby.

Associated Facilities and Processes

Electrical equipment, transmission and communications

Two 230-kilovolt (kV) transmission interconnections will connect HBEP power blocks 1 and 2 to the existing onsite SCE Ellis switchyard. (Ex. 2000, p. 5.5-5.)

Natural gas supply

The HBEP would use natural gas delivered by an existing Southern California Gas Company (SoCalGas) 16-inch-diameter pipeline, located on the northwest side of the existing HBGS facility near Newland Street. As part of the HBEP project, a new gas metering station and new gas pressure control station will be constructed by the project owner. SoCalGas has provided a will-serve letter, confirming that it has adequate capacity in its system to supply the project. SoCalGas's natural gas system represents a resource of considerable capacity and offers access to adequate supplies of gas. (Ex. 1001, pp. 1-1 – 1-3, 2-1 – 2-3, 2-60 – 2-61, 4-1, Figure 4.01, Appendix 4A; Ex. 2000, p. 5.3-3.)

Potable and process water

The project will use potable water for construction and operational processes and sanitary uses. The water delivered to the HBEP site is supplied from an existing 8-inch pipeline from the city of Huntington Beach into a 442,500 gallon service water/fire water storage tank. This water will be used as plant service water, irrigation water, makeup water to the combustion turbine inlet air evaporative coolers, and raw feed to the steam cycle makeup water treatment system. The city of Huntington Beach has provided a will-serve letter indicating there is sufficient supply of potable water to accommodate the HBEP. Alternative water sources, including potential use of reclaimed water, to support the HBEP, were analyzed and determined to be infeasible. (Ex. 1001, App. For more information on the discussion of alternative water sources, please see the **SOILS & WATER RESOURCES** section of this Decision.

Makeup water for the HBEP power blocks steam cycle will have contaminants removed by passing the service water through a reverse osmosis system followed by a continuous electrode ionization process. (Ex. 2000, p. 4.9-20.)

Wastewater, storm drainage

Sanitary wastewater generated by the HBEP will be discharged to the city of Huntington Beach existing 4-inch sewer main that services the existing HBGS. HBEP process wastewater and site storm water will be collected in an onsite retention basin then discharged to the Pacific Ocean via an existing outfall which services the existing HBGS. For more information on the discussion of alternative water sources, please see the **SOILS & WATER RESOURCES** section of this Decision.

The 442,500-gallon service water/fire water storage tank will provide approximately 35 hours of operational storage and 2 hours of fire protection storage in the event of a disruption in water supply. The existing fire water distribution system, including two emergency diesel-fired fire water pumps, storage tanks and piping, will remain in service as part of the fire protection system, but will be modified to meet all LORS for the HBEP and to accommodate the newly constructed facilities. For more information on the discussion of alternative water sources, please see the **SOILS & WATER RESOURCES** section of this Decision.

Project Demolition and Construction Schedule

Demolition and construction of the HBEP will commence in phases to allow continued operation of existing power generation and synchronous condensers to maintain a minimum generating capacity of at least 430 MW of power delivery and grid reliability. Construction of HBEP Power Blocks 1 and 2 will be coordinated with the operation and demolition of the existing HBGS Units 1, 2, 3, 4, and 5 and are contingent on permitting and CPUC-approved power purchase agreements. HBEP construction will require the removal of the existing HBGS Units 3, 4, and 5 and existing fuel storage tanks. Initial demolition begins with Unit 5, the fuel storage tanks and the stack for Unit 3 and 4 to provide the space for Power Block 1. Once Power Block 1 is operational, the synchronous condenser will cease operation and the remainder of units 3 and 4 will be demolished. The demolition of Units 3 and 4 are not part of this certification process, as Units 3 and 4 were licensed through the CEC (00-AFC-13C) and demolition is authorized under that license. Power Block 2 will be constructed on the footprint of the demolished Units 3 and 4. Once Power Block 2 is operational, the remaining HBGS Units 1 and 2 will be demolished. The construction of the control and maintenance buildings (buildings 33 and 34) is scheduled to occur during the last 14 months of the demolition of Units 1 and 2. Power Block 1 is scheduled for commercial operation in the fourth quarter of 2018, or first quarter of 2019; Power Block 2 is scheduled for commercial operation in the second or third quarter of 2020. The demolition of existing generating units and synchronous condensers and construction of new power blocks would occur in phases scheduled to take place over approximately a 90-month period to allow for continued operation to maintain generating capacity and provide critical voltage support at all times. See Project Description Table 1 for proposed construction and demolition schedule. (Ex. 2000, p. 3.6.)

Project Description - Table 1

DEMOLITION / CONSTRUCTION ACTIVITY	TIMELINE
Demolish Unit 5, fuel tanks and Units 3 & 4 stack	Q1 2015 – Q2 2016 15 months
Construction Power Block 1	Q3 2016 – Q4 2018 30 months
Commercial Operation Power Block 1	o Q4 2018 or Q1 2019
o Demolish Units 3, 4	o Q1 2016 – Q1 2018 27 months
o Construction Power Block 2	o Q3 2018 – Q2 2020 28 months
o Commercial Operation Power Block 2	o Q2 or Q3 2020
o Demolish Units 1, 2	o Q4 2020 – Q3 2022 24 months
o Construction of buildings 33, 34	o Q3 2021 – Q3 2022 14 months

RESPONSE TO AGENCY AND PUBLIC COMMENTS

At the Scheduling Conference on April 8, 2014, the Committee asked how, given the long construction period, improved technology would be incorporated into the HBEP. This question was particularly addressed to power block 2, but applied to power block 1 as well. In response, the Energy Commission staff has cited Title 20, California Code of Regulations. § 1769, where the applicant must contact the Compliance Project Manager to modify the design, operation, or performance requirements of the project/and or linear facilities of the project. Once the amendment is reviewed and approved, the applicant may proceed with the project modification. (Ex. 2000, p. 3.7.)

NOTEWORTHY PUBLIC BENEFITS

The CAISO has recognized the importance of the existing HBGS location in providing energy and contingency reserve for the Western Los Angeles Basin Local Reliability Area and northern San Diego County. Specifically, this location serves Orange County by providing essential electrical service to the existing SCE Ellis substation through a dedicated 230-kilovolt (kV) transmission line connection. If approved by the Energy Commission, the HBEP will be closer to ensuring the long-term viability of this existing critical generating location and will provide essential electrical service to the residents of Orange County and Huntington Beach. (Ex. 2000, p. 3.7.)

The HBGS uses ocean water for once-through-cooling (OTC) that carries with it potential impacts to marine life through impingement and entrainment. At present, HBGS uses 290 acre-feet per year (AFY) of potable water. The HBEP will be air cooled, eliminating the use of seawater. In addition, the proposed HBEP will result in a substantial reduction in fresh water usage as it requires only 134 AFY for both process and domestic use. (08/06/14 RT 29:24-30:18; Ex. 2000, pp. 3.7, 4.9-13-14.)

The HBEP will be located entirely within the footprint of the existing HBGS site, thus avoiding the need to construct new linear facilities. Siting the HBEP on the HBGS site is consistent with existing zoning regulations, and will result in reducing potential offsite

environmental impacts, the cost of construction, and ensures no new site is converted to industrial use. (Ex. 2000, p. 3.7.)

The design of the proposed HBEP is a smaller footprint and lower profile than the existing HBGS. Removal and replacement of an assemblage of structures, tanks, and cooling tower with project elements that are shorter and set back further to the north of the PCH will reduce some of the existing visual conditions. On April 7, 2014, the City of Huntington Beach adopted a resolution endorsing the visual enhancement plan for the HBEP. These enhancements will further reduce visual impacts of a power plant near the ocean. (Exs. 1134; 2003.) For more information on the discussion of alternative water sources, please see the **VISUAL RESOURCES** section of this Decision.

In total, the HBEP will replace an older, dirtier and less efficient power generation plant with a cleaner, more efficient power generation plant that has fewer aesthetic impacts on its scenic surroundings. (Ex. 2000, pp. 3.7 – 3.8.)

FINDINGS OF FACT

Based on the evidence, we find as follows:

1. AES Southland Development, LLC will own and operate the HBEP project in the city of Huntington Beach, Orange County, California.
2. The project consists of two independently operating, three-on-one, combined-cycle gas turbine power blocks.
3. Each power block consists of three Mitsubishi natural gas-fired combustion turbine generators, three supplemental-fired heat recovery steam generators, one steam turbine generator, an air-cooled condenser, and related ancillary equipment.
4. The project will require construction of a new gas metering station and new gas pressure control station within the footprint of the existing Huntington Beach Generating Station.
5. The project would eliminate the need for once-through-cooling using ocean water.
6. The project would reduce the demand for potable water at the site.
7. The project would reuse existing transmission facilities.
8. The project and its objectives are adequately described by the relevant documents contained in the record.

CONCLUSION OF LAW

We therefore conclude that the HBEP 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.

PROJECT DESCRIPTION FIGURE 1A
Huntington Beach Energy Project - Conceptual Drawing



Source: Ex. 2000, Project Description Figure 1A

PROJECT DESCRIPTION FIGURE 1B
Huntington Beach Energy Project - Conceptual Drawing



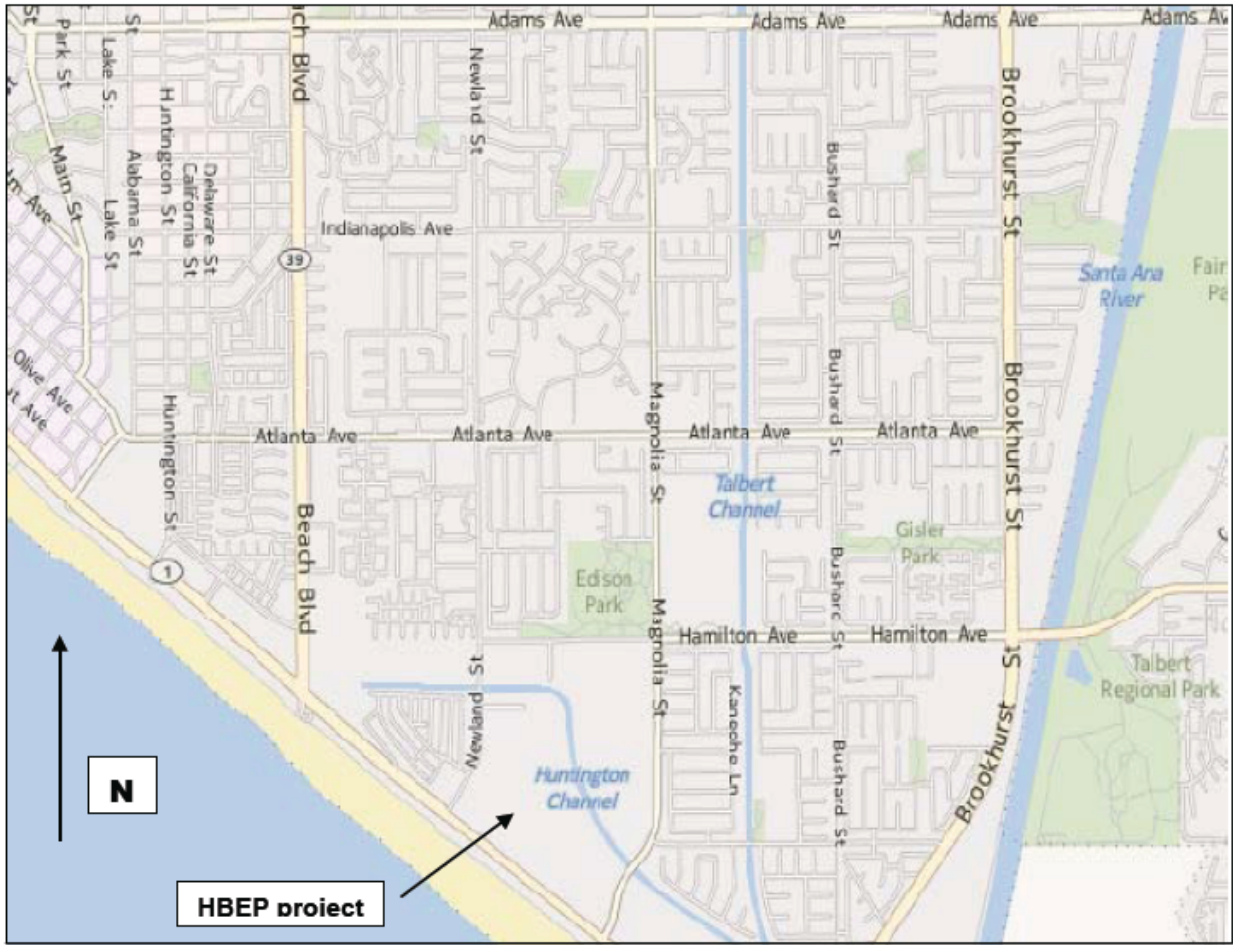
Source: Ex. 2000, Project Description Figure 1B

PROJECT DESCRIPTION FIGURE 2
Huntington Beach Energy Project - Current View



Source: Ex. 2000, Project Description Figure 2

PROJECT DESCRIPTION FIGURE 3
Huntington Beach Energy Project – Site Location Map



Source: Ex. 2000, Project Description Figure 3

III. ENGINEERING ASSESSMENT

The broad engineering assessment of the Huntington Beach Energy Project (HBEP) consists of separate analyses that examine its facility design, engineering, efficiency, and reliability aspects. These analyses include the on-site power generating equipment and the project-related linear facilities.

A. FACILITY DESIGN

INTRODUCTION

This review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to project design and construction. In considering the adequacy of the design plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to ensure that the project can ultimately be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes, as appropriate, the identification of special design features that are necessary to address unique site conditions that could adversely impact public health and safety, the environment, or the operational reliability of the project.

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

Lists of LORS applicable to each engineering discipline (civil, structural, mechanical, and electrical) are described in the AFC (Ex. 1001, Appendix 2C). Key LORS are listed in **Facility Design Table 1**, below:

Facility Design Table 1
Key Engineering Laws, Ordinances, Regulations and Standards (LORS)

Applicable LORS	Description
Federal	Code of Federal Regulations (CFR), Title 29, Part 1910, Occupational Safety and Health standards
State	2013 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
Local	City of Huntington Beach Municipal Code, Title 17 (or specific chapters: 17.04, 17.05, 17.40, 17.44, 17.48, 17.56, 17.58),
General	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

The Conditions of Certification¹ we adopt herein require the project to comply with the California Building Standards Code and city of Huntington Beach regulations and ordinances to ensure that the project would be built to applicable engineering codes and ensure public health and safety.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Site Preparation and Development

The record includes an evaluation of the proposed design criteria for grading, flood protection, erosion control, site drainage, and site access, in addition to the criteria for designing and constructing linear support facilities, such as natural gas and electric transmission interconnections. The applicant proposes the use of accepted industry standards, design practices, and construction methods in preparing and developing the site. The evidence indicates that this project, including its linear facilities, will comply with all applicable site preparation LORS. To ensure compliance, we will impose the conditions of certification listed below and in the **GEOLOGY AND PALEONTOLOGY** section of this Decision. (Ex. 2000, p. 5.1-3.)

Major Structures, Systems, and Equipment

Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of

¹ The Conditions of Certification for Facility Design, as well as all other Conditions of Certification for the HBEP, are in Appendix A to this Decision.

hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS.

HBEP would consist of two independently operating, three-on-one, combined-cycle gas turbine power blocks. Each power block would consist of three Mitsubishi natural gas-fired combustion turbine generators, three supplemental-fired heat recovery steam generators, one steam turbine generator, an air-cooled condenser, and related ancillary equipment. (Ex. 2000, p. 3-1.)

Other equipment and facilities to be constructed and shared by both power blocks include natural gas compressors, water treatment facilities, emergency services, and administration and maintenance buildings. (Ex. 2000, p. 3-3.)

The existing HBGS has various ancillary facilities that will remain in use to support HBEP. These facilities include the administration/warehouse building, SoCalGas natural gas pipeline interconnection and metering station, city of Huntington Beach potable water connection and sanitary sewer system. (Ex. 2000, p. 3-3.)

Natural gas is delivered via an existing SoCalGas 16-inch diameter line to an existing gas metering station. As part of the HBEP project, a new gas metering station and new gas pressure control station will be constructed by the project owner. (Ex. 2000, p. 3-3.)

The project will use potable water for construction and operational processes and sanitary uses. The water delivered to the HBEP site is supplied from an existing 8-inch pipeline from the city of Huntington Beach into a 442,500-gallon service water/fire water storage tank. This water will be used as plant service water, irrigation water, makeup water to the combustion turbine inlet air evaporative coolers, and raw feed to the steam cycle makeup water treatment system. The city of Huntington Beach has provided a will-serve letter indicating there is sufficient supply of potable water to accommodate the HBEP. Alternative water sources, including potential use of reclaimed water, to support the HBEP were analyzed and determined to be infeasible. (Ex. 2000, p. 3-3.)

Makeup water for the HBEP power blocks steam cycle will have contaminants removed by passing the service water through a reverse osmosis system followed by a continuous electrode ionization process. (Ex. 2000, p. 3-3.)

Sanitary wastewater generated by the HBEP will be discharged to the city of Huntington Beach existing 4-inch sewer main that services the existing HBGS. HBEP process wastewater and site storm water will be collected in an onsite retention basin then discharged to the Pacific Ocean via an existing outfall which services the existing HBGS. (Ex. 2000, p. 3-3.)

The 442,500-gallon service water/fire water storage tank will provide approximately 35 hours of operational storage and 2 hours of fire protection storage in the event of a disruption in water supply. The existing fire water distribution system, including two emergency diesel-fired fire water pumps, storage tanks and piping, will remain in

service as part of the fire protection system, but will be modified to meet all LORS for the HBEP and to accommodate the newly constructed facilities. (Ex. 2000, p. 3-3.)

HBEP will be designed and constructed to the 2013 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 other applicable codes and standards in effect when the design and construction of the project actually begin. If the initial designs are submitted to the chief building official (CBO) for review and approval after the update to the 2013 CBSC takes effect, the 2013 CBSC provisions shall be replaced with the updated provisions. (Ex. 2000, p. 5.1-3.)

On April 7, 2014, the city of Huntington Beach City Council adopted Resolution No. 2014-18 containing a visual screening and enhancement plan for HBEP (Ex. 1134). This resolution recommends that three architectural surfboards and three architectural wave forms, each approximately 125 feet tall, be installed on the HBEP power blocks. For visual rendering of these features, please see the **VISUAL RESOURCES** section of this Decision. These project features would be large enough to become potential safety hazards if not constructed according to applicable engineering LORS. Therefore, it is imperative that their structural soundness be reviewed and approved by the CBO prior to their physical implementation. We adopt revised condition of certification **GEN-2** accordingly to ensure these features will undergo the CBO's review and approval process. (Ex. 2000, p. 5.1-4.)

Certain structures in a power plant may be required, under the CBC, to undergo dynamic lateral force (structural) analysis; others may be designed using the simpler static analysis procedure. In order to ensure that structures are analyzed according to their appropriate lateral force procedure, we adopt Condition of Certification **STRUC-1**, below, which, in part, requires the project CBO's review and approval of the owner's proposed lateral force procedures before construction begins. (Ex. 2000, p. 5.1-4.)

We find that compliance with the above-described LORS and conditions of certification will ensure that the project's major structures, systems, and equipment are designed and constructed to reduce or avoid impacts that include potential health and safety hazards.

Project Quality Procedures

The Applicant describes a quality program intended to inspire confidence that its systems and components will be designed, fabricated, stored, transported, installed, and tested in accordance with all appropriate power plant technical codes and standards. (Ex. 1001. § 3.12.6, Appendix 2C). Compliance with design requirements will

be verified through specific inspections and audits. Implementation of this quality assurance/quality control (QA/QC) program will ensure that HBEP is actually designed, procured, fabricated, and installed as described in this analysis.

Staff evaluated the Applicant's project quality control plans and independently determined that the quality program is adequate to ensure that systems and components will be designed, fabricated, stored, transported, installed, and tested in accordance with all appropriate power plant technical codes and standards. Thus, to ensure that the Applicant does in fact implement the proposed quality assurance/quality control (QA/QC) program, we recommend implementation of design and construction-related conditions of certification set forth below.

Compliance Monitoring

Under 2013 CBC, Division II, Section 104, the CBO is authorized and directed to enforce all provisions of the CBC. The Energy Commission itself serves as the building official, and has the responsibility to enforce the California Building Standards Code, for all of the energy facilities it certifies. In addition, the Energy Commission has the power to interpret the CBC and adopt and enforce both rules and supplemental regulations that clarify application of the CBC's provisions. (Ex. 2000, p. 5.1-4.)

The Energy Commission's design review and construction inspection process conforms to CBC requirements and ensures that all facility design conditions of certification are met. As provided by Section 103 of the 2013 CBC, the Energy Commission appoints experts to perform design review and construction inspections and act as delegate CBOs on behalf of the Energy Commission. These delegates may include the local building official and/or independent consultants hired to provide technical expertise that is not provided by the local official alone. The applicant, through permit fees provided by the CBC, pays the cost of these reviews and inspections. (Ex. 2000, p. 5.1-4.)

Engineering and compliance staff will invite a third-party engineering consultant to act as CBO for this project. When an entity has been assigned CBO duties, Energy Commission staff will complete a memorandum of understanding (MOU) with that entity to outline both its roles and responsibilities and those of its subcontractors and delegates. (Ex. 2000, p. 5.1-5.)

We will impose conditions of certification for protection of public health and safety and compliance with engineering design LORS. Some of these conditions address the roles, responsibilities, and qualifications of the engineers who will design and build the project (Conditions of Certification **GEN-1** through **GEN-8**). These engineers must be registered in California and sign and stamp every submittal of design plans, calculations, and specifications submitted to the CBO. These conditions require that every element of the project's construction (subject to CBO review and approval) be approved by the CBO

before it is performed. They also require that qualified special inspectors perform or oversee special inspections required by all applicable LORS. (Ex. 2000, p. 5.1-5.)

While the Energy Commission and delegate CBO have the authority to allow some flexibility in scheduling construction activities, these conditions are written so that no element of construction (of permanent facilities subject to CBO review and approval) which could be difficult to reverse or correct can proceed without prior CBO approval. Elements of construction that are not difficult to reverse may proceed without approval of the plans. The applicant bears the responsibility to fully modify construction elements in order to comply with all design changes resulting from the CBO's subsequent plan review and approval process. (*Id.*)

Facility Closure

The evidentiary record also addresses project closure activities, which could range from “mothballing” the facility (i.e., closing or not using for a long time with the possibility of opening or being used again in the future) to removing all equipment and restoring the site. To ensure that decommissioning of the HBEP will conform to applicable LORS and be completed in a manner that protects the environment and public health and safety, the project owner is required to submit a decommissioning plan which will identify: decommissioning activities; applicable LORS in effect when decommissioning occurs; activities necessary to restore the site, if appropriate; and decommissioning alternatives. Related requirements are discussed in the **COMPLIANCE & CLOSURE** section of this Decision. (Ex. 2000, p. 5.1-6.)

CALIFORNIA COASTAL COMMISSION COMMENTS

The Coastal Commission submitted a report dated July 14, 2014, entitled, “Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **Land Use** section of this Decision.

The July 2014 Report recommends that we require AES to conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown expected from that dewatering. If the investigation shows potential drawdown effects to nearby environmentally sensitive habitats or wetland areas, project owner would then be required to identify and implement methods to avoid those effects. The methods to mitigate the potential effects of dewatering include installing sheet piles, slurry walls, or other similar barriers or conducting alternative dewatering methods that would avoid drawing down groundwater in these sensitive areas. The Coastal Commission also recommends that these structural mitigation methods be included on any relevant final design plans required pursuant to this Decision. (Ex. 4026, pp 13 – 14.)

We agree that these modifications to Condition of Certification **GEN-2** are appropriate and should be included in similar Conditions of Certification, such as **SOIL&WATER-1**, **SOIL&WATER-3**, **SOIL&WATER-4**, and **BIO-7**. With the imposition and implementation of these Conditions of Certification, we have provided additional feasible mitigation measures to avoid potential adverse dewatering impacts to adjacent habitat areas.

PUBLIC COMMENT

There were no public comments on Facility Design.

FINDINGS OF FACT

1. The evidentiary record identifies the applicable laws, ordinances, regulations, and standards (LORS) that apply to this project.
2. The evidentiary record contains an independent evaluation of the Applicant's proposed design criteria, including identification of criteria essential to public health and safety.
3. The evidentiary record contains sufficient information to establish that the 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.
4. The conditions of certification set forth below provide, in part, that independent qualified personnel will perform design review, plan checking, and field inspections of the project.
5. The conditions of certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality as well as public health and safety.
6. The General Conditions included in the **COMPLIANCE & CLOSURE** section of this Decision, establish requirements to be followed in the event of facility closure.
7. Though future conditions that could affect decommissioning are largely unknown at this time, it can reasonably be concluded that if the project owner submits a decommissioning plan as required in the **COMPLIANCE & CLOSURE** portion of this Decision prior to decommissioning, decommissioning procedures will comply with all applicable engineering LORS.

CONCLUSION OF LAW

Implementation of the Condition of Certification listed in Appendix "A" will ensure that the HBEP project will be designed and constructed in conformance with the applicable laws pertinent to the engineering aspects summarized in this section of this Decision.

B. POWER PLANT EFFICIENCY

INTRODUCTION

In this section of the Decision, we review the proposed HBEP to determine whether it will use energy efficiently and avoid unnecessary consumption of energy.

The topic of Power Plant Efficiency was uncontested. (07/21/14 RT 19:15 – 19:22.) The following evidence on Power Plant Efficiency was received on July 21, 2014: (Ex. 1001, 1010, 1115, 1129, 1130, 1132, 1133, 1137, and 2000. (07/21/14 RT 29:13 – 31:11.)

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

No federal, state, or local/county laws, ordinances, regulations, and standards (LORS) apply to the efficiency of this project. (Ex. 2000, p. 5.3-1.)

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

Project fuel efficiency, and therefore its rate of energy consumption, is determined by both the configuration of the power producing system and the selection of equipment used to generate its power. As a combined cycle power plant, each of HBEP’s two new power blocks would generate electric power by utilizing three gas turbines and a steam turbine generator (STG). The STG would operate on heat energy recovered from the gas turbine exhaust. By recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of any combined cycle power plant is increased considerably from that of either gas turbines or a steam turbine operating alone. This configuration is well suited to the large, steady loads met by a baseload plant that generates energy efficiently over long periods of time. (Ex. 1001, §§ 2.1.3, 2.1.4; Ex. 2000, p. 5.3-4.)

In addition, the three-on-one combustion turbine/HRSG configuration allows one gas turbine to be shut down, while the other two remain operational, thus allowing greater efficiency while meeting demand. (Ex. 2000, p. 5.3-4.)

Finally, HBEP would utilize proprietary technology that allows a combustion turbine to reach baseload more quickly, as well as increase the ramping rate for both loading and unloading the power trains while operating in a load following mode of operation. Within a relatively short period of time, the steam turbine generator would also begin producing power, thus allowing the proposed power plant to operate at or near the typical combined cycle efficiency rating. (Ex. 2000, p. 5.3-5.)

CALIFORNIA ENVIRONMENTAL QUALITY ACT¹

CEQA Guidelines state that the environmental analysis of a proposed project shall consider:

- the project's energy requirements and energy use efficiency;
- the project's effects on local and regional energy supplies and energy resources;
- the project's requirements for additional energy supply capacity;
- the project's compliance with existing energy standards; and
- any alternatives that could reduce the wasteful, inefficient, and unnecessary consumption of energy

(Cal. Code Regs., tit. 14, §§15000 et seq., Appendix F.)

If significant adverse impacts are found, the environmental review shall describe feasible mitigation measures to minimize the "inefficient and unnecessary consumption of energy". (Cal. Code Regs., tit. 14, §15126.4, subd. (a)(1).) (Ex. 2000, pp. 5.3-2 – 5.3-3.)

In addition, we must consider whether the HBEP, when added to other closely related past, present, and reasonably foreseeable probable future projects, creates cumulative impacts on energy demand and resources. Cumulative impacts can result from individually minor but collectively significant projects taking place over time. (Cal. Code Regs., tit. 14, §§ 15130, 15355.)

DISCUSSION AND ANALYSIS OF THE EVIDENCE

Project Energy Requirements and Energy Use Efficiency

The Energy Commission has jurisdiction over power plants of 50 MW or greater; by definition, such power plants consume large amounts of energy. Under normal conditions, HBEP would burn natural gas at a nominal rate of approximately 7,427 million British thermal units (MMBtu) per hour, low heating value (LHV²), during baseload operation - a substantial rate of energy consumption that could potentially impact energy supplies under some conditions. Under expected project conditions, electricity would be generated at a full load efficiency of approximately 46 percent LHV. This efficiency level compares favorably with the average fuel efficiency of a typical

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as "CEQA".

² "LHV" is a measurement of the energy content of a fuel correcting for post-combustion water vapor. (Ex. 2000, p. 5.3-1.)

baseload/load following combined cycle plant. (Ex. 1001, § 2.1.3, Figures 2.1-3a – 2.1-3c; Ex. 2000, p. 5.3-3.)

Adverse Effects on Local and Regional Energy Supplies and Resources

Fossil Fuel Resources

The HBEP would use natural gas delivered by an existing Southern California Gas Company (SoCalGas) 16-inch-diameter pipeline, located on the northwest side of the existing HBGS facility near Newland Street. SoCalGas has provided a will-serve letter, confirming that it has adequate capacity in its system to supply the project. SoCalGas's natural gas system represents a resource of considerable capacity and offers access to adequate supplies of gas. (Ex. 1001, pp. 1-1 – 1-3, 2-1 – 2-3, 2-60 – 2-61, 4-1, Figure 4.01, Appendix 4A; Ex. 2000, p. 5.3-3.)

We therefore find that there would be adequate natural gas supply and pipeline capacity to meet the project's needs.

Additional Energy Supply Requirements

We have previously found that there are adequate fossil fuel resources, in the form of natural gas, for the HBEP. As stated in the **PROJECT DESCRIPTION AND PURPOSE** section of this Decision, the HBEP is replacing the existing HBGS facilities with new technologies that have higher efficiencies. (Ex. 2000, p. 5.3-4.)

We therefore find the project would not increase demand on the existing natural gas supplies nor require additional energy supply.

Compliance with Energy Standards

We find that no standards apply to the efficiency of HBEP or other non-cogeneration projects. (Ex. 2000, p. 5.3-4.)

Alternatives to Reduce Wasteful, Inefficient, and Unnecessary Energy Consumption

HBEP could create significant adverse impacts on energy resources if alternatives reduced the project's fuel use. The evaluation of alternatives to the project (that could reduce wasteful, inefficient, or unnecessary energy consumption) first requires the examination of the project's energy consumption, as determined by both the configuration of the power producing system and the selection of equipment used to generate its power.

Project Configuration

HBEP would be a combined cycle power plant. Each of the two new power blocks would generate electric power by utilizing three gas turbines and a STG (steam turbine generator) operating on heat energy recovered from the gas turbine exhaust by

recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of any combined cycle power plant is increased considerably from that of either gas turbines or a steam turbine operating alone. This configuration is well suited to the large, steady loads met by a baseload plant that generates energy efficiently over long periods of time. (Ex. 1001, §§ 2.1, 2.1.3, 2.1.4; Ex. 2000, p. 5.3-4.)

The HBEP would also include evaporative inlet air coolers, single-pressure HRSGs, steam turbine units, and power cycle cooling systems (air-cooled condensers). Staff believes these features provide meaningful efficiency enhancements to HBEP. The three-on-one combustion turbine/HRSG configuration is also highly efficient during unit turndown since one gas turbine can be shut down, leaving the other two fully loaded. This allows the efficient operation of two gas turbines instead of the operation of three gas turbines operating at a less efficient part load to generate the number of MWs. (Ex. 1001, §§ 2.1, 2.1.3, 2.1.4; Ex. 2000, p. 5.3-4.)

The HBEP's design would incorporate proprietary rapid start technology, which would allow the combustion turbine to reach baseload more quickly as well as increase the ramping rate for both loading and unloading the power trains while operating in a load following mode of operation. This approach is designed to start quickly, and while in start-up phase, operate at an efficiency rating comparable to a typical simple cycle plant. Within a relatively short timeframe, the steam turbine generator would begin producing power. The plant would then operate at near a typical combined cycle efficiency rating. (Ex. 2000, p. 5.3-5.)

Equipment Selection

The M501DA gas turbine is the basic building block for the three-on-one combined cycle system. The M501DA provides a combination of efficiency and operating history comparable to the industry competition. The two independent three-on-one power blocks, each with an ISO³ rated capacity (GTW 2013) of 506.2 MW and 51.8 percent combined cycle efficiency. The stand-alone simple cycle capacity for the M501DA CTG is 113.95 MW at 34.9 percent efficiency (9,780 Btu/kWh⁴ LHV). HBEP would employ AES' rapid start technology, which would effectively reduce the time required for startup and shutdown of the turbine generators having similar thermal efficiency. (Ex. 2000, p. 5.3-5.)

One alternative CTG with similar capacity, efficiency and rapid start-up features is the General Electric (GE) LMS100 aeroderivative CTG with an ISO rating of 98.2 MW at 45 percent (7,580 Btu/kWh LHV) in a simple cycle configuration. Where the simple cycle efficiency of the M501DA is lower than the LMS100 (34.9 percent vs. 45 percent,

3 ISO (International Organization for Standardization): In this case, ISO Standard 27.040 for measurement of gas and steam turbine capacity.

4 Kilo Watt hours

respectively), the MHI gas turbine nominal capacity exceeds GE by 15.75 MW (113.95 MW vs. 98.2 MW). Used in a 3 x 1 configuration, this capacity difference would be magnified three times to about 9 percent ($(15.75 \times 3)/506.2 = 0.093$). (Ex. 2000, p. 5.3-5.)

Selecting between these machines is also based on commercial availability. The M501DA model has over two decades of operational history and has been commercially available since 1980. (Also, see analysis below under **Natural Gas-Burning Technologies**.) (Ex. 2000, p. 5.3-5.)

EFFICIENCY OF ALTERNATIVES TO THE PROJECT

HBEP's objectives include the generation of baseload electricity and load-following all hours of the day to serve energy requirements from the California Independent Systems Operator (CAISO) (Ex. 1001, §§ 1.2, 2.1, 6.1; Ex. 2000, p. 5.3-5.)

Alternative Generating Technologies

Alternative generating technologies for HBEP include solar thermal technology, other fossil fuels, nuclear, biomass, hydroelectric, wind, and geothermal technologies. However, given the project objectives, location, air pollution control requirements, and the commercial availability of the above technologies, we find that only natural gas-burning technologies (whether coupled with solar technology or not) are feasible. (Ex. 1001, §§ 1.5, 6.6; Ex. 2000, p. 5.3-6.)

Natural Gas-Burning Technologies

A modern baseload combined cycle power plant typically offers a higher efficiency range than the rapid-start combined cycle plant proposed for use at HBEP. However, a baseload plant would not meet the project objective of providing operating flexibility. (Ex. 2000, p. 5.3-6.)

A possible alternative to the Mitsubishi small aeroderivative CTG is a larger industrial-duty next generation G-class (e.g., Siemens-Westinghouse 501G) which would use partial steam cooling to allow slightly higher temperatures, yielding proportionately greater efficiency. In actual operation, larger-capacity G-class turbines run at less than optimum (full) output more frequently than smaller-capacity F-class turbines. Given the minor efficiency improvement promised by the G-class turbine, and since this machine would have to operate at less than optimum baseload efficiency in order to meet the project load capacity requirements, we find that use of the M501 series machines is reasonable. (Ex. 2000, p. 5.3-6.)

Another possible alternative to the 501 class advanced gas turbine is an H-class next generation machine with a claimed fuel efficiency of 60 percent LHV at ISO conditions. This high efficiency is achieved through a higher-pressure ratio and firing temperature,

made possible by cooling the initial turbine stages with steam instead of air. Given the minimal commercial experience with this machine and the project load requirements, we find that the smaller, more flexible M501 model is preferable. (Ex. 2000, p. 5.3-6.)

Finally, instead of demolishing the existing HBGS, that plant could be retrofitted. However, the existing boilers would not provide the operating flexibility and efficiency improvement offered by the M501DA or equivalent modern gas turbines in a combined cycle configuration. (Ex. 2000, p. 5.3-6.)

Alternative Heat Rejection System

The HBEP would use a dry cooling system (air-cooled condensers) as the means for rejecting power cycle heat from the steam turbine. An alternative heat rejection system would utilize a wet cooling system (a cooling tower). (Ex. 2000, p. 5.3-7.)

The local climate in the project area is characterized by moderate coastal temperatures and variable relative humidity. In low temperature and high relative humidity, the air-cooled condenser performs slightly better than the evaporative cooling tower. In high temperatures and low relative humidity, the evaporative cooling tower performs marginally better than the air-cooled condenser. However, due to limitation of using existing water supplies, the use of dry cooling is preferred, especially given the slight efficiency improvement that would be provided by the wet cooling alternative. (Ex. 2000, p. 5.3-7.) For a more detailed discussion of water use and resources, please see the **SOIL & WATER RESOURCES** section of this Decision.

We therefore find that the selected project configuration (rapid response combined cycle) and generating equipment (M501DA gas turbines and associated cooling systems) represent a reasonably efficient feasible combination. There are no alternatives that would significantly reduce energy consumption while satisfying the project's objectives of producing baseload electricity and ancillary load-following services.

Inlet Air Cooling

Another alternative technology would be the use of either evaporative coolers or fogger and chillers for gas turbine inlet air cooling. Both increase power output by cooling gas turbine inlet air. A mechanical chiller offers greater power output than the evaporative cooler on hot, humid days; however, it consumes electric power to operate its refrigeration process, slightly reducing its overall net power output and overall efficiency. An absorption chiller uses less electricity but necessitates the use of a substantial amount of ammonia. An evaporative cooler or fogger boosts power output most efficiently on dry days; it uses less electricity than a mechanical chiller, possibly producing a slightly higher operating efficiency. Efficiency differences between these alternatives are relatively insignificant. (Ex. 2000, p. 5.3-6.)

Given the climate at the project site and the relative lack of clear superiority of one system over another, we find that use of evaporative gas turbine inlet air cooling system would have no significant adverse energy impacts.

INDIRECT IMPACTS

Older, less efficient power plants consume more natural gas than new, more efficient plants such as HBEP. Natural gas is burned by the most competitive power plants on the spot market, and the most efficient plants run the most frequently provided that they meet their objectives. The efficiency of the proposed HBEP should allow it to compete favorably, run at high capacity, and replace less efficient power generating plants. (Ex. 2000, p. 5.3-8.) We therefore find that the construction and operation of the project would not create indirect impacts that would have otherwise occurred without this project.

CUMULATIVE IMPACTS

The only industrial facility near the HBEP is the proposed Poseidon project, a 50 million gallon per day (mgd) desalinization plant. The Poseidon project would not consume natural gas for its operation. (Ex. 2000, p. 5.3-8.) Thus, we find that there are no cumulative energy impacts from the HBEP.

PUBLIC COMMENT

At the July 21, 2014, Evidentiary Hearing, Don Hansen, a former Huntington Beach city councilmember stated he believed that the HBEP would be an improvement over HBGS in terms of efficiency. (07/21/14 RT 211: 19- 212:17.) Barbara Delgleize cited efficiency of the HBEP as reason for her support of the project. (07/21/14 RT 212:25-214:9.)

FINDINGS OF FACT

Based upon the evidence, we make the following findings:

1. HBEP would provide approximately 939 MW of electrical power with two generator trains, each employing three Mitsubishi Heavy Industries 501DA gas turbine generators in a combined cycle configuration, along with three evaporative inlet air cooling, single-pressure heat recovery steam generators with natural-gas-fired duct burning, and one single-pressure condensing steam turbine generators arranged in a three-on-one combined cycle train.
2. HBEP would generate electricity at a full load efficiency of approximately 46 percent low heat value.
3. HBEP would consume natural gas at a 7,427 million British thermal units (MMBtu) per hour, low heat value, during baseload operation.
4. The impact of the project's fuel consumption on energy supplies and energy efficiency is less than significant.
5. The project has access to an abundance of natural gas through the existing 16-inch-diameter pipeline, owned by Southern California Gas Company, which currently serves the project.
6. The project would not create a substantial increase in fossil fuel demand.
7. Only natural gas-burning technologies (whether coupled with solar technology or not) are feasible alternatives because of project objectives, location, air pollution control requirements, and the commercial availability of the other technologies .
8. The project would not constitute a significant adverse impact on fossil fuel energy resources compared to feasible alternatives.
9. Even though evaporative or wet cooling could offer greater efficiency than the HBEP the selection of dry cooling is a reasonable tradeoff that would prevent potentially significant environmental impacts resulting from consumption of the large quantities of water required by wet cooling.
10. There are no nearby power plant projects or other projects consuming large amounts of fossil fuel that hold the potential for cumulatively considerable energy consumption impacts when aggregated with the project.
11. No federal, state, or local laws, ordinances, regulations, or standards apply to the efficiency of this project.

CONCLUSIONS OF LAW

1. The HBEP would not create significant adverse direct, indirect or cumulative effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.
2. No Conditions of Certification are required for Power Plant Efficiency.

PROPOSED CONDITIONS OF CERTIFICATION

No conditions of certification are proposed.

C. POWER PLANT RELIABILITY

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

The responsibility for maintaining system reliability falls largely to control area operators such as the California Independent System Operator (CAISO) that purchase, dispatch, and sell electric power throughout the State. The CAISO has begun to establish specific criteria for each load-serving entity under its jurisdiction to help the entities decide how much generating capacity and ancillary services to build or purchase. Load serving entities then issue power purchase agreements to satisfy these needs. (Ex. 2000, p. 5.4-2.)

The CAISO criteria are designed to maintain system-wide reliability. However, it is possible that, if numerous power plants operated at reliability levels sufficiently lower than historical levels, the assumptions used by CAISO to ensure system reliability would prove invalid. Therefore, to ensure adequate system reliability, we examine whether individual power plants will be built and operated to the traditional level of reliability by ensuring: (1) adequate levels of equipment availability; (2) plant maintainability with scheduled maintenance outages; (3) fuel and water availability; and, (4) resistance to natural hazards. Where a power plant compares favorably to industry norms, it is not likely to degrade the overall reliability of the electric system it serves. (Ex. 2000, p. 5.4-2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

HBEP proposes to use a 939 megawatt (MW) (nominal gross output) combined-cycle power plant. The combined cycle configuration will provide the ability to start up, shut down, turn down, and provide load following, as needed to meet California's energy needs.

The project is expected to achieve an equivalent availability factor of 98 percent. (Ex. 1001, § 2.6.1.) The project's annual capacity factor¹ is expected to be in the range of 35-50 percent. (Ex. 1001, § 2.7.)

The evidence predicts an equivalent availability factor of at least 98 percent. The Applicant expects to operate the plant at a capacity factor of 46 percent during each year of its operating life. (Ex. 2000, p. 5.4-2.)

¹ Capacity factor is a measure of how much electricity a power plant actually produces during the year as compared to the maximum power it could produce at continuous full power operation during the same period of time. For example, a capacity factor of 35 percent means that the plant would operate 3,066 hours in a year (8,760 hours).

Equipment Availability

Equipment availability for HBEP will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The applicant describes a quality assurance/quality control (QA/QC) program (Ex. 1001, § 2.6.6) that is typical of the power industry. Equipment would be purchased from qualified suppliers based on technical and commercial evaluations of their personnel, production capability, and past performance. The project owner will perform receipt inspections, test components, and administer independent testing contracts. To ensure these measures are taken, we have incorporated appropriate conditions of certification in the **FACILITY DESIGN** section of this Decision. (Ex. 2000, p. 5.4-3.)

Plant Maintainability

A generating facility called on to operate for long periods of time must be capable of being maintained while operating. A typical approach for achieving this is to provide redundant examples of those pieces of equipment most likely to require service or repair. The applicant plans to provide an appropriate redundancy of function for the project. (Ex. 1001, § 2.6.2, Table 2.6-1.) Because the project consists of two independent equipment trains, it is inherently reliable. A single equipment failure cannot disable more than one train, which allows the plant to continue to generate, but at reduced output. Plant ancillary systems are also designed with adequate redundancy to ensure their continued operation if equipment fails. We find that this project's proposed equipment redundancy would be sufficient for its reliable operation. (Ex. 2000, p. 5.4-4.)

Equipment manufacturers provide maintenance recommendations for their products, and the applicant would base the project's maintenance program on those recommendations. (Ex. 1001, § 2.6.1.) The program would encompass both preventive and predictive maintenance techniques. Maintenance outages should be planned for periods of low electricity demand. We find that the project would be adequately maintained to ensure an acceptable level of reliability. (Ex. 2000, p. 5.4-4.)

Fuel and Water Availability

For any power plant, the long-term availability of fuel and of water for cooling or process use is necessary to ensure reliability. The insufficiency of reliable sources of fuel and water may restrict the service life and the economic viability of the power plant. (Ex. 2000, p. 5.4-4.)

Natural gas would be delivered to the HBEP via an existing 16-inch diameter Southern California Gas Company (SoCalGas) line. (Ex. 1001, §§ 2.1.7, 2.6.3.) SoCalGas has confirmed its system's adequate capacity to supply the project; a will-serve letter is included in Ex. 1001, Appendix 4A. SoCalGas's natural gas system represents a resource of considerable capacity and offers access to adequate supplies of gas. We find that there would be adequate natural gas supply and pipeline capacity to meet the project's needs. (Ex. 2000, p. 5.4-4.)

The HBEP would use water from the city of Huntington Beach for gas turbine inlet air evaporative cooling, process water, fire protection and potable water. A will-serve letter from the city of Huntington Beach is provided in Ex. 1001, Appendix 5.15A. We find that a reliable source of water has been secured for the project. For further discussion of water supply, see the **SOIL AND WATER RESOURCES** section of this document.

Natural Hazards

Natural forces can threaten the reliable operation of a power plant. Seismic shaking (earthquakes), flooding, and tsunami could present credible threats to the project's reliable operation. (Ex. 2000, p. 5.4-5.)

The site lies within a seismically active area (Ex. 1001, § 2.5.2); see the **GEOLOGY AND PALEONTOLOGY** section of this document. The project would be designed and constructed to the latest appropriate LORS. (Ex. 1001, Appendix 2C.) Compliance with current seismic design LORS represents an upgrading of performance during seismic shaking compared to older facilities since these LORS have been continually upgraded. Because it would be built to the latest seismic design LORS, this project would likely perform at least as well as, and perhaps better than, existing plants in the electric power system.

In light of the general historical performance of California power plants and the electrical system in seismic events, we find that the power plant is likely to remain functional during earthquakes. (Ex. 2000, p. 5.4-5.)

The project site is outside the 100-year floodplain. (Ex. 1001 § 5.15.1.3.) A drainage, erosion and sediment control plan would be implemented (see **FACILITY DESIGN**). In light of this, we find there are no special concerns with power plant functional reliability due to flooding. (Ex. 2000, p. 5.4-5.)

While not likely to occur during the project design life, the site is subject to inundation by tsunami. U.S. Building codes generally have not addressed the subject of designing structures in tsunami zones. FEMA's Coastal Construction Manual, developed to provide design and construction guidance for structures built in coastal areas, addresses seismic loads for coastal structures and provides information on tsunami and associated loads. FEMA cites ASCE Standard ASCE 7-10, *Minimum Design Loads for Buildings and Other Structures* as the reference to be consulted during design of structures. ASCE 7-10 is codified in California Building Code 2010. The project would be designed and constructed to this code (see **FACILITY DESIGN**). (Ex. 2000, p. 5.4-5.)

Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors (as well as other related reliability data). The NERC regularly polls North American utility companies on their project reliability through its Generating Availability Data System and periodically summarizes and publishes those statistics on the Internet at <http://www.nerc.com>. NERC reports an availability factor of 89.54 percent as the generating unit average figure for the years 2005 through 2009 for combined cycle gas turbine units. (Ex. 2000, p. 5.4-5.)

The model of gas turbine that would be employed in the HBEP project has been on the market for over two decades and can be expected to exhibit typically high availability. The applicant's predicted annual availability factor of at least 98 percent appears reasonable compared to the NERC figure for similar plants throughout North America. In fact, these machines can well be expected to outperform the fleet of various (mostly older) gas turbines that make up the NERC statistics. Additionally, because the plant would consist of two generating trains, maintenance can be scheduled during times of the year when the full plant output is not required to meet market demand, which is typical of industry standard maintenance procedures. The applicant's estimate of plant availability, therefore, appears to be realistic. Stated procedures for assuring the design, procurement, and construction of a reliable power plant appear to be consistent with industry norms, and we find they would ultimately produce an adequately reliable plant. (Ex. 2000, pp. 5.4-5 - 5.4-6.)

FINDINGS OF FACT

1. Based on the uncontested evidence, we make the following findings:
2. No federal, state, or local/county LORS apply to the reliability of HBEP.
3. A project's reliability is acceptable if it does not degrade the reliability of the utility system to which it is connected.

4. Implementation of Quality Assurance/Quality Control (QA/QC) programs during design, procurement, construction, and operation of the HBEP, along with adequate maintenance and repair of the equipment and systems, will ensure the project is adequately reliable.
5. Appropriate conditions of certification included in the **FACILITY DESIGN** portion of this Decision ensure implementation of the QA/QC programs and conformance with seismic design criteria.
6. HBEP will have appropriate redundancy of function.
7. The project's fuel and water supply will be reliable.
8. The project will meet or exceed industry norms for reliability, including reliability during flooding or seismic events.
9. HBEP will not degrade the overall electrical system.
10. The North American Electric Reliability Corporation reports an availability factor of 89.54 percent as the generating unit average figure for the years 2005 through 2009 for gas turbine units.
11. An availability factor of 98 percent is achievable by the HBEP.

CONCLUSION OF LAW

We therefore conclude that HBEP will meet industry norms and not degrade the overall reliability of the electrical system. The project will be adequately reliable. No conditions of certification are required for this topic area.

D. TRANSMISSION SYSTEM ENGINEERING

INTRODUCTION

Under this topic, the Commission assesses the engineering and long-term planning consequences of new transmission facilities associated with a proposed project. The Commission's jurisdiction includes "...any electric power line carrying electric power from a thermal power plant ...to a point of junction with an interconnected transmission system." (Pub. Res. Code, § 25107.) Under this authority, the Commission evaluates whether the project's new transmission facilities and outlet line to the point of interconnection will comply with applicable LORS and whether any upgrades beyond the interconnection point are necessary to mitigate potential project-related impacts to the electrical grid.

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 staff consulted with CAISO in assessing the project's impacts on the transmission system. (Ex. 2000, p. 5.5-2.)

The HBEP's new transmission lines will interconnect to the Southern California Edison (SCE) electrical grid. As the responsible interconnecting authority, SCE must prepare an Interconnection Facilities Study in conjunction with the CAISO to identify project-related downstream impacts and any mitigation measures necessary to accommodate the new interconnection. (Ex. 2000, pp. 5.5-2, 5.5-5 et seq.)

The evidence on this topic was uncontested and is composed of the following exhibits: 1001, 1004, 1010, 1017, 1080, 1092, 1115, 1126, 1130, 1132, 1133, 1137, and 2000. (07/21/14 RT 19:15-22; 29:13 – 31:11.)

STANDARDS OF REVIEW/THRESHOLDS OF SIGNIFICANCE

California Environmental Quality Act (CEQA)¹

Under CEQA, the Commission must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the Energy Commission. (Guidelines, tit. 14, § 15378.) Thus, the Commission must identify the system impacts and necessary new or modified transmission facilities required downstream of the proposed interconnection.

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as "CEQA".

Laws, Ordinances, Regulations and Standards (LORS)

The following LORS apply to our analysis:

- California Public Utilities Commission General Order 95, *Rules for Overhead Electric Line Construction* – Establishes uniform requirements for construction of overhead transmission lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance, and operation or use of overhead electric lines and to the public generally.
- California Public Utilities Commission General Order 128, *Rules for Construction of Underground Electric Supply and Communications Systems* – Establishes uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance, and operation or use of underground electric lines and public generally.
- National Electric Safety Code (1999) – Provides electrical, mechanical, civil, and structural requirements for overhead electric line construction and operation.
- NERC/WECC Planning Standards – The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage Support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a

system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted.

- NERC Reliability Standards for the Bulk Electric Systems of North America – Provide national policies, standards, principles, and guidelines to ensure the adequacy and security of the electric transmission system. These standards provide for system performance levels under normal and contingency conditions.
- California ISO Planning Standards – Provide additional standards and guidelines to assure the adequacy, security and reliability in the planning of the CAISO transmission grid facilities. The CAISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. The CAISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The CAISO Standards apply to all participating transmission owners interconnecting to the CAISO controlled grid. They also apply when there are any impacts to the CAISO grid due to facilities interconnecting to adjacent controlled grids not operated by the CAISO.
- California ISO/FERC Electric Tariff – Provides guidelines for construction of all transmission additions/upgrades (projects) within the CAISO controlled grid. The CAISO determines the “Need” for the proposed modified project where it will promote economic efficiency or maintain system reliability. The CAISO also determines the Cost Responsibility of the proposed modified project and provides an Operational Review of all facilities that are to be connected to the CAISO grid.

(EX. 2000, pp. 5.5-2 – 5.5-4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

*For a more generalized discussion of the project setting, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision.*

Transmission Facilities Description

HBEP is designed to be a natural-gas-fired, combined-cycle generating facility located, consisting of two power blocks. Each power block has three combustion turbine-generators (CTG) and one steam turbine generator (STG). Each CTG is expected to generate 114 megawatts (MW) and the STG is expected to generate 145 MW under average ambient conditions. A total of six CTGs and two STGs would generate a maximum output of 974 MW. With the generator auxiliary load of approximately 35 MW,

the net output of the HBEP to the transmission grid would be 939 MW. The combustion turbine generators are each rated at 119.8 Megavolt Ampere (MVA) with a power factor of 0.95, and the steam turbine generators are each rated at 152.8 MVA with a power factor of 0.95. For power block 1, combustion turbine generators unit 1, unit 2, and unit 3 would each be connected through their own 8,000-ampere generator circuit breaker through a short 5,000-ampere isolated phase bus duct to the low side of its dedicated 73/97/122 MVA generator step-up (13.8/230 kV) transformer. The steam turbine generator unit 1 would be connected through its own 8,000-ampere generator circuit breaker via a short 7,000-ampere isolated phase bus duct to the low side of its dedicated 93/124/155 MVA generator step-up (13.8/230 kV) transformer. The high side of each generator step-up transformer would be connected to the project switchyard through a 600-ampere disconnect switch and overhead conductors. (Ex. 2000, p. 5.5-4.)

The auxiliary load, approximately 17.5 MW for power block 1, would be provided by CTG unit 2 and STG unit 1 through their dedicated 500-ampere isolated phase bus ducts and their dedicated back-fed step-down (13.8/4.16 kV) transformers. The high sides of the transformers would each be connected through their dedicated 600-ampere disconnect switches to the common generator tie bus. A single 230 kV generator tie-line would connect power block 1 through a 2,000-ampere circuit breaker and a 2,000-ampere motor-operated disconnect switch to the SCE 230 kV Huntington Beach Switching Station via 1033.5 ACSS overhead generator tie-line which is approximately 0.22 mile long. (Ex. 2000, p. 5.5-5.)

For power block 2, CTG unit 4, unit 5, and unit 6, and steam turbine generator unit 2 would have the same ratings and similar arrangement as the CTGs and STG of the power block 1. The auxiliary load for power block 2 would be provided by CTG unit 5 and STG unit 2. The high sides of the transformers would each be connected through their dedicated 600-ampere disconnect switches to the common generator tie bus. A second, single 230 kV generator tie-line would connect power block 2 through a 2,000-ampere circuit breaker and a 2,000-ampere motor-operated disconnect switch to the SCE 230 kV Huntington Beach Switching Station via 1033.5 ACSS overhead generator tie-line approximately 0.16 mile long. (Ex. 2000, p. 5.5-5.)

The two 230 kV generator tie-lines, supported by single-circuit steel structures, would be built with 1033.5 kcmil ACSS conductor. The generator tie-lines would leave the power blocks connect to the Huntington Beach Switching Station. The Huntington Beach Switching Station is connected to the SCE Ellis Substation. Power would be transmitted to the grid from the Ellis Substation. (Ex. 2000, p. 5.5-5.)

System Impact Study

For the interconnection of a proposed generating unit or transmission facility to the grid, the interconnecting utility (SCE in this case) and the control area operator (CAISO) are responsible for ensuring grid reliability. These entities determine the transmission system impacts of the proposed project, and any mitigation measures needed to ensure system conformance with performance levels required by utility reliability criteria, NERC planning standards, WECC reliability criteria, and CAISO reliability criteria. We utilize these studies and any review conducted by the CAISO to determine the project's effect on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards. (Ex. 2000, p. 5.5-5.)

Phase II Interconnection Study for QC5 Projects

The Phase I and Phase II Interconnection Studies analyze the grid with and without the proposed project under conditions specified in the planning standards and reliability criteria. The studies analyze the impact of the project for the first year of operation and thus are based on a forecast of loads, generation, and transmission developed by the interconnecting utility and the CAISO. Generation and transmission forecasts are established by an interconnection queue. These studies focus on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission system, voltage collapse, loss of loads, or cascading outages), and short circuit duties. (Ex. 2000, p. 5.5-6.)

If the Phase I and Phase II Interconnection Studies show that the interconnection of the project causes the grid to be out of compliance with reliability standards, then the studies will identify mitigation alternatives or ways in which the grid could be brought into compliance with reliability standards. If the mitigation identified by CAISO or interconnecting utility includes transmission modifications or additions that require CEQA review as part of the "whole of the action," we must analyze the environmental impacts of these modifications or additions. (Ex. 2000, p. 5.5-6.)

On December 3, 2013, the CAISO prepared the "Queue Cluster 5 Phase II Interconnection Study Report" in coordination with SCE. This QC5 Phase II Interconnection Study modeled the HBEP project with a net output of 939 MW. (Ex. 2000, p. 5.5-6.) Our analysis of the interconnection impacts of the HBEP is based on this QC5 Phase II Interconnection Study.

The base cases in the QC5 Phase II Interconnection Study were premised on a 2016 load forecast peak and off-peak conditions that included all generation projects in earlier queued Serial Group and clusters, the associated Network Upgrades and Special

Protection Systems, as well as all the CAISO approved transmission upgrade projects. (Ex. 2000, p. 5.5-6.)

The power flow studies were conducted using 2016 summer peak and 2016 summer off-peak base cases with and without the proposed QC5 generation projects interconnected to the SCE grid at each project's proposed interconnection point. The study assessed the QC5 generation projects' impact on thermal loading of the transmission lines and equipment. Short circuit studies were conducted to determine if the QC5 generation projects would overstress existing substation facilities. Transient Stability Analysis was conducted to determine whether the QC5 generation projects would create instability in the system following certain selected outages. Post-Transient Voltage Stability Analysis was conducted to determine whether the generation projects would create voltage deviations in the system following lines and equipment outages. Reactive Power Deficiency analysis was conducted to study the transmission line voltage drops cause by selected outages (Ex. 2000, pp. 5.5-6 – 5.5-7.)

The QC5 Phase II Interconnection Study identified no pre-project and no post-project overload criteria violations under the 2016 summer peak and the 2016 summer off-peak load study conditions. Interconnection of the QC5 projects along with the proposed HBEP project will not cause any transmission lines overloads under normal and contingency conditions. No mitigation is required. Based on this, and in conformity with the power flow study, we find that the transmission system is able to accommodate the HBEP under normal and contingency conditions (Ex. 2000, p. 5.5-7.)

Short Circuit Analysis

Short Circuit studies were performed to determine the degree to which the addition of the QC5 generation projects increase fault duties at SCE substations, adjacent utility substations, and the other 66 kV, 115 kV, 230 kV and 500 kV buses within the study area. The fault duties were calculated with and without the QC5 generation projects to identify any equipment overstress conditions. Buses electrically adjacent to QC5 generation projects and their short circuit duties are listed in QC5 Phase II Appendix H of the Queue QC5 Phase II Interconnection Study Report. (EX. 2000, p. 5.5-7.)

Based on the short circuit study, we find that no additional breaker upgrades are required for the interconnection of the QC5 generation projects.

Ground Grid Evaluation

The Ground Grid Evaluation of the SCE substations indicated that the Ellis Substation would require a further review of the substation ground grid duty. The ground grid must possess sufficient thermal capacity to pass the highest fault current for the required time. If the Ground Grid Evaluation shows there is a need for a ground grid upgrade, the

upgrade would occur inside the substation and no downstream environmental impacts will be anticipated. (Ex. 2000, p. 5.5-7.)

Transient Stability Study Results

Transient stability studies were conducted using the 2016 summer peak and 2016 summer off-peak load base cases to ensure that the transmission system remained in operating equilibrium, as well as operating in a coordinated fashion, through abnormal operating conditions after the QC5 generation projects became operational. Disturbance simulations were performed for a study period of 10 seconds to determine whether the QC5 generation projects would create any system instability during line and generator outages. The Transient Stability study result indicated that the QC5 generation projects along with the HBEP would not cause adverse impacts on the stable operation of the transmission system following the selected Category “B” and Category “C” outages. (Ex. 2000, p. 5.5-8.)

Post-Transient Voltage Analysis Results

Post-Transient Stability Analysis was conducted using the 2016 summer peak and 2016 summer off-peak base cases. NERC/WECC planning standards require that with the addition of the QC5 generation projects, the SCE system post-transient voltage deviation within 5 percent of the pre-project level under Category B contingencies and within 10 percent of pre-project levels under Category C contingencies. The Post-Transient Stability Analysis indicated that the addition of the QC5 generation projects would not cause any adverse impacts to the SCE system. (Ex. 2000, p. 5.5-8.)

Reactive Power Deficiency Analysis Results

Reactive power deficiency analysis was performed to determine the system performance according to the NERC/WECC planning criteria. The reactive power deficiency analysis indicated that the addition of the QC5 generation projects including the HBEP and with all the Delivery Network Upgrades for the QC5 generation projects would not contribute to any reactive power margin violations at SCE buses following selected Category “B” and Category “C” contingencies. (Ex. 2000, p. 5.5-8.)

Based on the foregoing, we find that the HBEP will meet LORS relating to transmission system reliability. We also find that there are no new or modified transmission facilities required downstream of the proposed interconnection.

Cumulative Impacts

Potential cumulative impacts on the transmission network are identified through the utility generator interconnection process. This process analyzes not only the impacts of the proposed project but also all other projects ahead of the studied project in the generation interconnection queue.

The TSE analysis focuses on whether or not a proposed project will meet required codes and standards. At all times the transmission grid must remain in compliance with reliability standards, whether one project or many projects interconnect. Potential cumulative impacts on the transmission network are identified through the CAISO and utility generator interconnection process. In cases where a significant number of proposed generation projects could affect a particular portion of the transmission grid, the interconnecting utility or the CAISO can study the cluster of projects in order to identify the most efficient means to interconnect all of the proposed projects. (Ex. 2000, p. 5.5-8.)

COMPLIANCE WITH LORS

The proposed HBEP interconnection facilities and their terminations will all be adequate in accordance with NERC standards, GO-95 Rules, industry standards, and good utility practices. Condition of Certification **TSE-1**² requires that project owner have the preliminary equipment in place for construction of the transmission facilities. Condition of Certification **TSE-2** will require the project owner to ensure the final design of the proposed transmission facilities complies with LORS. Condition of Certification **TSE-3** requires that the transmission system be properly connected to the transmission grid and that generator output from the HBEP will be properly delivered to the system. Condition of Certification **TSE-4** would ensure that the HBEP would synchronize the existing transmission system. Condition of Certification **TSE-5** requires that the HBEP is built to the required specifications and that operation of the facilities would comply with applicable LORS.

In order to ensure that the HBEP transmission facilities are constructed and operated in compliance with applicable LORS, we impose Conditions of Certification **TSE-1** through **TSE-5**, inclusive. With the imposition of Conditions of Certification **TSE-1** through **TSE-5**, inclusive, we find that the transmission facilities for the HBEP will meet all applicable LORS.

² The Conditions of Certification for Transmission System Engineering are found in Appendix A to this Decision.

FINDINGS OF FACT:

1. The proposed HBEP interconnection facilities and their terminations will all be adequate in accordance with NERC standards, GO-95 Rules, industry standards, and good utility practices, and are acceptable according to the engineering LORS identified in this Decision.
2. The record includes a System Impact Study (SIS) that analyzes potential reliability and congestion impacts that could occur when the HBEP project interconnects to the grid.
3. The interconnection of the HBEP and other generators included in the Phase II Interconnection Study would not result any overstressed breakers in the SCE system.
4. Interconnection of the HBEP would not trigger any downstream transmission system upgrades.
5. The Ellis Substation would require a further review of the substation ground grid duty. If the Ground Grid Evaluation shows there is a need for a ground grid upgrade, the upgrade would occur inside the substation and no downstream environmental impacts are anticipated.

CONCLUSIONS OF LAW

1. With the implementation of the various mitigation measures specified in this Decision and the conditions of certification that follow, the proposed transmission interconnection for the HBEP project will not contribute to significant adverse direct, indirect, or cumulative impacts.
2. The conditions of certification below ensure that the transmission-related aspects of the HBEP project will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in this Decision.

DEFINITION OF TERMS

AAC	All aluminum conductor.
ACSR	Aluminum conductor steel-reinforced.
ACSS	Aluminum conductor steel-supported.
Ampacity	Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, at which damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.
Ampere	The unit of current flowing in a conductor.
Bundled	Two wires, 18 inches apart.
Bus	Conductors that serve as a common connection for two or more circuits.
Conductor	The part of the transmission line (the wire) that carries the current.
Congestion management	A scheduling protocol, which provides that dispatched generation and transmission loading (imports) will not violate criteria.
Double-contingency condition	Also known as emergency or N-2 condition, a forced outage of two system elements usually (but not exclusively) caused by one single event. Examples of an N-2 contingency include loss of two transmission circuits on a single tower line or loss of two elements connected by a common circuit breaker due to the failure of that common breaker.
Emergency overload	See single-contingency condition. This is also called an N-1 condition.
kcmil	One-thousand circular mil. A unit of the conductor's cross-sectional area divided by 1,273 to obtain the area in square inches.
Kilovolt (kV)	A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground.
Loop	An electrical cul-de-sac. A transmission configuration that interrupts an existing circuit, diverts it to another connection, and returns it back to the interrupted circuit, thus forming a loop or cul-de-sac.
Megavar	One megavolt ampere reactive.
Megavars	Mega-volt-ampere-reactive. One million volt-ampere-reactive. Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system.

Megavolt ampere (MVA)

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

Megawatt (MW) A unit of power equivalent to 1,341 horsepower.

N-0 condition See normal operation/normal overload.

Normal operation/normal overload (N-0)

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

N-1 condition See single-contingency condition.

N-2 condition See double-contingency condition.

Outlet Transmission facilities (e.g., circuit, transformer, circuit breaker) linking generation facilities to the main grid.)

Power flow analysis

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

Reactive power

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

Remedial action scheme (RAS)

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

SF6 Sulfur hexafluoride is an insulating medium.

Single-contingency condition

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

Solid dielectric cable

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

Special protection scheme/system (SPS)

An SPS detects a transmission outage (either a single or credible multiple contingency) or an overloaded transmission facility and then trips or runs back generation output to avoid potential overloaded facilities or other criteria violations.

Switchyard

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

Thermal rating See ampacity.

TSE Transmission System Engineering.

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

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

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

INTRODUCTION

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 the evidence 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. (2000, p. 4.11-1.)

The federal, state, and local laws and policies in the next section apply to the control of the field and non-field impacts of electric power lines. Our analysis examines the project’s compliance with these requirements.

METHODOLOGY AND THRESHOLDS FOR DETERMINING ENVIRONMENTAL CONSEQUENCES

The Laws, Ordinances, Regulations, and Standards (LORS) and practices listed in **TLSN Table 1** have been established to maintain impacts below levels of potential environmental significance. Thus, if we determine that the project would comply with applicable LORS, we similarly conclude that any transmission line-related safety and nuisance impacts would be less than significant. The nature of these individual impacts is discussed below together with the potential for compliance with the LORS that apply.

**Transmission Line Safety and Nuisance (TLSN) Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Aviation Safety	
Federal	
<ul style="list-style-type: none"> ○ Title 14, Part 77 of the Code of Federal Regulations (CFR), "Objects Affecting the Navigable Air Space" 	<ul style="list-style-type: none"> ○ 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.
<ul style="list-style-type: none"> ○ FAA Advisory Circular No. 70/7460-1G, "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space" 	<ul style="list-style-type: none"> ○ 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.
<ul style="list-style-type: none"> ○ FAA Advisory Circular 70/7460-1G, "Obstruction Marking and Lighting" 	<ul style="list-style-type: none"> ○ 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.

Applicable LORS	Description
Interference with Radio Frequency Communication	
Federal	
o Title 47, CFR, section 15.2524, Federal Communications Commission (FCC)	o Prohibits operation of devices that can interfere with radio-frequency communication.
State	
o California Public Utilities Commission (CPUC) General Order 52 (GO-52)	o Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	
Local	
city of Huntington Beach General Plan.	Identifies and appraises noise problems within the community and assists the City in making land use decisions
city of Huntington Beach Municipal Code, Chapter 8.40	Establishes performance standards that noise sources should achieve at existing or planned residential or other noise-sensitive land uses.
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.
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.

Applicable LORS		Description
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.	

(Ex. 2000, pp. 4.11-2 – 4.11-3.)

SETTING AND EXISTING CONDITIONS

*For general project description, including location of the facility and the equipment to be installed, please see the "**PROJECT DESCRIPTION AND PURPOSE**" section of this Decision (Section II, above).*

The proposed project would be located on 28.6 acres in an industrial area of Huntington Beach, California at 21730 Newland Street just north of the intersection of the Pacific Coast Highway (Highway 1) and Newland Street, entirely within the boundary of the existing Huntington Beach Generating Station, an operating power plant that would cease operations once HBEP construction is complete. HBEP would connect to the regional electric power grid through the existing Southern California (SCE) 230-kilovolt (kV) switchyard located within the site of the existing Huntington Beach Generating Station. The proposed line would consist of the two 230-kV circuits that would connect the two HBEP power blocks to this SCE switchyard. No offsite lines are proposed as part of HBEP. (Ex. 2000, p. 4.11-3.)

Since the proposed project's transmission line would be located within the site of an existing power plant without nearby residents, we find that residential exposure to the generated fields would not occur.

PROJECT DESCRIPTION

For purposes of analyzing transmission line safety and nuisance, the project consists of the following:

- The first generator tie-line connecting HBEP's power block 1 to the existing SCE on-site switchyard; and
- The second generator tie-line connecting HBEP's power block 2 to the same SCE on-site switchyard.

(Ex. 2000, p. 4.11-3.)

The connector line for power block 1 would be approximately 0.22 miles, while the one for power block 2 would be 0.16 miles. Each line would be designed as a combination of single-and/ or double-circle line to be supported on self-supporting steel structures. The lines' conductors would be aluminum steel-supported cables as typical of similar SCE lines. The applicant provided the details of the proposed support structures as related to line safety, maintainability, and field reduction efficiency. (Ex. 1001, pp. 3-2 – 3-6; Ex. 2000, p. 4.11-4.)

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Direct Impacts and Mitigation

Aviation Safety

For HBEP, any potential hazard to area aircraft would relate to the potential for collision in the navigable airspace. The Federal Aviation Administration (FAA) must be notified whenever (1) a structure will be over 200 feet in height or (2) where a structure, regardless of height, is located within the restricted airspace in the approaches to public or military airports. For airports with runways longer than 3,200 feet, the restricted space is defined by the FAA as an area extending 20,000 feet from the runway. For airports with runways of 3,200 feet or less, the restricted airspace would be an area that extends 10,000 feet from this runway. For heliports, the restricted space is an area that extends 5,000 feet. (Ex. 2000, p. 4.11-4.)

The nearest public airport to the project site is the John Wayne Airport, located approximately 5.9 miles to the east. The nearest military airport is the Los Alamitos Army Airfield approximately 10.5 miles to the north. In addition to these two airports, six private or private area heliports are located near the HBEP. None of these airports and heliports is close enough for any line-related collision hazards. (Ex. 2000, p. 4.11-4.) Therefore, we conclude that the HBEP does not present any impacts to aviation safety.

Interference with Radio-Frequency Communication

Transmission line-related radio-frequency interference is one of the indirect effects of line operation and is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge, but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The level of any such interference usually depends on the magnitude of the electric fields involved and the distance from the line. The potential for

such impacts is therefore minimized by reducing the line electric fields and locating the line away from inhabited areas. (Ex. 2000, pp. 4.11-4 – 4.11-5.)

The HBEP line would be built and maintained according to standard practices that minimize surface irregularities and discontinuities. Moreover, the potential for such corona-related interference is usually of concern for lines of 345 kV and above, and not for 230-kV lines such as the proposed line. The proposed low-corona designs are used for SCE lines of similar voltage rating to reduce surface electric field gradients and the related potential for corona effects. (Ex. 2000, p. 4.11-5.)

Because the proposed lines would be located within an existing power plant with no nearby residents, we find that the project will not produce any corona-related radio-frequency interference or complaints

Audible Noise

Audible noise usually results from the action of the electric field at the surface of the line conductor and is described as a characteristic crackling, frying, or hissing sound or hum, especially in wet weather. As with radio noise, such audible noise is not specifically addressed by federal or state regulations in terms of specific noise limits. Instead, audible noise is limited through design, construction, or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency, maintainability, and reliability. The noise level depends on the strength of the line's electric field, and is increased during rainfall. Most audible noise occurs mainly from overhead lines of 345 kV or higher. Research by the Electric Power Research Institute has shown that the fair-weather audible noise from modern transmission lines is generally indistinguishable from background noise 100 feet or more from the edge of the transmission line's right-of-way. (Ex. 2000, p. 4.11-5.)

For HBEP, the proposed line right-of-way would fall entirely within the boundaries of an existing power plant with similar connecting lines. In addition, HBEP will use low-corona designs that are designed to minimize field strengths. The lines themselves are 230-kV. (Ex. 2000, p. 4.11-5.)

Therefore, we find that the proposed line operation does not add significantly to current background noise levels in the project area. For an assessment of the noise from the proposed project and related facilities, please refer to the **NOISE AND VIBRATION** section of this Decision.

Fire Hazards

The fire hazards addressed through the related LORS in **TLSN Table 1** are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects. (Ex. 2000, p. 4.11-5.)

The requirements of the existing SCE fire prevention and suppression program would be implemented for the proposed project line. In addition, the project shall comply with California Public Utilities Commission (CPUC) General Order 95 (GO-95), which governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements. (Ex. 2000, p. 4.11-5.)

We therefore impose Condition of Certification **TLSN-3**¹ to ensure compliance with the SCE fire prevention and suppression program and GO-95. With the imposition of Condition of Certification **TLSN-3**, we find that any potential impacts related to fire hazards from the operation of the transmission lines are reduced to a level of “less than significant” under CEQA.

Hazardous Shocks

Hazardous shocks are those that could result from direct or indirect contact between an individual and the energized line, whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines. (Ex. 2000, p. 4.11-6.)

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. In California, GO-95 governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements. (Ex. 2000, p. 4.11-6.)

Under Condition of Certification **TLSN-1**, the Applicant would be required to implement the requirements of GO-95. We therefore impose Condition of Certification **TLSN-1**; with its imposition, we find any potential impacts related to hazardous shocks from the operation of the transmission lines are mitigated and the project would comply with the applicable LORS for prevention of hazardous shocks.

Nuisance Shocks

Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm and are usually the result of direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line’s electric and magnetic fields. (Ex. 2000, p. 4.11-6.)

There are no design-specific federal or state regulations to limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks

¹ The Conditions of Certification for Transmission Line Safety and Nuisance are found in Appendix A to this Decision.

are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). For the proposed project line, the project owner will be responsible in all cases for ensuring compliance with these grounding-related practices within the transmission line right-of-way. (Ex. 2000, p. 4.11-6.)

We therefore impose Condition of Certification **TLSN-4** that requires the project owner to use standard industry grounding practices for HBEP. With the imposition of Condition of Certification **TLSN-4**, we find any potential impacts related to nuisance shocks from the operation of the transmission lines are reduced to a level of “less than significant” under CEQA.

Electric and Magnetic Field Exposure

In recent years, public concern about possible adverse health effects from exposure to electric and magnetic fields (EMF) has risen. EMF occur whenever electricity flows. However, there is no clear evidence establishing that EMF fields pose a significant health hazard to exposed humans. (Ex. 2000, pp. 4.11-6 - 4.11-7.)

Even though there is considerable uncertainty about EMF health effects, current policies and practices are informed by the available information showing that:

- 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.

(Ex. 2000, p. 4.11-7.)

The CPUC regulates the installation and operation of high-voltage lines and has determined that only no-cost or low-cost measures are justified in any effort to reduce power line fields to address EMF-related health concerns, and that these measures should be made only in connection with new or modified lines. In this regard, the CPUC requires each utility within its jurisdiction to establish EMF-reducing measures and incorporate them into the design of new or modified powerlines for each service area. The only project-related EMF exposures of potential significance are the short-term exposures of plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the vicinity of the lines. These types of exposures are short term and well understood as not significantly related to the health concern. Designing the HBEP project lines according to existing SCE field strength-reducing guidelines would constitute compliance with the CPUC requirements for line field management. (Ex. 2000, p. 4.11-7.)

As with similar SCE lines, specific field strength-reducing measures would be incorporated into the proposed line design to ensure the field strength minimization currently required by the CPUC in light of the concern over EMF exposure and health.

The field reduction measures that shall be applied include the following:

1. increasing the distance between the conductors and the ground to an optimal level;
2. reducing the spacing between the conductors to an optimal level;
3. minimizing the current in the line; and
4. arranging current flow to maximize the cancellation effects from interacting of conductor fields.

(Ex. 2000, p. 4.11-9.)

Because the route of the proposed project's transmission line would have no nearby residences, the long-term residential field exposures at the root of the health concern of recent years would not be a significant concern. The field strengths of most significance in this regard would be as encountered within the boundaries of the existing HBGS. These field intensities would depend on the effectiveness of the applied field-reducing measures. (Ex. 2000, p. 4.11-9.)

The applicant calculated the maximum electric and magnetic field intensities expected when the two proposed line circuits are energized. The maximum electric field strength was calculated as 0.51 kV/m directly underneath and 0.015 kV/m at the edge of the HEBP boundary while the maximum operational magnetic field strength was calculated as 32.4 mG underneath the lines and 1.0 mG at the edge of the HEBP site boundary. These field strength values are similar to those of similar SCE lines (as required under current CPUC regulations) but, in the case of the magnetic field, the estimate is much less than the 150- 250 mG currently specified by the few states with regulatory limits.(Ex. 1001, pp. 3.7 – 3.8; Ex. 2000, p. 4.11-9.)

We impose Condition of Certification **TLSN-2**, requiring the project owner to make field strength measurements to assess the HBEP's assumed field reduction efficiency. With the imposition of Condition of Certification **TLSN-2**, we find any potential impacts related to electric and magnetic field exposure from the operation of the transmission lines are mitigated and that

Cumulative impacts

Operating any given project may lead to significant adverse cumulative impacts when its effects are considered cumulatively considerable. "Cumulatively considerable" means in this context that the incremental field and non-field effects of an individual project would be significant when considered together with the effects of past, existing, and future

projects (California Code Regulation, title 14, section 15130). When field intensities are measured or calculated for a specific location, they reflect the interactive, and therefore, cumulative effects of fields from all contributing conductors. This interaction could be additive or subtractive depending on prevailing conditions. For the proposed project's transmission lines, this interaction would occur between the HBEP-related fields and the fields from nearby SCE lines. Since the proposed project's transmission lines would be designed, built, and operated according to applicable field-reducing SCE guidelines (as currently required by the CPUC for effective field management), any contribution to cumulative area exposures should be at levels expected for SCE lines of similar voltage and current-carrying capacity and not considered environmentally significant in the present health risk-based regulatory scheme. The actual field strengths and contribution levels for the proposed line design will be assessed from the results of the field strength measurements specified in Condition of Certification **TLSN-2**.

We therefore find that there are no cumulative impacts from the construction of the transmission lines associated with the HBEP.

Facility Closure

If the proposed HBEP were to be closed and decommissioned, and all related structures removed as described in the **PROJECT DESCRIPTION** section, the minimal electric shocks and fire hazards from the physical presence of this tie-in line would be eliminated. Decommissioning and removal would also eliminate the transmission lines' field and non-field impacts assessed in this analysis in terms of nuisance shocks, radio-frequency impacts, audible noise, and electric and magnetic field exposure, and aviation safety. Since the lines would be designed and operated according existing SCE guidelines, these impacts would be as expected for SCE lines of the same voltage and current-carrying capacity and therefore, at levels reflecting compliance with existing health and safety LORS.

PUBLIC COMMENT

The public offered no comment on the subject of Transmission Line Safety and Nuisance.

FINDINGS OF FACT

1. HBEP power transmission will be through two 230-kV lines to be located within the existing HBGS site.
2. The absence of residences in the immediate vicinity means that there would not be the types of residential field exposure at the root of the health concern of recent years.

3. The transmission lines would be owned, operated, and maintained by the Applicant according to SCE guidelines that ensure line safety, efficiency, reliability and maintainability.
4. The project location, the related line routes, and the line supports do not pose a significant aviation hazard.
5. The HBEP project will comply with all applicable LORS and, therefore, any transmission line-related safety and nuisance impacts will not be significant.
6. Building and maintaining the project's lines in accordance with standard SCE practices minimizes the potential for corona noise and its related interference with radio-frequency communication.
7. The transmission line operation will not add significantly to current background noise levels in the project area.
8. The potential for hazardous shocks will be minimized with compliance with the height and clearance requirements of CPUC General Order 95.
9. There are no potential fire hazards associated with the project's transmission lines; however, compliance with California Code of Regulations, Title 14, section 1250, will minimize possible fire hazards.
10. The potential for nuisance shocks will be minimized through grounding and other field-reducing measures performed in accordance with CPUC General Order 95.
11. Long-term electromagnetic field exposure is insignificant in this case because of the general absence of residences along the proposed route.
12. 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.
13. HBEP, when analyzed with other existing and reasonable foreseeable projects, will not result in cumulatively considerable impacts on the environment.
14. The conditions of certification reasonably ensure that the project's transmission lines will not have significant direct, indirect, or cumulative 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.

CONCLUSION OF LAW

We conclude that, with implementation of the Conditions of Certification, the project will conform to all applicable laws, ordinances, regulations, and standards relating to **TRANSMISSION LINE SAFETY AND NUISANCE** as identified in this Decision.

IV. PUBLIC HEALTH AND SAFETY

Construction and operation of the Huntington Beach Energy Project (HBEP) will create combustion products and utilize certain hazardous materials that pose health risks to the general public and to the workers at the facility. The following discusses the regulatory programs, standards, protocols, and analyses pertaining to these issues.

A. GREENHOUSE GAS (GHG) EMISSIONS

SUMMARY AND DISCUSSION OF THE EVIDENCE

Criteria air pollutants are defined as air contaminants for which the state and/or federal government has established an ambient air quality standard to protect public health. The criteria pollutants analyzed are nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), inhalable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}). (Ex. 2000, p. 4.1-2.)

GHG emissions are not criteria pollutants; they are discussed in the context of cumulative impacts. In December 2009, the U.S. Environmental Protection Agency (EPA) declared that greenhouse gases (GHGs) threaten the public health and welfare of the American people (the so-called “endangerment finding”), and this became effective on January 14, 2010. Regulating GHGs at the federal level is required by the Prevention of Significant Deterioration Program (PSD) for sources that exceed 100,000 tons per year of carbon dioxide-equivalent emissions. (Ex. 2000, p. 4.1-83.)

Federal rules that became effective December 29, 2009 (40 CFR 98) require federal reporting of GHGs. We therefore evaluate the ability of the project to comply with existing federal- and state-level policies and programs for GHGs. The State has demonstrated a clear willingness to address global climate change through research, adaptation¹, and GHG inventory reductions. (Ex. 2000, p. 4.1-83.)

The GHGs include carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). CO₂ emissions are far and away the most common of these emissions. As a result, even though the other GHGs have a greater impact on climate change on a per-unit basis, GHG emissions are often expressed in terms of “metric tons of CO₂-equivalent” (MTCO₂e) for simplicity. (Ex. 2000, p 4.1-85.)

There is general scientific consensus that climate change is occurring and that man-made emissions of GHG, if not sufficiently curtailed, are likely to contribute further to

¹ While working to understand and reverse global climate change, it is prudent to also adapt to its effects such as sea level rise and changing rainfall patterns.

continued increases in global temperatures. Adding GHG to the atmosphere increases the insulating power of the air and thereby traps more heat at and near the earth's surface. The California Legislature has declared that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Ex. 2000, p. 4.1-87.)

In this part of the Decision we determine that:

- The HBEP construction-produced GHG emissions will be insignificant;
- From a physical standpoint, the GHG emissions from a power plant's operation should be assessed not by treating the plant as a standalone facility operating in a vacuum, but rather in the context of the operation of the entire electricity system of which the plant is an integrated part;
- From a policy and regulatory standpoint, the GHG emissions from a power plant's operation should be assessed in the context of the state's GHG laws and policies, such as AB 32; and
- The HBEP's operation will be consistent with the state's GHG policies and will help achieve the state's GHG goals, by (1) causing a decrease in overall electricity system GHG emissions; and (2) fostering the addition of renewable generation into the system, which will further reduce system GHG emissions.

As a result we find that the HBEP's GHG emissions will comply with all applicable laws, ordinances, regulations, and standards (LORS) identified below in **Greenhouse Gas Table 1** and will not result in any significant environmental impacts. We also find that the project is consistent with California's ambitious GHG goals and policies.

Evidence on the topic of Greenhouse Gas Emissions is found in the following exhibits: Ex. 1001, 1004, 1012, 1013, 1015, 1016, 1017, 1018, 1019, 1023, 1025, 1026, 1028, 1029, 1032, 1033, 1035, 1039, 1042, 1049, 1050, 1053, 1055, 1056, 1062, 1065, 1066, 1070, 1072, 1073, 1075, 1077, 1083, 1085, 1088, 1094, 1095, 1099, 1101, 1103, 1106, 1108, 1118, 1119, 1129, 1130, 1131, 1132, 1135, 1136, 1137, 2000, 4001, 4002, 4003, 4004, 4010, 4011, 4013, 4014, 4015, 4016, 4017, 4018, 4019, 4020, 4021, 4022, 4023, 4026, 4027, 4028, 4029, 4020, 4031, 4032, 4033, 4034, and 4035.(07/21/14 RT 29:13-31:25.) This topic was disputed. (08/06/14 RT 53:17-69:11.)

POLICY AND REGULATORY FRAMEWORK

The California Legislature stated 35 years ago: "it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection." (Pub. Resources Code, § 25001.) Today, as a result of legislation, the most recent aspect of

“environmental quality protection” is the reduction of GHG emissions. Several laws and statements of policy are applicable as shown in **Greenhouse Gas Table 1** below.

**Greenhouse Gas Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Federal	
40 Code of Federal Regulations (CFR) Parts 51, 52, 70 and 71	This rule “tailors” GHG emissions to PSD and Title V permitting applicability criteria.
40 Code of Federal Regulations (CFR) Parts 51 and 52	A new stationary source that emits more than 100,000 TPY of greenhouse gases (GHGs) is also considered to be a major stationary source subject to Prevention of Significant Determination (PSD) requirements. For permits issued on or after July 1, 2011 PSD applies to GHGs if the source is otherwise subject to PSD (for another regulated NSR pollutant), and the source has a GHG potential to emit (PTE) equal to or greater than 75,000 TPY CO ₂ e. The proposed facility modifications are subject to the GHG PSD analysis.
40 Code of Federal Regulations (CFR) Part 98	This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO ₂ equivalent emissions per year. This requirement is triggered by this facility.
State	
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	This act requires the California Air Resource Board (ARB) to enact standards to reduce GHG emission to 1990 levels by 2020. Electricity production facilities will be regulated by the ARB. A cap-and-trade program became active in January 2012, with enforcement beginning in January 2013. Cap-and-trade is expected to achieve approximately 20 percent of the GHG reductions expected under AB 32 by 2020.
California Code of Regulations, Title 17, Subchapter 10, Article 2, sections 95100 et. seq.	These ARB regulations implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)

Applicable LORS	Description
Title 20, California Code of Regulations, Section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 MTCO ₂ /MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs CO ₂ /MWh).
Local	
Rule 1714 – Prevention of Significant Deterioration for Greenhouse Gases, Gas Turbines	This rule establishes preconstruction review requirements for greenhouse gases (GHG). This rule is consistent with federal PSD rule as defined in 40 CFR Part 52.21. This rule requires the owner or operator of a new major source or a major modification to obtain a PSD permit prior to commencing construction.

Cap and Trade

HBEP is required to participate in California’s GHG cap-and-trade program. This cap-and-trade program is part of a broad effort by the State of California to reduce GHG emissions as required by AB 32, which is being implemented by ARB. As currently implemented, market participants such as HBEP are required to report their GHG emissions and to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing allowances from the capped market and offsets from outside the AB 32 program. As new participants enter the market and as the market cap is ratcheted down over time, GHG emission allowance and offset prices will increase encouraging innovation by market participants to reduce their GHG emissions. Thus, HBEP, as a GHG cap-and-trade participant, would be consistent with California’s landmark AB 32 Program, which is a statewide program coordinated with a region wide WCI program to reduce California’s GHG emissions to 1990 levels by 2020. (Ex. 2000, p. 4.1-90.)

Renewable Portfolio Standard

California statutory law requires the state’s utilities to provide at least 20 percent of their electricity supplies from renewable sources by the year 2020. (Pub. Util. Code, § 399.11 et seq.) Recent gubernatorial Executive Orders increase the requirement to 33 percent and ARB adopted regulations to achieve the goal. [Governor’s Exec. Orders Nos. S-21-09 (Sept. 15, 2009), S-14-08 (Nov. 17, 2008).] On April 12, 2011, Governor Edmund G. Brown, Jr. signed SBX1 2, which establishes the 33 percent requirement as state law. This law also provides support for our conclusion that in licensing a facility under our jurisdiction, we must assess whether it would be consistent with and support the renewable energy objectives expressed in the Renewable Portfolio Standard.

Federal New Source Performance Standard

On January 8, 2014, in the Federal Register the US EPA proposed New Source Performance Standard (NSPS) for GHG emissions for new electric power plants (Federal Register, Volume 79, No. 5); the requirement is effective on the date of publication unless it is significantly revised. This new requirement would limit large natural gas-fired stationary combustion turbines to no more than 1,000 lbs CO₂ per MWh and small natural gas-fired stationary combustion turbines to no more than 1,100 lbs CO₂ per MWh. Large natural gas-fired stationary combustion turbines are those with heat input ratings greater than 850 MMBtu/h (approximately 100 MWe) and small natural gas-fired stationary combustion turbines are those with heat input ratings less than 850 MMBtu/h. According to U.S. EPA, the proposed NSPS limits apply to an electric generating unit if it supplies more than one-third of its potential electric output and more than 219,000 MWh net electric output to the grid per year. (Ex. 2000, p. 4.1-91.)

Loading Order

In 2003 the Energy Commission and the CPUC agreed on a “loading order” for meeting electricity needs. The first resources that should be added are energy efficiency and demand response (at the maximum level that is feasible and cost-effective) followed by renewables, distributed generation and combined heat and power (also known as cogeneration) and finally efficient fossil sources and infrastructure development.² ARB’s AB 32 Scoping Plan reflects these policy preferences. (California Air Resources Board, Climate Change Scoping Plan, December 2008.) In evaluating a facility under our jurisdiction, we examine its expected efficiency, and compare it to the other plants in the system and which it may displace. (Ex. 2000, p. 4.1-95.)

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² California Energy Commission 2008, *2008 Integrated Energy Policy Report Update*, (IEPR) (CEC-100-2008-008-CMF.)

³ California Energy Commission 2008, *2008 Integrated Energy Policy Report Update*, (IEPR) (CEC-100-2008-008-CMF.)

our jurisdiction, we examine its expected efficiency, and compare it to the other plants in the system and which it may displace.

CEQA Guidelines on GHG Emissions⁴

The California Natural Resources Agency recently amended its Guidelines for Implementation of the California Environmental Quality Act (“CEQA Guidelines”) to address greenhouse gas emissions. The Guidelines direct lead agencies “to make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project,” and permit agencies to “use a model or methodology to quantify greenhouse gases . . . and/or . . . rely on qualitative analysis or performance-based standards.” (14 Cal. Code Regs., § 15064.4(a).)

The Guidelines set forth three factors for a lead agency to consider, among others, in assessing the significance of impact from GHG emissions and the environment: “(1) the extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency applies to the project; [and] (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide regional or local plan for the reduction or mitigation of greenhouse gas emissions.” (14 Cal. Code Regs., § 15064.4(a).)

While the Guidelines do not specify any threshold of significance for GHGs, they continue to encourage agencies to adopt quantitative thresholds of significance for pollutants through a formal rulemaking process, and the amendments to expressly allow agencies to “consider thresholds previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such a threshold is supported by substantial evidence.” (Cal. Code Regs., tit. 14, § 15064.7.) The Energy Commission relies on these guidelines in evaluating the degree to which a project will increase GHG emissions and the significance of any such increases.

Implementation of the federal, state and Energy Commission policies discussed above should result in increasing availability and flexibility of renewable generation. Gas-fired power plants such as HBEP currently play a vital role in advancing the state’s climate and energy goals by displacing less-efficient generation resources and facilitating the

4 The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq.,(Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as “CEQA”.

integration of renewables into the system. However, as the Energy Commission observed in its December, 2009 decision on the *Avenal* Energy Plant project (08-AFC-1)⁵, the ability of gas-fired generation to contribute to the State's climate and energy goals is limited. The availability of renewable generation will increase as new projects are licensed and built and the technology develops. Efficiency and conservation measures have already had a substantial impact on California's energy consumption, and new measures continue to be implemented. We therefore expect that the proportion of gas generation in the state's generation mix will gradually diminish. Accordingly, we must evaluate the consistency of each proposed gas-fired power plant with these policies in order to ensure that we license only those plants which will help to reduce GHG.

In the *Avenal* Decision, the Energy Commission established a three-part test to aid in its analysis of a proposed gas-fired plant's ability to advance the goals and policies described above. Gas-fired plants must:

- not increase the overall system heat rate for natural gas plants;
- not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and
- reduce system-wide GHG emissions and support the goals and policies of AB32.

Avenal was decided before the Natural Resources Agency amended its CEQA Guidelines to specifically address GHG Emissions. Guidelines section 15064.4(b)(1) & (3):

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

The factors of *Avenal* are thus consistent with the CEQA Guidelines. Thus, whether under the Guidelines or *Avenal*, these policies direct us to assess GHG emission impacts by evaluating the effect of project operation on the GHG emissions of existing generation and on the integration of existing and new renewable generation. Both of

⁵ California Energy Commission, 2009 Final Commission Decision for the *Avenal* Energy Plant (CEC-800-2009-006-CMF, December 2009).

these types of effects must be evaluated to determine a project's GHG emissions impacts. We now turn to a discussion of whether, and how well, the project would comply with the above-stated policies.

CONSTRUCTION EMISSIONS AND IMPACTS

Power plant construction involves vehicles and other equipment that emit GHG. The HBEP's construction emissions are projected at 2960 metric tons of CO₂-equivalent GHG during the 90-month construction period as shown below in **Green House Gas Table 2** below.

Greenhouse Gas Table 2
HBEP, Estimated Maximum Annual Construction Greenhouse Gas Emissions

	CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction Total (Metric Tons)	2,938	0.14	0.06	2,960

(Note: One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.

(Ex. 2000, p. 4.1-92.)

The evidence shows that the GHG emission increases from construction activities would not be significant for several reasons. First, the emissions would be intermittent during the construction period, not ongoing during the life of the project. Additionally, implementation of control measures to address criteria pollutant emissions, such as limiting idling times and requiring, as appropriate, equipment that meets the latest criteria pollutant emissions standards, would further minimize greenhouse gas emissions to the extent feasible. The use of newer equipment will increase efficiency and reduce GHG emissions and be compatible with low-carbon fuel (e.g., bio-diesel and ethanol) mandates that will likely be part of future ARB regulations to reduce GHG from construction vehicles and equipment. (Ex. 2000, p. 4.1-93.)

We find that such measures directly and indirectly limit the emission of GHGs during the construction of the HBEP and are in accordance with current best practices. We also note that the GHG emissions anticipated from construction are minimal compared with anticipated operational emissions. GHG emissions will be intermittent and mitigated during that time due to the implementation of the best practices incorporated into **AIR QUALITY** Condition of Certification **AQ-SC5**. We therefore find that the GHG emissions from construction activities will not result in a significant adverse impact.

OPERATIONS EMISSIONS AND IMPACTS

The proposed HBEP would consist of two three-on-one combined-cycle power blocks, with three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbine generators (CTG) and associated equipment in each block. The primary sources of

GHG would be the natural gas fired combustion turbines. The employee and delivery traffic GHG emissions from off-site activities are negligible in comparison with the gas turbine GHG emissions.

Greenhouse Gas Table 3 shows estimated actual annual emissions including all operations. All emissions are converted to CO₂-equivalent and totaled. Electricity generation GHG emissions are generally dominated by CO₂ emissions from the carbon-based fuels; other sources of GHG are typically small and also are more likely to be easily controlled or reused/recycled, but are nevertheless documented here as some of the compounds have very high relative global warming potentials.

**Greenhouse Gas Table 3
HBEP, Estimated Potential Greenhouse Gas (GHG) Emissions**

Emissions Source	Operational GHG Emissions (MTCO ₂ /MWh) ^a
Total Project GHG Emissions (MTCO₂/yr)	1,997,634
Estimated Annual Energy Output (MWh/yr)^b	4,170,821
Estimated Annualized GHG Performance (MTCO₂/MWh)	0.479

Notes: a. One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
b. Annualized basis uses the project owner's assumed maximum permitted operating basis.

(Ex. 2000, p. 4.1-93.)

Determining Impact Significance: A System Approach

The process of electricity generation, production, and consumption is unique compared to other industrial projects. As a result, assessing the GHG impacts of power plants requires an approach that is different from the approach taken to analyze any other type of project, whether the analysis is scientific or legal.

In general, when an agency conducts a CEQA analysis of a project such as a proposed factory, shopping mall, or residential subdivision, it does not need to analyze how the operation of the proposed project will affect the larger system or group of factories, malls, or houses in a large multistate region. Rather, such projects are generally analyzed and evaluated on a stand-alone basis. The analysis and evaluation for power plants is, by necessity, different.

California's electricity system – which is actually a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex. Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity is produced and consumed

instantaneously, and will be unless and until large-scale electricity storage technologies are available, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators. (Committee CEQA Guidance (*Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications*), CEC-700-2009-004.)⁶The California Independent System Operator (CAISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus, the CAISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). (*Id.*) Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), when one power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated. (R/T 8-6-14, 58:6 – 60: 4.)

In sum, the unique way power plants operate in an integrated system means that we must assess their operational GHG emissions on a system-wide basis rather than on a stand-alone basis.

We now turn to the specifics of the project's operation.

HBEP's Effects on the Electricity System

Providing Capacity and Ancillary Services

The need for natural gas-fired generation to reliably operate the electricity system is well established. On October 8, 2008, the Energy Commission adopted an Order Instituting Informational Proceeding (08-GHG OII-1) to solicit comments on how to assess the greenhouse gas impacts of proposed new power plants in accordance with the California Environmental Quality Act (CEQA).⁷ A report prepared as a response to the GHG OII defines the roles that natural gas-fired power plants fulfill in an evolving high-renewables, low-GHG system. Such new facilities serve to:

- Provide variable generation and grid operations support;
- Meet extreme load and system emergency requirements;
- Meet local capacity requirements; and,

⁶ The report was issued in March 2009 and is found on the Commission website at: <http://www.energy.ca.gov/2009publications/CEC-700-2009-004/CEC-700-2009-004.PDF>.

⁷ This need for gas-fired generation to reliably operate the system was reaffirmed in the CPUC decision authorizing Southern California Edison to procure new gas-fired generation in the Los Angeles Basin. D.13-02-015, See Decision Authorizing Long-Term Procurement for Local Capacity Requirements, February 13, 2013, p. 2.

- Provide general energy support.

Variable Generation and Grid Operations Support:

California's renewable portfolio standard (RPS) requires that the state's energy service providers meet 33 percent of retail sales with renewable energy by 2020; meeting GHG emission reduction targets for 2050 will likely require a far higher percentage. Much of this energy will come from variable wind and solar resources to be developed in California, or on an "as generated" basis from neighboring states. Further, demand response and other dispatchable distributed technologies have clear potential to provide similar services in the future, but are not at present available in the proper form and at sufficient scale for system-level load following. (Ex. 2000, p. 4.1-96.)

The California Independent System Operator (CAISO) has identified an increased need for regulation services, "load-following" generation, and multi-hour ramping as a result of the increase in these variable ("intermittent energy") renewable resources, whose output changes over the course of the day, often in a sudden and unpredictable fashion. Dispatchable capacity must provide "regulation," small changes in output over a 5-minute period at CAISO direction, requiring that the generator be equipped with automated generation control (AGC). (Ex. 2000, p. 4.1-96.)

Natural gas-fired power plants are currently the only type of new facility that can provide these "ancillary" services in the quantities needed now and in the near future. While dispatchable hydroelectric plants can also provide them, the potential for adding hydroelectric resources to the system is limited. Historically, a large share of California's load-following and ramping needs have been provided by the natural gas-fired steam turbines built on the Pacific coast and in the San Francisco Bay Delta during the 1960s and 1970s. While these units were modified to operate successfully as load followers, they are not as efficient or economic as newer technologies. (Ex. 2000, p. 4.1-97.)

Extreme Load and System Emergency Requirements:

Sufficient capacity must exist to meet demand under very high load conditions or when generator outages reduce capacity surpluses to levels low enough to threaten reliability. Historically, generation capacity and demand response programs equal to 115 percent to 117 percent of forecasted annual peak demand have been deemed sufficient to meet reliability requirements. (Ex. 2000, p. 4.1-98.)

Local Capacity Requirements

The CAISO has identified numerous local capacity areas (LCA) and sub-areas in which threshold amounts of capacity are required to ensure reliability. Transmission constraints prevent the import of sufficient energy into these areas under high load

conditions to ensure reliable service without requiring specified amounts of capacity be generating or available to the CAISO for immediate dispatch. (Ex. 2000, p. 4.1-97.)

The need for natural-gas fired capacity in LCAs stems in part from their predominantly urban nature and coastal location (i.e., fewer transmission lines into the coastal region as none are available from the west or ocean-side of the basin). The local capacity requirements (LCRs) of the Greater Bay Area, Los Angeles Basin, San Diego and Big Creek-Ventura LCAs are too large to be met solely with non-natural gas fired generation; the renewable development scenarios compiled by the CPUC for use in the 2012 LTPP proceeding – and those being considered in the 2014 proceeding – indicate that only a share of the new capacity needed in the large LCAs can be expected to come from new renewable resources. This share is not sufficient to eliminate the need for new natural-gas fired generation in the Los Angeles Basin LCA, as evidenced by the procurement authorization issued in that proceeding. (Ex. 2000, p. 4.1-97.)

General Energy Support

The loading order indicates the resources that the state intends to rely on to meet energy needs while reducing GHG emissions. While energy efficiency, demand response programs, renewable generation, and combined heat and power are preferred resources that are to be developed before natural gas-fired generation, they are not sufficient in their current forms to meet the state's future energy demand and maintain the electric system's reliability. In addition, a significant share of the state's still-operating generation fleet is expected to shut down to comply with the SWRCB's OTC policy. Energy from natural gas-fired generation will increasingly be needed during a prolonged nuclear plant outage (for refueling for example) or during dry years, in which hydroelectric production is reduced. (Ex. 2000, p. 4.1-98.)

Displacement of More-Costly, Less-Efficient, and Higher-Emitting Power Plants

It is reasonable to assume that the HBEP units would be dispatched (called upon to generate electricity) whenever they are a cheaper source of energy than an alternative - i.e., that they will displace a more expensive resource.

Ninety percent or more of the cost of dispatching a power plant is the cost of fuel.⁸ It follows that the new HBEP units would be dispatched when they burn less fuel per MWh than the resource(s) they displace, i.e., when they produce fewer GHG emissions. (Ex. 2000, p. 4.1-100.)

⁸ Other, "fixed" costs are irrelevant to the dispatch decision, as they are incurred whether or not the power plant is generating electricity.

The dispatch of the HBEP would generally not result in the displacement of energy from renewable resources or large hydroelectric generation. Most renewable resources have must-take contracts with utilities, guaranteeing purchase of all the energy produced by these renewable generators. Rare exceptions occur due to transmission congestion or seasonal surpluses. Even in those instances where this is not the case (e.g., where renewable generation is participating in a spot market for energy) the variable costs associated with renewable generation are far lower than those associated with the HBEP (e.g., fuel costs for wind, solar, other renewable generation technologies, and large hydroelectric facilities are zero or minimal); these resources can bid into spot markets for energy at prices far below the HBEP and other natural gas-fired generators. Nor would the HBEP displace energy from operating (zero-GHG emission) nuclear generation facilities, as these resources have far lower variable operating costs as well. (Ex. 2000, p. 4.1-102.)

In the longer-term, the development and operation of the HBEP will facilitate the retirement of less efficient generation resources. By reducing revenue streams accruing to other resources (for the provision of both energy and capacity-related services), the HBEP renders them less profitable both directly through energy and ancillary services markets and indirectly through contracts to provide capacity to ensure resource adequacy. This follows from the fixed demand for energy and ancillary services; the developers of the HBEP cannot stimulate demand for energy and other products provided by the facility, but merely serve to provide a share of the amount that is needed to meet demand and reliably operate the system. In doing so, the HBEP both encourages and allows for the retirement of less efficient generation. (Ex. 2000, p. 4.1-101.)

Natural gas-fired plants differ in their thermal efficiency – the amount of fuel combusted, and thus GHG emissions per unit of electricity generated. David Vidaver, Energy Commission staff's expert witness, testified that siting and operation of the HBEP would reduce greenhouse gas emissions in two ways. First, the cost of dispatching a plant is generally agreed to be the cost of fuel need to produce the amount of energy required, either to meet demand or to provide local reliability. Thus, the plant that consumes the least amount of fuel will be dispatched. Because of this, it follows that the more efficient plant burning a lesser amount of fossil fuel—natural gas for HBEP—than a less efficient plant creates fewer greenhouse gas emissions. (08/06/14 RT 58:6-61:20.)

Second, Mr. Vidaver testified, the HBEP is in a unique area where transmission is constrained. The California Independent System Operation (CAISO) has indicated the area needs local generation to meet capacity. In the absence of the HBEP, other, less efficient plants will be dispatched, leading to higher greenhouse gas emissions. (08/06/14 RT 63:13-64:2.)

Fostering Renewables Integration

The flexible nature of the HBEP would serve to facilitate the integration of additional variable renewable resources. The average heat rate for the Western Electricity Coordinating Council (WECC) is presented in **Greenhouse Gas table 4**.

Greenhouse Gas Table 4
Weighted Average Heat Rate for Operating Natural Gas-Fired Plants¹ in the WECC 2010-2012

Year	Average Heat Rate (mmBtu/kWh)
2010	7,784
2011	7,995
2012	7,918

¹ Excludes cogeneration facilities

(Ex. 2000, p. 4.1-104.)

Despite having a heat rate in excess of the WECC average, the operation of the HBEP should result in a reduction in the system heat rate for natural gas plants in the WECC due to its displacing energy from less-efficient natural gas-fired generation as discussed above. In those instances where HBEP is higher emitting on a per-MWh basis than the resources it displaces but does so because it can operate at lower output levels and thus allow for more renewable integration and generation, the result might be a higher system heat rate, but total gas-fired generation (energy) and GHG emissions will fall. (Ex. 2000, p. 4.1-104.)

Retirement of High-GHG Emission Plants and Generation Using Once-Through Cooling

Holding the portfolio of generation resources constant, energy from new natural gas-fired plants displaces energy from existing natural gas-fired plants. In the longer-term, the development and operation of the HBEP would reduce the use of less efficient generation resources, and ultimately, to their retirement. By reducing revenue streams accruing to other resources (for the provision of both energy and capacity-related services, whether through markets or under a bilateral contract), the HBEP render these other facilities less profitable and riskier to operate. This follows from the fixed demand for energy and ancillary services; the developers of the HBEP cannot stimulate demand for energy and other products they provide, but merely serve to provide a share of the energy that is needed to meet demand and the capacity needed to reliably operate the system. In doing so, the HBEP both discourages the use of, and allows for the retirement of less-efficient generation. (Ex. 2000, p. 4.1-101.)

At present, the California electricity system needs new, efficient, gas-fired generation to displace and replace less efficient generation, and to help integrate additional intermittent renewable generation. As new gas plants are built to meet those needs, the system will change; moreover, the specific location, type, operation, and timing of each plant will be different. As a result, each plant will have somewhat different impacts. Furthermore, future implementation of efficiency and demand response measures, and new technologies such as storage, smart grid, and distributed generation, may also significantly change the physical needs and operation of the electrical system.

Therefore, we cannot and should not continue adding gas-fired plants *ad infinitum*. Here the evidence establishes that the HBEP will not increase the system heat rate. As we describe above, it will support, rather than interfere with, existing and new renewable generation. Finally, it will reduce system-wide GHG emissions and otherwise support the goals of AB32.

We therefore find that GHG emissions from operation activities will not be significant.

CUMULATIVE IMPACTS

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts.” (CEQA Guidelines § 15355.) “A cumulative impact consists of an impact that is created as a result of a combination of the project evaluated in the EIR together with other projects causing related impacts.” (CEQA Guidelines § 15130[a][1].) Such impacts may be relatively minor and incremental, yet still be significant because of the existing environmental background, particularly when one considers other closely related past, present, and reasonably foreseeable future projects.

GHG assessment is by its very nature a cumulative impact assessment. HBEP would emit greenhouse gases and, therefore, we have analyzed its potential cumulative impact in the context of its effect on the electricity system, resulting GHG emissions from the system, and existing GHG regulatory requirements and GHG energy policies. The evidence supports our finding that HBEP would not cause or contribute to a significant adverse cumulative impact on GHG.

CONCLUSION

At present, the California electricity system needs new efficient gas-fired generation to displace and replace less efficient generation, and to help integrate additional intermittent renewable generation. But as new gas plants are built to meet those needs, the system will change; moreover, the specific location, type, operation, and timing of each plant will be different. As a result, each plant will have somewhat different impacts. Furthermore, future implementation of efficiency, demand response measures, and new technologies such as storage, smart grid, and distributed generation, may also significantly change the physical needs and operation of the electrical system. It is therefore reasonable to assume that at some point in the future there will be a decrease in the need for additional gas-fired generation. It follows that not all proposed gas-fired projects will meet the criteria discussed above. We will continue to analyze each such project in light of the goals and policies discussed above.

In this case, the evidence establishes that the HBEP will support the integration of existing and new renewable generation. It will reduce system-wide GHG emissions and otherwise support the goals of AB 32. We find the proposed project is consistent with state energy policy, and will help the state achieve its renewable energy goals.

PUBLIC COMMENT

FINDINGS OF FACT

1. The GHG emissions from the HBEP project construction are likely to be 2960 MTCO₂ equivalent (“MTCO₂E”) during the 90-month construction period.
2. There is no numerical threshold of significance under CEQA for construction-related GHG emissions.
3. Construction-related GHG emissions will be less than significant if they are controlled with best practices.
4. The project will use best practices to control its construction-related GHG emissions.
5. State government has a responsibility to ensure a reliable electricity supply, consistent with environmental, economic, and health and safety goals.
6. California utilities are obligated to meet whatever demand exists from any and all customers.
7. The maximum annual CO₂ emissions from the HBEP’s operation will be 1,997,634 MTCO₂E, which constitutes an emissions performance factor of 0.479 MTCO₂E/MWh.

8. Under SB 1368 and implementing regulations, California's electric utilities may not enter into long-term commitments with base load power plants with CO2 emissions that exceed the Emissions Performance Standard ("EPS") of 0.500 MTCO2/MWh.
9. The California Renewable Portfolio Standard (RPS) requires the state's electric utilities obtain at least 33 percent of the power supplies from renewable sources, by the year 2020.
10. California's power supply loading order requires California utilities to obtain their power first from the implementation of all feasible and cost-effective energy efficiency and demand response, then from renewables and distribution generation, and finally from efficient fossil-fired generation and infrastructure improvement.
11. Even as more renewable generation is added to the California electricity system, gas-fired power plants such as the HBEP will be necessary to meet local capacity requirements and to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support.
12. When it operates, HBEP will displace generation from higher-GHG-emitting power plants.
13. The HBEP's operation will reduce overall GHG emissions from the electricity system.
14. Intermittent solar and wind generation will account for most of the installation of renewables in the next few decades.
15. Intermittent generation needs dispatchable generation, such as the HBEP, in order to be integrated effectively into the electricity system.
16. The HBEP's operation will foster the addition of renewable generation into the electricity system, which will further reduce system GHG emissions.
17. The addition of some efficient, dispatchable, natural-gas-fired generation will be necessary to integrate renewables into California's electricity system and meet the state's RPS and GHG goals, but the amount is not without limit.

CONCLUSIONS OF LAW

1. The HBEP's construction-related GHG emissions will not cause a significant adverse environmental impact.

2. The GHG emissions from a power plant's operation should be assessed in the context of the operation of the entire electricity system of which the plant is an integrated part.
3. The HBEP's operational GHG emissions will not cause a significant environmental impact.
4. The HBEP's operation will help California utilities meet their RPS obligations.
5. The HBEPs construction and operation will be consistent with California's loading order for power supplies.
6. The HBEP's operation will foster the achievement of the GHG goals of AB32 and Executive Order S-3-05.
7. The GHG emissions of any power plant must be assessed within the system on a case-by-case basis.
8. The HBEP will not increase the overall system heat rate for natural gas plants. The HBEP will not interfere with generation from existing renewables or with the integration of new renewable generation.
9. The HBEP will reduce system-wide GHG emissions.
10. Any new natural-gas-fired power plant that we certify must:
 - a) not increase the overall system heat rate for natural gas plants;
 - b) not interfere with generation from existing renewables or with the integration of new renewable generation; and
 - c) have the ability to reduce system-wide GHG emissions.

The HBEP meets these minimum criteria.

CONDITIONS OF CERTIFICATION

No Conditions of Certification related to greenhouse gas emissions are proposed or adopted. The facility owner would participate in California's GHG cap-and-trade program. The facility owner is required to report GHG emissions and to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing allowances from the capped market and offsets from outside the AB 32 program. Similarly, the proposed project would be subject to federal mandatory reporting of GHG emissions. The facility owner may have to provide additional reports and GHG reductions, depending on the future regulations formulated by the U.S. EPA or the ARB.

B. AIR QUALITY

Construction and operation of the Huntington Beach Energy Project (HBEP) will emit combustion products and use certain hazardous materials that could expose the general public and onsite workers to potential health effects. This section on air quality examines whether HBEP will likely comply with applicable state and federal air quality laws, ordinances, regulations, and standards (LORS), whether it will likely result in significant air quality impacts, and whether the proposed mitigation measures will likely reduce potential impacts to insignificant levels.

Our evaluation encompasses the significance criteria and method of analysis used by Staff. In Staff's view, all project emissions of nonattainment criteria pollutants and their precursors (NO_x, VOC, PM₁₀, PM_{2.5}, SO_x, and NH₃) are considered significant and must be mitigated. For short-term construction activities that essentially cease before operation of the power plant, the Staff assessment is qualitative and mitigation consists of controlling construction equipment tailpipe emissions and fugitive dust emissions to the maximum extent feasible. For operating emissions, the mitigation includes both the Best Available Control Technology (BACT) and emission reduction credits (ERC) or other valid emission reductions to offset emissions of both nonattainment criteria pollutants and their precursors.

The ambient air quality standards used by Staff as the basis for characterizing project impacts are health-based standards established by the California Air Resources Board (ARB) and United States Environmental Protection Agency (U.S. EPA). They are set at levels that contain a margin of safety to adequately protect the health of all people, including those most sensitive to adverse air quality impacts such as the elderly, persons with existing illnesses, children, and infants.

In carrying out this analysis, Staff evaluated the following major points:

- Whether the HBEP is likely to conform with applicable federal, state, and South Coast Air Quality Management District (SCAQMD) air quality laws, ordinances, regulations and standards (California Code of Regulations, Title 20, section 1744 (b));
- Whether the HBEP is likely to cause significant air quality impacts, including new violations of ambient air quality standards, or make substantial contributions to existing violations of those standards (California Code of Regulations, Title 20, section 1743); and

- Whether the mitigation measures proposed for the project are adequate to lessen the potential impacts to a level of insignificance (Title 20, California Code of Regulations, section 1742 (b)).

The applicable LORS are identified in **Air Quality Table 1** below. As summarized in the Table, the evidence examines the project’s compliance with each LORS.

**AIR QUALITY Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Federal	U.S. Environmental Protection Agency
Title 40 CFR Part 51 (New Source Review)	Requires new source review (NSR) facility permitting for construction or modification of specified stationary sources. NSR applies to sources of designated nonattainment pollutants. This requirement is addressed through SCAQMD Regulation XIII.
Title 40 CFR Part 52 (Prevention of Significant Deterioration Program)	Requires prevention of significant deterioration (PSD) review and facility permitting for construction of new or modified major stationary sources of pollutants that occur at ambient concentrations that attain the NAAQS. A PSD permit would be required for NO ₂ , SO ₂ , CO and PM ₁₀ . HBEP would also be a new major stationary source of GHG (exceeding 100,000 tons per year) which requires a PSD permit for GHGs. The PSD program was initially within the jurisdiction of the U.S. EPA. On January 9, 2013, SCAQMD became the agency responsible for the issuance of GHG PSD permits for sources within the District.
Title 40 CFR Part 60, Subpart Da	New Source Performance Standard (NSPS) for Steam Generators: for the fired HRSGs greater than the 250 mmbtu/hr, the emission standards are NO _x 0.2 lbs/mmbtu, PM 0.015 lbs/mmbtu, and SO ₂ 0.2 lbs/mmbtu.
Title 40 CFR Part 60, Subpart KKKK	New Source Performance Standard (NSPS) for Stationary Combustion Turbines: 15 parts per million (ppm) NO _x at 15% O ₂ and fuel sulfur limit of 0.060 lb SO _x per million Btu heat input.
Title 40 CFR Part 64	Compliance Assurance Monitoring for emission units at major stationary sources required to obtain a Title V permit. The turbines will be subject to emission limits of NO _x , CO, VOC, and PM ₁₀ if the emissions are greater than the major source thresholds. Control systems are used for NO _x , CO, and VOC, but not PM ₁₀ .
Title 40 CFR Part 72	Acid Rain Program. Requires reductions in NO _x and SO ₂ emissions, implemented through the Title V program. Permitting and enforcement are delegated to SCAQMD.
State	California Air Resources Board and Energy Commission
California Health & Safety Code (H&SC) §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance.
H&SC §40910-40930	Permitting of source needs to be consistent with approved clean air plan.

Applicable LORS	Description
California Public Resources Code §25523(a); 20 CCR §1752, 2300-2309 (CEC & CARB Memorandum of Understanding)	Requires that Energy Commission decision on AFC include requirements to assure protection of environmental quality.
HSC Sections 21080, 39619.8, 40440.14 (AB1318)	Requires the executive officer of the SCAQMD, upon making a specified finding, to transfer emission reduction credits for certain pollutants from the SCAQMD's internal emission credit accounts to eligible electrical generating facilities.
Local	South Coast Air Quality Management District
Regulation II – Permits	This regulation sets forth the regulatory framework of the application for issuance of construction and operation permits for new, altered and existing equipment.
Regulation IV – Prohibitions	This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, and fuel contaminants. This regulation also specifies additional performance standards for stationary gas turbines and other internal combustion engines.
Regulation XIII: New Source Review	Establishes the pre-construction review requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards and that future economic growth in the SCAQMD is not unnecessarily restricted. However, this regulation does not apply to NO _x or SO _x emissions from certain sources, which are addressed by Regulation XX (RECLAIM).
Regulation XVII: Prevention of Significant Deterioration	This regulation sets forth the preconstruction requirement for stationary sources to ensure that the air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth.
Regulation XX: Regional Clean Air Incentives Market (RECLAIM)	RECLAIM is designed to allow facilities flexibility in achieving emission reduction requirements for NO _x and SO _x through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions.
Regulation XXX: Title V Permits	The Title V federal program is the air pollution control permit system required by the federal Clean Air Act as amended in 1990. Regulation XXX defines the permit application and issuance as well as compliance requirements associated with the program. Any new or modified major source which qualifies as a Title V facility must obtain a Title V permit prior to construction, operation or modification of that source. Regulation XXX also integrates the Title V permit with the RECLAIM program such that a project cannot proceed without both.
Regulation XXXI Acid Rain Permits	Title IV of the federal Clean Air Act provides for the issuance of acid rain permits for qualifying facilities. Regulation XXXI integrates the Title V program with the RECLAIM program. Regulation XXXI requires a subject facility to obtain emission allowances for SO _x emissions as well as monitoring SO _x , NO _x , and carbon dioxide (CO ₂) emissions from the facility.

(Ex. 2000, pp. 4.1-2 – 4.1-4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project Features

The proposed HBEP would consist of two three-on-one combined-cycle power blocks. The new stationary sources of emissions in each power block would be three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbine generators (CTG), coupled with one steam turbine, and an air cooled condenser. (Ex. 2000, p. 4.1-10.)

Air Quality District Jurisdiction

The HBEP project site is located within the South Coast Air Basin and within the SCAQMD. SCAQMD released its Final Determination of Compliance (FDOC) on July 20, 2014, stating that the project is expected to comply with applicable Air District rules, which incorporate state and federal requirements. (Ex. 1139.)

The District rules and regulations specify the emissions control and offset requirements for new sources such as the HBEP. Best Available Control Technology would be implemented, and emission reduction credits (ERCs) for NO_x emissions are required by district rules and regulations based on the permitted emission levels for this project. Compliance with the district's new source requirements would ensure that the project would be consistent with the strategies and future emissions anticipated under the district's air quality attainment and maintenance plans.

The SCAQMD's permit conditions for the project are specified in the FDOC and incorporated into this Decision as as Conditions of Certification **AQ-1** through **AQ-41**¹. (Cal. Code Regs., tit. 20, §§ 1744.5, 1752.3.) These conditions include emissions limitations, operating limitations, offset requirements, and testing, monitoring, record keeping, and reporting requirements that ensure compliance with federal and state air quality LORS.

Ambient Air Quality Standards

The United States Environmental Protection Agency (U.S. EPA) and the ARB have both established allowable maximum ambient concentrations of criteria air pollutants. These are based upon public health impacts and are called ambient air quality standards. The California Ambient Air Quality Standards (CAAQS), established by ARB, are typically lower (more stringent) than the federally established National Ambient Air Quality Standards (NAAQS).

¹ The Conditions of Certification for Air Quality and all other sections of this Decision are found in Appendix "A".

Ambient air quality standards are designed to protect people who are most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The ambient air quality standards are also set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Current state and federal ambient air quality standards are listed in **Air Quality Table 2**. The averaging time for the various ambient air quality standards (the duration over which all measurements taken are averaged) ranges from one hour to one year. The standards are read as a concentration, in parts per million (ppm), parts per billion (ppb), or as a weighted mass of material per unit volume of air, in milligrams (mg or 10^{-3} g) or micrograms (μg or 10^{-6} g) of pollutant in a cubic meter (m^3) of ambient air, drawn over the applicable averaging period.

Air Quality Table 2 below identifies the current federal and state standards.

Air Quality Table 2
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O3)	8 Hour	0.075 ppm (147 $\mu\text{g}/\text{m}^3$) ^a	0.070 ppm (137 $\mu\text{g}/\text{m}^3$)
	1 Hour	—	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO2)	Annual	53 ppb (100 $\mu\text{g}/\text{m}^3$)	0.030 ppm (57 $\mu\text{g}/\text{m}^3$)
	1 Hour	100 ppb (188 $\mu\text{g}/\text{m}^3$) ^b	0.18 ppm (339 $\mu\text{g}/\text{m}^3$)
Sulfur Dioxide (SO2)	24 Hour	—	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)
	3 Hour	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$)	—
	1 Hour	75 ppb (196 $\mu\text{g}/\text{m}^3$) ^c	0.25 ppm (655 $\mu\text{g}/\text{m}^3$)
Respirable Particulate Matter (PM10)	Annual	—	20 $\mu\text{g}/\text{m}^3$
	24 Hour	150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$
Fine Particulate Matter (PM2.5)	Annual	12 $\mu\text{g}/\text{m}^3$	12 $\mu\text{g}/\text{m}^3$
	24 Hour	35 $\mu\text{g}/\text{m}^3$ ^b	—
Sulfates (SO4)	24 Hour	—	25 $\mu\text{g}/\text{m}^3$
Lead	30 Day Average	—	1.5 $\mu\text{g}/\text{m}^3$
	Rolling 3-Month Average	1.5 $\mu\text{g}/\text{m}^3$	—
Hydrogen Sulfide (H ₂ S)	1 Hour	—	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 $\mu\text{g}/\text{m}^3$)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.

Note: ^a Fourth- highest maximum 8 – hour concentration, averaged over 3 years.

^b 98th percentile of daily maximum value, averaged over 3 years.

^c 99th percentile of daily maximum value, averaged over 3 years.

(Ex. 2000, p. 4.1-6.)

Existing Ambient Air Quality

The U.S. EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment, depending on whether or not the monitored ambient air quality data show compliance, insufficient data is available, or non-compliance with the ambient air quality standards, respectively. The HBEP project site is located within the South Coast Air Basin and within the SCAQMD. The federal and state attainment status of criteria pollutants in the SCAQMD are summarized in **Air Quality Table 3**.

Meteorological data from the John Wayne Airport station was used for air quality modeling to determine the project impacts. Although the operating monitoring station closest to the proposed site is North Coastal Orange County station (also called the Costa Mesa station), the data from the John Wayne Airport station is more appropriate because of the following factors: 1) surface characteristics at John Wayne Airport are more similar to the project site, 2) John Wayne Airport data are more current, 3) John Wayne Airport has fewer missing data points and 4) the Costa Mesa data provide inconsistent results because the calm winds percentage varies from 0 percent to 38 percent depending on data processing methods. Background concentrations of O₃, NO₂, SO₂, and CO were determined using North Coastal Orange County monitoring station data, located about 3.5 miles northeast from the project site. Ambient concentrations of PM₁₀ and PM_{2.5} are collected from Long Beach station, approximately 17 miles to the northwest of the project site.

AIR QUALITY Table 3
Attainment Status of South Coast Air Quality Management District (SCAQMD)

Pollutants	Attainment Status	
	Federal Classification	State Classification
Ozone (1-hr)	No Federal Standard	Nonattainment
Ozone (8-hr)	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Unclassified/Attainment	Nonattainment
SO ₂	Attainment	Attainment
PM ₁₀	Attainment	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
Lead	Attainment	Attainment

(Ex. 2000, P. 4.1-7.)

The evidence describes in detail the composition and significance of each of the attainment and nonattainment criteria pollutants. (Ex. 2000, pp. 4.1-6 – 4.1-10.) The U.S. EPA implemented a new 1-hour NO₂ standard of 0.1 ppm, which became effective on April 12, 2010. The new standard is expressed as a 3-year average of the 98th

percentile of the *daily maximum* 1-hour concentration (i.e., the 8th highest of daily highest 1-hour concentrations). **Air Quality Table 4** shows the maximum 1-hour NO₂ concentrations at the Costa Mesa station. Data from 2007 to 2012 show that NO₂ concentrations measured at this station have never exceeded either the federal or state standards. The SCAQMD is currently designated as unclassified for federal NO₂ standard but nonattainment for the state NO₂ standard. (Ex. 2000, p. 4.1-8.)

Ozone is not directly emitted from stationary or mobile sources. It is a secondary pollutant formed through complex chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOC). Ozone formation is highest in the summer and fall when abundant sunshine and high temperatures trigger the necessary photochemical reactions, and lowest in the winter. The days with the highest ozone concentrations in this region commonly occur between May and October. The SCAQMD is classified as a nonattainment area with respect to both state and national ambient air quality standards for ozone. (*id.*)

PM₁₀ is a mixture of small solid particles and liquid droplets with a size less than or equal to 10 microns diameter. PM₁₀ can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NO_x, SO_x and VOC from turbines, and ammonia from NO_x control equipment, given the right meteorological conditions, can form particulate matter in the form of nitrates (NO₃), sulfates (SO₄), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted but are formed through complex chemical reactions in the atmosphere.

PM nitrate (mainly ammonium nitrate) is formed in the atmosphere from the reaction of nitric acid and ammonia. Nitric acid in turn originates from NO_x emissions from combustion sources. The nitrate ion concentrations during the wintertime are a significant portion of the total PM₁₀, and an even higher contributor to particulate matter of less than 2.5 microns (PM_{2.5}), described more fully below. The nitrate ion is only a portion of the PM nitrate, which can be in the form of ammonium nitrate (ammonium plus nitrate ions) or sodium nitrate.

As shown in **Air Quality Table 4**, the federal 24-hour PM₁₀ standard of 150 µg/m³ has never been exceeded at the stations near the project site from 2007 through 2012. However, the CAAQS 24-hour standard of 50 µg/m³ has been exceeded during 2007-2009 period. The maximum 24-hour concentration recorded during the analysis period was 75 µg/m³ in 2007. The maximum annual concentration was 30.5 µg/m³ in 2009. The SCAQMD is characterized as attainment for federal PM₁₀ standard but nonattainment for state PM₁₀ standard.

PM2.5 refers to particles and droplets with a diameter less than or equal to 2.5 microns. PM 2.5 is believed to pose a greater health risk than PM10 because it can lodge deeply into the lungs due to the small size. PM2.5 includes nitrates, sulfates, organic carbon and elemental carbon, which mainly result from combustion and atmospheric reactions. Almost all combustion-related particles, including those from wood smoke and cooking, are smaller than 2.5 microns. Nitrate and sulfate particles are formed through complex chemical reactions in the atmosphere. Particulate nitrate (mainly ammonium nitrate) is formed in the atmosphere from the reaction of nitric acid and ammonia. Nitric acid in turn originates from NOx emissions from combustion sources. The nitrate ion concentrations during the winter make up a large portion of the total PM2.5.

Air Quality Table 4 summarizes the ambient PM2.5 data collected from the Long Beach station. The national 24-hour average NAAQS is met if the 3-year average of the 98th percentile concentration is 35 µg/m³ or lower. This threshold was exceeded in 2007 and 2008 with the maximum values of 40.8 and 38.9 µg/m³. The annual arithmetic means during the 2007-2012 period are below the federal standard of 15 µg/m³, but exceed the state standard of 12 µg/m³ in several years. For purpose of state and federal air quality planning and permitting, the SCAQMD is nonattainment with both federal and state PM2.5 standard.

Air Quality Table 4
Nonattainment Criteria Pollutants Concentrations, 2007-2012
(ppm or µg/m³)

Pollutant	Averaging Time	2007	2008	2009	2010	2011	2012
NO ₂ (ppm)	1 hour	0.07	0.08	0.07	0.07	0.06	0.074
NO ₂ (ppm)	Federal 1 hour	0.06	-	0.057	0.056	0.053	0.05
NO ₂ (ppm)	Annual	0.013	0.013	0.013	0.011	0.01	0.01
Ozone (ppm)	1 hour	0.082	0.094	0.087	0.097	0.093	0.090
Ozone (ppm)	8 hour	0.072	0.079	0.075	0.076	0.077	0.076
PM10 (µg/m ³)	24 hour	75	62	62	44	43	45
PM10 (µg/m ³)	Annual	30.2	29.1	30.5	22	24.2	23.3
PM2.5 ^a (µg/m ³)	24 hour	40.8	38.9	34.2	28.3	27.8	26.4
PM2.5 (µg/m ³)	Annual	14.6	14.2	13	10.5	11.0	10.4

Note: ^a The 24-hour PM 2.5 concentrations are the 98th percentile highest daily 24-hour average PM2.5 concentrations during that year.

(Ex. 2000, p. 4.1-8.)

Ambient Air Quality Baseline

As shown below in **Air Quality Table 5**, Staff established a baseline for evaluating the modeling results and analyses submitted by Staff and the Applicant.

Air Quality Table 5
Staff-Recommended Background Concentrations ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	Background	Limiting Standard	Percent of Standard
PM10	24 hour	45	50	90
	Annual	24.2	20	121
PM2.5	24 hour	28.3	35	81
	Annual	11.0	12	92
CO	1 hour	3,450	23,000	15
	8 hour	2,444	10,000	24
NO ₂	State 1 hour	139	339	41
	Federal 1 hour	105	188	56
	Annual	21	57	37
SO ₂	1 hour	26	655	4
	Federal 1 hour	13	196	7
	24 hour	5	105	5

Note: An exceedance is not necessarily a violation of the standard, and that only persistent exceedances lead to designation of an area as nonattainment.

(Ex. 2000, p. 4.1-11.)

We note that an exceedance is not necessarily a violation of the standard, and that only persistent exceedances lead to designation of an area as nonattainment.

Modeling Methodology

Our analysis is guided by the dispersion modeling analyses and data provided by Applicant. Analysis begins with quantifying the emissions, and then uses an atmospheric dispersion model to determine the probable change in ground-level concentrations due to the project.

Dispersion models complete the complex, repeated calculations that consider emissions in the context of various ambient meteorological conditions, local terrain, and nearby structures that affect air flow. For the HBEP, the surface meteorological data used as an input to the dispersion model included five years (2008-2012) of meteorology data from John Wayne Airport monitoring station. (Ex. 2000, p. 4.1-16.)

The evidence establishes that the Applicant performed the air dispersion modeling analysis based on guidance presented in the *Guideline on Air Quality Models* (EPA, 2005) and the American Meteorological Society/Environmental Protection Agency Regulatory Model known as AERMOD (version 12345). The U.S. EPA designates AERMOD as a “preferred” model for refined modeling in all types of terrain. For determining NO₂ impacts of short-term emissions (1-hour averaging period), NO₂

concentrations were determined using the Ambient Ratio Method (ARM) with NO_x to NO₂ ambient ratio of 0.8.

Project-related modeled concentrations were then added to highest background concentrations to arrive at the total impact of the project even if they are not likely to occur at the same time. The total impact is then compared with the ambient air quality standards for each pollutant to determine whether the project's emissions would either cause a new violation of the ambient air quality standards or contribute to an existing violation.

The federal 1-hour NO₂ and 24-hour PM_{2.5} standards are statistically based (i.e., the three year average of the 98th percentile values cannot exceed the applicable limit). In order to demonstrate compliance with these standards, the modeled impacts from the project were added to hourly background concentrations conservatively derived from the measured ambient background levels. The resulting impacts were then evaluated following EPA guidance to demonstrate compliance with the statistical standard. (Ex. 2000, p. 4.1-16.)

Construction Impacts and Mitigation

Construction of the HBEP is expected to take about 90 months, which includes demolition of existing structures and construction of the new electrical generating components. The construction of the HBEP would require removal of the existing Huntington Beach Generating Station's Units 1 through 5. The duration and complexity of construction activities are due in part to the desire of the project owner and the California Independent System Operator to have continuity of generation and/or reactive power from the site. Therefore, there would be concurrent operation, demolition, commissioning and construction activities throughout the construction period. (Ex. 2000, p. 4.1-11.)

During the construction period, air emissions would be generated from: 1) vehicle and construction equipment exhaust; 2) fugitive dust from vehicle and construction equipment, including grading and bulldozing during construction of HBEP Block 1 and Block 2; and 3) fugitive dust from demolition activities such as the top-down removal of the Unit 1 and 2 common boiler stack and loading waste haul trucks with the generated debris. Construction activities would be scheduled as 10 hours per day, 23 days per month (HBEP2012a).

Estimates for the highest daily emissions and total annual emissions over the 90-month construction period are shown in **Air Quality Table 6**. The maximum daily emissions and monthly emissions are reported during the overlap of Block 1 and Block 2 construction, which is between month 36 and month 45.

Air Quality Table 6
HBEP, Estimated Maximum Construction Emissions

Construction Activity	NOx	VOC	PM10	PM2.5	CO	SOx
Maximum Daily Construction Emissions (lbs/day)	79.5	12.7	17.0	7.54	88.1	0.20
Maximum Monthly Construction Emissions (lbs/month)	1829	291	396	173.32	2026	4.56
Peak Annual Construction Emissions (tons/year)	8.6	1.3	1.88	0.72	9.1	0.02

Note: Different activities have maximum emissions at different times during the construction period; therefore, total maximum daily, monthly, and annual emissions might be different from the summation of emissions from individual activities.

(Ex. 2000, p. 4.1-12.)

Air Quality Table 7 summarizes the results of the modeling analysis for construction activities. The total impact is the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for project activity. The values in **bold** in the Total Impact and Background columns represent the values that either equal or exceed the relevant ambient air quality standard.

Air Quality Table 7
HBEP, Construction-Phase Maximum Impacts ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
PM ₁₀	24 hour	14.6	45	59.6	50	119
	Annual	2.31	24.2	26.5	20	133
PM _{2.5}	24 hour ^a	4.71	28.3	33.0	35	94
	Annual	1.32	11.0	12.3	12	103
CO	1 hour	112	3,450	3,562	23,000	15
	8 hour	93.2	2,444	2,537.2	10,000	25
NO ₂ ^b	State 1 hour	91.7	139	230.7	339	68
	Federal 1 hour ^c	-	-	183	188	97
	Annual	7.33	21	28.33	57	50
SO ₂	State 1 hour	0.22	26	26.22	655	4
	Federal 1 hour ^d	0.22	13	13.22	196	7
	24 hour	0.04	5	5.04	105	5

^a Total predicted concentration for the federal 24-hour PM_{2.5} standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.

^b The maximum 1-hour and annual NO₂ concentrations include ambient NO₂ ratios of 0.80 and 0.75 respectively.

^c Total predicted concentration for the federal 1-hour NO₂ standard is the maximum modeled concentration paired with the 3-year average of 98th percentile seasonal hourly background concentrations.

^d Total predicted concentration for the federal 1-hour SO₂ standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

(Ex. 2000, p. 4.1-17.)

We find that particulate matter emissions from construction would cause a significant impact because they would cause new exceedances or contribute to existing violations of PM10 and PM2.5 ambient air quality standards, and additionally that those emissions can and should be mitigated to a level of insignificance. Significant secondary impacts would also occur for PM10, PM2.5, and ozone because construction-phase emissions of particulate matter precursors (including SOx) and ozone precursors (NOx and VOC) would also contribute to existing violations of these standards.

Applicant's Proposed Mitigation

The Applicant proposes the following mitigation measures to reduce the exhaust emissions from the diesel heavy equipment and fugitive dust emissions during the construction of the project:

- Watering unpaved roads and disturbed areas;
- Limiting onsite vehicle speeds to 10 mph and post the speed limit;
- Frequent watering during periods of high winds when excavation/grading is occurring;
- Sweeping onsite paved roads and entrance roads on an as-needed basis;
- Replacing ground cover in disturbed areas as soon as practical;
- Covering truck loads when hauling material that could be entrained during transit;
- Applying dust suppressants or covers to soil stockpiles and disturbed areas when inactive for more than 2 weeks;
- Using ultra-low sulfur diesel fuel (15 ppm sulfur) in all diesel-fueled equipment;
- Use of Tier III construction equipment where feasible;
- Maintaining all diesel-fueled equipment per manufacturer's recommendations to reduce tailpipe emissions;
- Limiting diesel heavy equipment idling to less than 5 minutes, to the extent practical; and
- Using electric motors for construction equipment to the extent feasible.

The evidence shows that despite these measures, PM10 and PM2.5 impacts during the approximately 7.5-year project construction period would cause exceedances of health-based ambient air quality. As further mitigation, applicant proposes to sweep the Pacific Coast Highway 3.5 miles once per month for the duration of the construction period.

The effect of this additional mitigation would be to further reduce project impacts during construction.

The evidence shows that the street sweeper program is an effective way to further mitigate the PM impacts during the extended construction period. To implement this measure, we will require the applicant to develop and provide a street sweeping mitigation plan prior to initiating construction that details the sweeping program and provide the records of the operation of the sweeping program in Monthly Compliance Reports.

We adopt Conditions of Certification **AQ-SC1** through **AQ-SC6** to implement these requirements. Compliance with the Conditions of Certification we adopt herein is expected to mitigate air quality impacts to be less than significant during construction of the HBEP.

Operation Impacts and Mitigation

A refined dispersion modeling analysis was performed by the applicant to identify off-site criteria pollutant impacts that would occur from routine operational emissions throughout the life of the project. The worst case 1-hour NO₂ and CO impacts reflect startup impacts, and all other impacts reflect impacts that would occur during normal operation. The evidence shows that the modeled impacts are extremely conservative, since the maximum impacts are evaluated under a combination of highest allowable emission rates, the most extreme meteorological conditions, and worst case background values. The predicted maximum concentrations of criteria pollutants are summarized in **Air Quality Table 8**. The values shown in bold and shaded means they exceed ambient air quality standards.

Air Quality Table 8
HBEP, Routine Operation Maximum Impacts ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
PM10	24 hour	4.7	45	49.7	50	99
	Annual	0.27	24.2	24.47	20	122
PM2.5	24 hour ^a	4.7	28.3	33.0	35	94
	Annual	0.27	11.0	11.27	12	94
CO	1 hour	333	3,450	3,783	23,000	16
	8 hour	78	2,444	2,522	10,000	25
NO₂ ^b	State 1 hour	58.8	139	197.8	339	58
	Federal 1 hour ^c	58.8	105	163.8	188	87
	Annual	0.5	21	21.5	57	38
SO₂	State 1 hour	7.1	26	33.1	655	5
	Federal 1 hour ^d	7.1	13	20.1	196	10
	24 hour	2.4	5	7.4	105	7

Note:

^a Total predicted concentration for the federal 24-hour PM_{2.5} standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.

^b The maximum 1-hour and annual NO₂ concentrations include ambient NO₂ ratios of 0.80 and 0.75 respectively.

^c Total predicted concentration for the federal 1-hour NO₂ standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.

^d Total predicted concentration for the federal 1-hour SO₂ standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

(Ex. 2000, p. 4.1-24.)

We find that HBEP will not cause a significant impact except annual PM10 emissions, which would contribute to existing violations of annual PM10 ambient air quality standards. The impacts of PM2.5 and 24-hour PM10 are close to the most stringent standards due to the existing high background concentrations, but would not create new violations.

Applicant's Proposed Mitigation

The HBEP includes a combination of BACT and emission reduction credits to mitigate air quality impacts.

Emission Controls

HBEP proposes the use of dry low NO_x combustors with selective catalytic reduction (SCR) to control NO_x emissions to 2.0 ppmvd (1-hour average) with and without duct burning. The BACT for CO emissions is best combustion design and the installation of the oxidation catalyst system to reduce CO to 2.0 ppmvd (1-hour) with and without duct burning. The BACT for VOC emissions is best combustion design and the installation of an oxidation catalyst system to control VOC emissions to 2.0 ppmvd (1-hour) with and

without duct burning. Best combustion practice, use of pipeline-quality natural gas, and use of inlet air filtration limit PM10/PM2.5 emissions to 4.5 lb/hr without duct burning and 9.5 lb/hr with duct burning. Operating exclusively on low sulfur pipeline quality natural gas with fuel sulfur content of no more than 1 grain per 100 standard cubic feet limits SOx emissions.

Emission Offsets

District Rule 1303(b)(2) requires that all increases in emissions be offset unless exempt from offset requirements pursuant to district Rule 1304, as described next.

District Rule 1304(a)(2) –Electric Utility Steam Boiler Replacement, states that if electric utility boilers are replaced by advanced gas turbines, including combined cycle and simple cycle configurations² the project would be exempt from emission offset requirements unless there is a basin-wide electricity generation capacity increase on a per-utility basis. If there is an increase in basin-wide capacity, only the increased capacity must be offset via traditional offset rules and regulations. SCAQMD Rule 1135 defines advance combustion sources as those which emit NOx at no greater than 0.10 lb/net MWh on a daily average basis, excluding commissioning, start-up and shutdown periods, if the source is located within the South Coast Air Basin. The MPSA 501DA gas turbine is a combined cycle gas turbine and complies with this rule.

In order to qualify for the exemption, the applicant is proposing to shut down 4 boilers in conjunction with the construction of the new HBEP. The 4 boilers include boilers 1 (215 MW) and 2 (215 MW) at the Huntington Beach site, as well as boilers 6 (175 MW) and 8 (480 MW) at the AES' Redondo Beach Generating Facility. The total capacity of the boilers being shutdown is 1,085 MWs. Therefore the net megawatts would decrease and the new power generating system would qualify for the Rule 1304(a)(2) exemption. Thus, the facility does not have to provide emission reduction credits for VOC and PM10 emissions of the new gas turbines. Instead, the VOC and PM10 emissions of the new gas turbines would be fully offset from SCAQMD's internal bank.

District Rule 1304.1 – Electrical Generating Fee for Use of Offset Exemption requires electrical generating facilities which use the specific offset exemption described in Rule 1304(a)(2) [Electric Utility Steam Boiler Replacement] to pay fees for up to the full amount of offsets provided by the SCAQMD in accordance with Rule 1304. HBEP would be required to demonstrate compliance with the specific requirements of this rule

² The source is replacement of electric utility steam boiler(s) with combined cycle gas turbine(s), intercooled, chemically-recuperated gas turbines, other advanced gas turbine(s); solar, geothermal, or wind energy or other equipment, to the extent that such equipment will allow compliance with Rule 1135 or Regulation XX rules.

prior to issuance of the Permits to Construct for the proposed facility. However, the timing and location(s) of these offsets would not be determined until that time.

Under Rule 2005, the HBEP would be subject to the Regional Clean Air Incentives Market (RECLAIM) program for NO_x emissions. The facility would be required to demonstrate that it holds sufficient RECLAIM Trading Credits (RTCs) to offset the annual NO_x emission increase for the first compliance period using a 1-to-1 offset ratio. Additionally, since the NO_x potential to emit (PTE) after the commissioning year is greater than the facility's initially allocation, HBEP is required to hold NO_x RTCs for each subsequent year. The HBEP is also in the SO_x RECLAIM program. Therefore, SO_x RTCs are required to be held to cover the first year of operation. Additionally, because the facility opted into SO_x RECLAIM after 1994, there is no initial allocation. For this reason, SO_x RTCs are required to be held for each compliance year after the first year of operation.

District Rule 1325 requires a major PM_{2.5} facility to offset PM_{2.5} emissions at the offset ratio of 1.1:1. A major polluting facility is defined in the rule as a facility which has actual emissions, or a potential to emit of greater than 100 tons per year. HBEP is not a major PM_{2.5} facility because the total PM_{2.5} potential to emit of the facility would be 99.3 tons per year, which is less than the 100 tons per year threshold. Therefore, no PM_{2.5} offsets are required for HBEP.

Because the facility area is classified as attainment for CO, the district NSR regulations do not require ERCs for this pollutant.

Adequacy of Proposed Mitigation

The evidence shows that that the NO_x and SO_x RTCs are an appropriate method to mitigate the NO_x and SO_x emissions due to the extensive monitoring and reporting requirement for the RECLAIM program.

For HBEP, the district would provide emission offsets from its internal bank that would meet or exceed a one-to-one offset ratio for all ozone and particulate matter precursors. We find that adverse impacts are mitigated for CEQA purposes by these emissions reductions. These offsets are required to be provided before beginning construction

As shown in **Air Quality Table 9**, there are sufficient mitigation credits to fully offset the new emissions that would be expected to occur at the site from the new HBEP.

Air Quality Table 9
CEQA Mitigation (30-day average lbs/day)

	NOx (lbs/year) ^a	VOC	PM10	SOx (lbs/year) ^b
Emission Reduction Credits or RECLAIM Trading Credits	314,054(501,972)	0	0	21,638 (30,504)
1304 Exemption Credits	0	1,497.6	855.6	0
Total Credits	314,054(501,972)	1,497.6	855.6	21,638 (30,504)
CEQA Mitigation Needed	314,054 (501,972)	1,497.6	855.6	21,638 (30,504)
Further Mitigation Needed	None	None	None	None

Note:

^b NOx and SOx emissions for the commissioning year would be lower than non-commissioning years. All NOx and SOx emissions for both commissioning year and non-commissioning years (shown in parentheses) would be offset by RTCs.

(Ex. 2000, p. 4.1-29.)

Staff Proposed Mitigation

We adopt Staff's proposed Conditions of Certification **AQ-SC7** and **AQ-SC8** to ensure that the license is amended as necessary to incorporate any future changes to the air quality permits and to ensure ongoing compliance during commissioning and routine operation through quarterly reports.

Secondary Pollutant Impacts

The project's gaseous emissions of NOx, SOx, VOC, and ammonia are precursor pollutants that can contribute to the formation of secondary pollutants, ozone, PM10, and PM2.5. Gas-to-particulate conversion in ambient air involves complex chemical and physical processes that depend on many factors, including local humidity, pollutant travel time, and the presence of other compounds. Currently, there are no agency-recommended models or procedures for estimating secondary pollutant ozone or particulate nitrate or sulfate formation from a single project or source. However, because of the known relationships of NOx and VOC to ozone and of NOx, SOx, and ammonia emissions to secondary PM10 and PM2.5 formation, it can be said that unmitigated emissions of these pollutants would contribute to higher ozone and PM10/PM2.5 levels in the region. Mitigating SOx and NOx emissions would both avoid significant secondary PM10/PM2.5 impacts and reduce secondary pollutant impacts to a less than significant level.

Ammonia (NH₃) is a particulate precursor but not a criteria pollutant because there is no ambient air quality standard for ammonia. Reactive with sulfur and nitrogen compounds, ammonia can be found from natural sources, agricultural sources, and as a byproduct of tailpipe controls on motor vehicles and stack controls on power plants.

Energy Commission staff recommends limiting ammonia slip emissions to the maximum extent feasible. This level of control is appropriate for avoiding unnecessary ammonia emissions. We agree with Staff's recommendation for an ammonia slip limit of 5 ppmvd at 15 percent oxygen.

Commissioning-Phase Impacts

Commissioning phase impacts would occur over a short-term period needed to complete the commissioning. The commissioning of each of the two HBEP power blocks is expected to be completed within 180 calendar days. The commissioning emissions estimates are based on partial load operations before the emission control systems become operational.

Since the commissioning periods for Block 1 and Block 2 would not occur within the same year, it is assumed that the maximum predicted impacts for the simultaneous commissioning of all three units at Block 2 combined with the cold startup of all three units at Block 1 would be greater than the predicted impacts from the commissioning or cold startup of Block 1 only. The annual NO₂ impact is not evaluated due to the short commissioning period. Impacts due to PM₁₀, PM_{2.5}, and SO₂ during commissioning would occur under similar exhaust conditions as those for startup while in routine operation because these emissions are proportional to fuel use. As a result, the SO₂, PM₁₀, and PM_{2.5} impacts from commissioning activities are the same as those from normal operation.

Air Quality Table 10 shows that the commissioning phase emissions will not cause new exceedances of any state or federal ambient air quality standard.

Air Quality Table 10
HBEP, Commissioning Phase Maximum Impacts (µg/m³)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
CO	1 hour	5,076	3,450	8,526	23,000	37
	8 hour	4,369	2,444	6,813	10,000	68
NO ₂	1 hour (state)	146.3	139	285.3	339	84

(Ex. 2000, p. 4.1-26.)

Overlap Periods Impacts and Mitigation

Due to the 7.5-year construction period, some construction activities would overlap with the operation of HBEP units. The applicant conducted impact analyses for all overlap scenarios identified by staff. The results of these analyses are extensively documented in the evidentiary record. The evidence shows that although there could be exceedances of certain standards during these overlap periods, they would not be

significant due to the relatively short overlap periods, and also that the mitigation measures we impose would serve to mitigate these impacts below the level of significance.

Cumulative Impacts

Cumulative impacts may result from the project's incremental effect, together with other closely related past, present and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code, § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15130, 15355.)

The air quality analysis focuses on criteria air pollutants, which have impacts that are typically cumulative by nature. Although a project by itself would rarely cause a violation of a federal or state criteria pollutant standard, a new source of pollution may contribute to violations of criteria pollutant standards in the context of existing background pollutant sources or foreseeable future projects. Air districts attempt to reduce background criteria pollutant levels by adopting attainment plans, which are multi-faceted programmatic approaches to attainment. Attainment plans typically include new source review requirements that provide offsets and use BACT, combined with more stringent emissions controls on existing sources.

The evidence includes analysis of the project's potential cumulative air quality impacts, including a description of the air quality background. The District has developed several plans to implement the federal Clean Air Act and state law as it addresses the cumulative air impacts of criteria pollutants. These plans implement the District strategies for addressing these cumulative impacts and eventually achieving attainment with various federal and state standards.

The maximum modeled cumulative impacts are presented below in **Air Quality Table 11**. The total impact is conservatively estimated by the maximum modeled impact plus existing maximum background pollutant levels.

Air Quality Table 11 shows that HBEP, along with three other existing sources, would not cause new exceedances for PM_{2.5}, CO, NO₂, and SO₂. However, PM₁₀ emissions from HBEP would be cumulatively considerable because they would contribute to the existing violations of annual PM₁₀ ambient air quality standards. The HBEP would mitigate emissions through the use of district required best available control technology (BACT) and offset provided by the SCAQMD. Therefore, the cumulative operating impacts after mitigation are considered to be less than significant.

Air Quality Table 11
HBEP, Ambient Air Quality Impacts from Cumulative Sources ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
PM10	24 hour	4.73	45	49.73	50	99
	Annual	0.28	24.2	24.48	20	122
PM2.5	24 hour ^a	4.73	28.3	33.03	35	94
	Annual	0.28	11.0	11.28	12	94
CO	1 hour	328	3,450	3,778	23,000	16
	8 hour	78.4	2,444	2,522.4	10,000	25
NO ₂ ^b	State 1 hour	58.6	139	197.6	339	58
	Federal 1 hour ^c			148	188	79
	Annual	0.73	21	21.73	57	38
SO ₂	State 1 hour	4.95	26	30.95	655	5
	Federal 1 hour ^d	4.95	13	17.95	196	9
	24 hour	1.22	5	6.22	105	6

^a Total predicted concentration for the federal 24-hour PM2.5 standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.

^b The maximum 1-hour and annual NO₂ concentrations include ambient NO₂ ratios of 0.80 and 0.75 respectively.

^c Total predicted concentration for the federal 1-hour NO₂ standard is the maximum modeled concentration paired with the 3-year average of 98th percentile seasonal hourly background concentrations.

^d Total predicted concentration for the federal 1-hour SO₂ standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

(Ex. 2000. P. 4.1-40.)

Since HBEP is subject to prevention of significant deterioration (PSD) review for NO₂, SO₂, CO and PM10, the project impacts must be below the PSD Significant Impact Levels (SILs) and applicable preconstruction monitoring thresholds for these pollutants or an increments analysis and/or preconstruction monitoring may be required. The evidence shows that the PM, SO₂, CO, and annual NO₂ impacts from the new units are all below corresponding SILs levels. However, the maximum 1-hour NO₂ impacts would exceed the applicable NO₂ SIL (7.5 $\mu\text{g}/\text{m}^3$), so an increments analysis is required for NO₂ impacts. The SCAQMD and EPA identified three sources to include in the 1-hour NO₂ cumulative analysis:

- Orange County Sanitation District (Facility ID 17301) located in Fountain Valley, CA with five emission sources;
- Orange County Sanitation District (Facility ID 29110) located in Huntington Beach, CA with seven emission sources;
- Beta Offshore (Facility ID 166903): located in Huntington Beach, CA with 21 emission sources

In addition to the above facilities, emissions from shipping lane activities off the California coast are also included in the 1-hour NO₂ cumulative assessment. The evidence shows that HBEP cumulative sources would not cause new exceedances of the federal 1-hour NO₂ standard. Therefore, no additional PSD analysis is necessary.

The evidence shows that Staff has considered the minority population surrounding the site (see the **SOCIOECONOMICS** section of this Decision). Since the project's cumulative air quality impacts have been mitigated to less than significant, there is no environmental justice issue for air quality.

Compliance with LORs

The project's emissions and air quality impacts must comply with various local, state, and federal LORs. We find that the Applicant, Staff, and the District have evaluated the project's air quality impacts and that the project will comply with applicable LORs with implementation of the conditions of certification we impose herein. (Exs. 1139; 2000 pp 4.1-41 – 4.1-49.)

PUBLIC AND AGENCY COMMENTS

Since the publication of the Final Staff Assessment, the only comment docketed at the Energy Commission from a non-party is from Marvin Dixon (TN 202456). Mr. Dixon writes in support of the project and expressed no concerns regarding air quality impacts.

FINDINGS OF FACT

Based on the record, we find as follows:

1. The HBEP would be located in the South Coast Air Basin and within the South Coast Air Quality Management District.
2. The area where HBEP would be located is designated as nonattainment for both state and federal ozone and PM_{2.5} standards, attainment for federal PM₁₀ and nonattainment for state PM₁₀ standards, and attainment for both state and federal CO, NO₂ and SO₂ standards.
3. Project construction would contribute to violations of the ozone, PM₁₀, and PM_{2.5} ambient air quality standards. We recommend adoption of Conditions of Certification **AQ-SC1** to **AQ-SC6** to mitigate the construction-phase impacts of the proposed project.
4. Project operation would neither cause new violations of CO, NO₂, SO₂ and PM_{2.5} ambient air quality standards nor contribute to existing violations for these pollutants. Therefore, as mitigated, the project's direct CO, NO₂, SO₂ and PM_{2.5} impacts are less than significant.

5. The project's annual PM10 emissions would contribute to the existing violation of state air quality standards. The District would offset the PM10 emissions from its internal bank to mitigate the PM10 impacts of the new gas turbines to a less than significant level. The offsets would be in sufficient quantities to satisfy Energy Commission staff's recommendation that all nonattainment pollutant and precursor emissions be offset by at least a one pound of offsets for each pound of emissions.
6. The SCAQMD has issued a Final Determination of Compliance (FDOC) finding that HBEP would comply with all applicable district rules and regulations for project operation. The district's revised FDOC conditions are included herein as conditions of certification **AQ-1** through **AQ-41**.
7. This analysis contains an adequate evaluation of the project's contributions to cumulative air quality impacts.
8. Implementation of the conditions of certification listed below would ensure that the HBEP will not result in any significant direct, indirect, or cumulative adverse impacts to air quality.
9. The record contains an adequate analysis of the project's potential contributions to cumulative air quality impacts.
10. Implementation of the conditions of certification listed below would ensure that the HBEP will not result in any significant direct, indirect, or cumulative adverse impacts to air quality.

CONCLUSIONS OF LAW

1. Implementation of the mitigation measures described in the record and contained in the following conditions of certification are sufficient to ensure that HBEP will conform with all applicable laws, ordinances, regulations, and standards relating to air quality as set forth herein.
2. Implementation of the mitigation measures described in the record and contained in the conditions of certification ensures that the project will not result in significant direct, indirect, or cumulative air quality impacts in conformance with CEQA requirements.

C. PUBLIC HEALTH

The public health analysis supplements the **AIR QUALITY** section and considers the potential public health effects that could result from exposure to emissions of toxic air contaminants (or “TACs”) during project construction and operation. This topic focuses on whether such emissions represent significant public health impacts or violate standards for public health protection.¹

SUMMARY AND DISCUSSION OF THE EVIDENCE

Introduction

Project construction and operation will produce routine emissions of toxic air contaminants for which no ambient air quality standards have been established. These substances are categorized as noncriteria pollutants. In the absence of standards, state and federal regulatory agencies have developed health risk assessment procedures to evaluate potential health effects from exposure to these TACs. (Ex. 2000, p. 4.7-6.)

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the project could emit into the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and
- Characterize potential health risks by comparing worst-case exposure to the project with the scientific safety standards based on known health effects. (Ex. 2000, p. 4.7-7.)

¹ This Decision describes other potential public health concerns under specific topics. Potential impacts from emissions of criteria pollutants are analyzed in the **Air Quality** section. The accidental release of hazardous materials is addressed in **Hazardous Materials Management**. Electromagnetic fields are covered in **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are considered in the **Soil and Water Resources** section. Potential exposure to contaminated soils and hazardous wastes are described in **Waste Management**. The **Socioeconomics, Traffic and Transportation**, and **Worker Safety and Fire Prevention** sections include analyses of the project’s potential effects upon local infrastructure such as police, medical, and fire services.

Typically, the initial health risk analysis is performed at a “screening level,” which is designed to estimate potential health risks under the most conservative, worst-case conditions and model those conditions to analyze results.² Such conditions include:

- Using the highest levels of pollutants that could be emitted from the power 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. 2000, p. 4.7-8.)

A screening-level risk assessment would, at a minimum, include the potential health effects from inhaling hazardous substances. Some facilities would also emit certain substances (e.g. semi-volatile organic chemicals and heavy metals) that could present a health hazard from non-inhalation pathways of exposure. When these multi-pathway substances are present in facility emissions, the screening-level analysis would include the following additional exposure pathways: soil ingestion, dermal exposure, consumption of locally grown plant foods, mother’s milk and water ingestion. (id.)

Laws, Ordinances, Regulations and Standards (LORS)

Public Health Table 1 lists the federal, state, and local laws and policies applicable to the control of TAC emissions and mitigation of public health impacts for HBEP. This section evaluates compliance with these requirements and summarizes the applicable laws, ordinances, regulations and standards (LORS).

² The evidence is based on data from several expert agencies, including the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA), which identifies contaminants that are known to cause cancer or other noncancer toxicological endpoints and calculates the toxicity and cancer potency factors of these contaminants. In addition, the California Air Resources Board and the local air districts conduct ambient air monitoring of toxic air contaminants and the state Department of Public Health conducts epidemiological investigations into the impacts of pollutants on communities.

**Public Health Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Federal	
Clean Air Act section 112 (Title 42, U.S. Code section 7412)	Section 112 of the Clean Air Act addresses emissions of hazardous air pollutants (HAPs). This act requires new sources that emit more than 10 tons per year of any specified HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).
40 Code of Federal Regulations (CFR) Part 63 Subpart YYYYY (National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines)	This regulation applies to gas turbines located at major sources of HAP emissions. A major source is defined as a facility with emissions of 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of a combination of HAPs based on the potential to emit.
40 Code of Federal Regulations (CFR) Part 68 (Risk Management Plan)	This rule requires facilities storing or handling significant amounts of acutely hazardous materials to prepare and submit Risk Management Plans.
State	
California Health and Safety Code section 25249.5 et seq. (Proposition 65)	These sections establish thresholds of exposure to carcinogenic substances above which Proposition 65 exposure warnings are required.
California Health and Safety Code, Article 2, Chapter 6.95, Sections 25531 to 25541; California Code of Regulations (CCR) Title 19 (Public Safety), Division 2 (Office of Emergency Services), Chapter 4.5 (California Accidental Release Prevention Program)	These regulations require facilities storing or handling significant amounts of acutely hazardous materials to prepare and submit Risk Management Plans.
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 Health and Safety Code Sections 44300 et seq.	Air Toxics Hot Spots Program requires participation in the inventory and reporting program at the local air pollution control district level.
California Health and Safety Code Sections 44360 to 44366 (Air Toxics “Hot Spots” Information and Assessment Act—AB 2588)	This act requires that based on results of a health risk assessment (HRA) conducted per ARB (California Air Resources Board) / OEHHA (Office of Environmental Health Hazard Assessment) guidelines, toxic contaminants do not exceed acceptable levels.

Applicable LORS	Description
State	
California Public Resource Code section 25523(a); Title 20 California Code of Regulations (CCR) section 1752.5, 2300–2309 and Division 2 Chapter 5, Article 1, Appendix B, Part (1); California Clean Air Act, Health and Safety Code section 39650, et seq.	These laws and regulations require a quantitative health risk assessment for new or modified sources, including power plants that emit one or more toxic air contaminants (TACs).
Local	
SCAQMD Rule 1401 (New Source Review of Toxic Air Contaminants)	This rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants (TACs).
SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities)	This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.
SCAQMD Rule 212(c)(3) (Permits – Public Notice)	This rule requires public notification if the maximum individual cancer risk (MICR), based on Rule 1401, exceeds one in 1 million (1×10^{-6}), due to a project's proposed construction, modification, or relocation for facilities with more than one permitted source unless the applicant can show the total facility-wide MICR is below 10 in 1 million (10×10^{-6}).

Significance Criteria

The risk assessment process addresses three categories of health impacts: acute (short-term) health effects, chronic (long-term) noncancer effects, and cancer risk (also long-term).

Acute health effects result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Acute effects are temporary in nature and include symptoms such as irritation of the eyes, skin, and respiratory tract.

Chronic health effects are those that arise as a result of long-term exposure to lower concentrations of pollutants. The exposure period is considered to be approximately from 12 percent to 100 percent of a lifetime, or from 8 to 70 years. Chronic health effects include diseases such as reduced lung function and heart disease.

The analysis for noncancer 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 could be exposed and suffer no adverse health effects. These exposure levels are designed to protect the previously noted 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 Reference Exposure Levels are based on the most sensitive adverse health effect reported in the medical and toxicological literature and include margins of safety. The margin of safety is used to address uncertainties associated with inconclusive scientific and technical information available at the time of REL determination and is meant to provide a reasonable degree of protection against hazards that research has not yet identified. The margin of safety is designed to prevent pollution levels that have been demonstrated to be harmful, as well as to prevent lower pollutant levels that may pose an unacceptable risk of harm, even if the risk is not precisely identified as to nature or degree. Health protection is assumed if the estimated worst-case exposure is below the relevant reference exposure level. In such a case, an adequate margin of safety would be assumed to exist between the predicted exposure and the estimated threshold dose for toxicity. (Ex. 2000, p. 4.7-9.)

For carcinogenic substances, the health assessment considers the risk of developing cancer and assumes that continuous exposure to the cancer-causing substance would occur over a 70-year lifetime. The risk that is calculated is not meant to project the actual expected incidence of cancer, but is rather regarded as a theoretical upper-bound estimate based on worst-case assumptions.

Cancer risk is expressed in terms of chances per million of cancer and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant would cause cancer (called *potency factors*), and the length of the exposure period. Cancer risks for individual carcinogens are added together to yield the total cancer risk from each potential source. The conservative nature of the screening-level assumptions means that actual cancer risks from project emissions would be considerably lower than estimated. If the screening-level analysis were to predict a risk below significant levels, further analysis would not be necessary. However, if the risk estimates were to be above the significance level, then further analysis, using more realistic site-specific assumptions, would be performed to obtain a more accurate assessment of potential health risks. (Ex. 2000, p. 4.7-10.)

Setting and Public Health Concerns

Demolition and Construction Impacts and Mitigation

The demolition and construction period for HBEP would be approximately 7.5 years. The potential demolition and construction risks include exposure to asbestos, fugitive dust, and combustion emissions (i.e. diesel exhaust).

Asbestos

The demolition of buildings containing asbestos would cause the emission of asbestos. Asbestos is a mineral fiber that occurs in rock and soil. Because of its fiber strength and heat resistance, it has been used in a variety of building construction materials for insulation and as a fire-retardant. Exposure to asbestos and asbestos containing materials (ACM) increases workers' and residents' risk of developing lung diseases, including asbestosis, lung cancer, and mesothelioma.

The applicant stated that they would comply with all requirements outlined in SCAQMD Rule 1403, which requires the notification and special handling of asbestos-containing materials during demolition activities. The following actions were proposed by the applicant to comply with SCAQMD Rule 1403:

1. Prior to starting demolition activities, the project owner would conduct a facility survey to identify and quantify the presence of all friable and non-friable Class I and Class II asbestos-containing material (ACM). The survey would document the contact information and written qualifications for the person conducting the survey, survey dates, a listing of ACM, a sketch of where all samples were collected, contact information and a statement of qualifications for the laboratory conducting the ACM sample analyses, and sample test methods used with sampling protocols and laboratory methods.
2. The project owner would notify the SCAQMD and California Energy Commission construction project manager (CPM) by letter of the intent to conduct demolition activities in a district-approved format no later than 10 working days prior to the start of any demolition activities. The notification would include:
 - whether it is original or revised;
 - contact information for the applicant, supervising person, operator, asbestos removal contractor;
 - facility address and location;

- a description of the affected parts (square feet/meters, number of floors, age, and present or prior uses) of the facility to be demolished;
- the specific location of ACM removal at the facility;
- schedule for starting and completing the demolition activity;
- a brief description of work practices and engineering controls to be employed to remove and handle ACM;
- an estimate of the amount of friable ACM and non-friable (Class I and Class II) ACM to be removed;
- name and location of the ACM waste disposal facility;
- procedures describing the identification of unexpected ACM or Class II non-friable asbestos;
- State Contractors License and Cal/OSHA Registration Numbers,
- procedures used to detect and analyze friable and non-friable asbestos; and
- certification that a trained person would supervise stripping and removal activities.

Notifications would be updated as appropriate to document if the quantity of affected asbestos changes by more than 20 percent and changes in the start and completion dates.

3. Asbestos removal would employ one or more of the following methods: High Efficiency Particulate Air (HEPA) Filtration, Glovebag or Minienclosures, Dray Removal, or an alternative approved method.
4. Collected ACM would be placed in a leak-tight container and would be handled and stored to avoid releasing ACM to the atmosphere. Storage containers would be appropriately marked with warning labels.
5. The applicant would designate an onsite representative to be present during all ACM demolition or handling procedures. The onsite representative would successfully complete the Asbestos Abatement Contractor/Supervisor course pursuant to the Asbestos Hazard Emergency Response Act and Provision of Title 40, Code of Federal Regulations, Parts 61.145 to 61.147, 61.152, and Part 763.
6. The applicant would dispose of ACM wastes at a licensed waste disposal facility and would maintain copies of the waste shipment records. ACM

wastes would be hauled from the site by an appropriately licensed ACM waste transporter and the applicant would maintain copies of all manifests.

(Ex. 2000, pp. 4.7-12 – 4.7-13.)

Condition of Certification **WASTE-2** requires that the project owner submit the SCAQMD Asbestos Notification Form to SCAQMD and the Energy Commission for review and approval prior to removal and disposal of asbestos. This program ensures there will be no release of asbestos that could impact public health and safety.

We find that the mitigation measures we adopt herein with respect to asbestos hazards during demolition and construction activities will ensure that there will be no release of asbestos that could impact public health and safety.

Fugitive Dust

Fugitive dust is defined as dust particles that are introduced into the air through certain activities such as soil cultivation, vehicles operating on open fields, or dirt roadways. Fugitive dust emissions during construction of the proposed project could occur from:

- dust entrained during site preparation and grading/excavation at the construction site;
- dust entrained during onsite movement of construction vehicles on unpaved surfaces;
- fugitive dust emitted from an onsite concrete batch plant; and
- wind erosion of areas disturbed during construction activities.

The effects of fugitive dust on public health are covered in the **AIR QUALITY** section, which includes staff's recommended mitigation measures, including Conditions of Certification **AQ-SC3** (Construction Fugitive Dust Control) and **AQ-SC4** (Dust Plume Response Requirement) to prevent fugitive dust plumes from leaving the project boundary. As long as the dust plumes are kept from leaving the project site, there will be no significant concern of fugitive dust adversely affecting public health. (Ex. 2000, p. 4.7-14.)

Diesel Exhaust

The primary air toxic pollutant of concern from construction/demolition activities is diesel particulate matter (diesel PM or DPM). Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the U.S. Environmental Protection Agency (EPA) as

hazardous air pollutants (HAPs) and by ARB as toxic air contaminants. The diesel particulate matter (DPM) is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious noncancer effects and its status as a likely human carcinogen. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the EPA as “likely to be carcinogenic to humans.” (Ex. 2000, p. 4.7-15.)

Emissions of combustion byproducts during construction would result from:

- exhaust from diesel construction equipment used for site preparation, grading, excavation, trenching, and construction of onsite and offsite (transmission- and gas pipeline-related) structures;
- exhaust from water trucks used to control construction dust emissions;
- exhaust from portable welding machines, small generators, and compressors;
- exhaust from diesel trucks used to transport workers and deliver concrete, fuel, and construction supplies to construction areas; and
- exhaust from vehicles used by construction workers to commute to and from the project areas.

The applicant’s analysis of HBEP Construction Excess Cancer Risk Assessment Isoleths shows that the construction cancer risk exceeds the threshold of 10 in one million on the eastern fence line, in the adjacent open space area and a fuel oil tank farm - neither of which includes residential or commercial/industrial buildings (Ex. 1086). Staff agrees with the applicant and regards the related conditions of certification of **AQ-SC5** (Diesel-Fueled Engine Control) in the **AIR QUALITY** section as adequate to ensure that cancer-related impacts of diesel exhaust emissions for the public and off-site workers are mitigated during construction/demolition to a point where they are not considered significant. Also, since the adjacent wetland and tank farm are already fenced by their property owners, there would not be any public access to this area during construction/demolition period. However, since the risk value is higher than the public notification levels set forth by SCAQMD (i.e. ≥ 10 in one million), we will require the applicant to follow SCAQMD’s notification procedures as set forth in condition of certification **AQ-SC5** (Diesel-Fueled Engine Control) in the **AIR QUALITY** section. (Ex. 2000, p. 4.7-17.)

Operation Impacts and Mitigation

Hazard Identification

The proposed HBEP would be a natural gas-fired, combined-cycle, air-cooled, nominal 939-megawatt (MW) electrical generating facility. Pollutants that could potentially be emitted are listed in **Public Health Table 2**, including both criteria and non-criteria pollutants. These pollutants include certain volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs). Criteria pollutant emissions and impacts are examined in staff's **AIR QUALITY** analysis. Since the facility would use dry cooling, there would be no emissions of toxic metals or VOCs from cooling tower mist or drift and no health risk from the potential presence of the Legionella bacterium responsible for Legionnaires' disease. (Ex. 2000, p. 4.7-17.)

Public Health Table 2
Pollutants Emitted from Operation of the Proposed Project

Criteria Pollutants	Non-criteria Pollutants
Carbon monoxide (CO)	Acetaldehyde
Oxides of nitrogen (NO _x)	Acrolein
Particulate matter (PM10 and PM2.5)	Ammonia
Oxides of sulfur (SO ₂)	Benzene
Volatile Organic Compounds (VOCs)	1,3-Butadiene
	Ethylbenzene
	Formaldehyde
	Hexane
	Naphthalene
	Polycyclic Aromatic Hydrocarbons (PAHs, as BaP ^a)
	Propylene
	Propylene oxide
	Toluene
	Xylene

^a Benzo[a]pyrene

(Ex. 2000, p. 4.7-18.)

Applicant's screening risk assessment was based on the data described in the record and appropriate modeling protocol established by the expert agencies. The risk assessment resulted in a maximum chronic Hazard Index (HI) of 0.00778 and a maximum acute HI of 0.0781. (Ex. 1086, Table DR107-1R.) As **Public Health Table 3** shows, both acute and chronic hazard indices are less

than 1.0, indicating that no short - or long-term adverse health effects are expected.

**Public Health Table 3
Cancer Risk and Chronic Hazard from HBEP Operations**

Receptor Location	Cancer Risk (per million)	Chronic HI ^e	Acute HI ^e
PMI^a	2.54	0.00778	0.0781
	4.32 ^d		
Residence MEIR^b	2.2	0.00691	0.0502
Worker MEIW^c	0.446	0.00778	0.0781
Highest Cancer Risk at a Sensitive Receptor (Daycare)	0.458	0.00144	0.0183
Highest Cancer Risk at a Sensitive Receptor (Edison High School)	1.65	0.00519	0.0129
Significance level	10	1	1

^a PMI = Point of Maximum Impact

^b MEIR = MEI of residential receptors. Location of the residence of the highest risk with a 70-year residential scenario.

^c MEIW = MEI for offsite workers. Occupational exposure patterns assuming standard work schedule, i.e. exposure of 8 hours/day, 5 days/week, 49 weeks/year for 40 years (OEHHA 2003, Chapter 8, pp.8-5).

^d Cancer risk calculated by using the Age Sensitivity Factors recommended by OEHHA (OEHHA 2012). The cancer risk of PMI= ADD X CPF X [(10 X 0.3 yrs/70 yrs) + (10 X 2 yrs/70 yrs) + (3 X 14 yrs/70 yrs)+ (1 X 54 yrs/70 yrs)] = (2.54 x 10⁻⁶) x (10 x 0.3/70+10 x 2/70+3 x 14/70+1 x 54/70) = 4.32 x 10⁻⁶⁰.

^e HI = Hazard Index

(Ex. 2000, p. 4.7-24.)

Characterization of Risks from TACs

Effective August 2012, all air toxics health risk assessments should use the new OEHHA’s Air Toxics Hot Spots Program Risk Assessment Guideline which recommends breaking down exposure/risk by age group using age-dependent adjustment factors to calculate the cancer risk. This new methodology is used to reflect the fact that exposure varies among different age groups and exposure occurring in early life has a higher weighting factor. Staff calculated the cancer risk at the Point of Maximum Impact (PMI) to check if cancer risks at this point exceed the threshold. Human health risks associated with emissions from the proposed and similar projects are unlikely to be higher at any location other than the PMI. (Ex. 2000, p. 4.7-21.)

Risk to Sensitive Receptors

The nearest sensitive receptor is a daycare facility located 0.3 mile east of the project site. The cancer risk at this daycare is 0.458 in one million, the chronic HI is 0.00144 and the acute HI is 0.018. The nearest school is the Edison High School, located approximately 0.5 mile to the northeast of the project site. The cancer risk at this school is 1.65 in one million, the chronic HI is 0.00519 and the acute HI is 0.0129. All risks are below the significance level, as shown in **Public Health Table 4**. (Ex. 2000, p. 4.7-23.)

Risk to Workers

The cancer risk to potentially exposed workers was presented by the applicant in terms of risk to the maximally exposed individual worker or MEIW at PMI and is summarized in **Public Health Table 4**. The applicant's assessment is for potential workplace risks uses a shorter duration exposure rather than the 70-year exposure used residential risks. Workplace risk is presently calculated by regulatory agencies using exposures of 8 hours per day, 245 days per year, over a 40-year period. All risks are below the significance level. (Ex. 2000, p. 4.7-23.)

Project-Related Impacts at Area Residences

Residential risk is presently assumed by the regulatory agencies to result from exposure lasting 24 hours per day, 365 days per year, over a 70-year lifetime. Residential risks were presented in terms of MEIR and health hazard index (HHI) at residential receptors in **Public Health Table 4**. The cancer risk for the MEIR is 2.2, which is below the significance level. The maximum resident chronic HI and acute HI are 0.00691 and 0.0502, respectively. They are both less than 1.0, indicating that no short- or long-term adverse health effects are expected at these residents. (Ex. 2000, p. 4.7-22.)

**Public Health Table 4
Cancer Risk and Chronic Hazard from HBEP Operations**

Receptor Location	Cancer Risk (per million)	Chronic HI ^e	Acute HI ^e
PMI^a	2.54	0.00778	0.0781
	4.32^d		
Residence MEIR^b	2.2	0.00691	0.0502
Worker MEIW^c	0.446	0.00778	0.0781
Highest Cancer Risk at a Sensitive Receptor (Daycare)	0.458	0.00144	0.0183
Highest Cancer Risk at a Sensitive Receptor (Edison High School)	1.65	0.00519	0.0129
Significance level	10	1	1

^a PMI = Point of Maximum Impact

^b MEIR = MEI of residential receptors. Location of the residence of the highest risk with a 70-year residential scenario.

^c MEIW = MEI for offsite workers. Occupational exposure patterns assuming standard work schedule, i.e. exposure of 8 hours/day, 5 days/week, 49 weeks/year for 40 years (OEHHA 2003, Chapter 8, pp.8-5).

^d Cancer risk calculated by using the Age Sensitivity Factors recommended by OEHHA (OEHHA 2012). The cancer risk of PMI= ADD X CPF X [(10 X 0.3 yrs/70 yrs) + (10 X 2 yrs/70 yrs) + (3 X 14 yrs/70 yrs) + (1 X 54 yrs/70 yrs)] = (2.54 x 10⁻⁶) x (10 x 0.3/70 + 10 x 2/70 + 3 x 14/70 + 1 x 54/70) = 4.32 x 10⁻⁶

^e HI = Hazard Index

(Ex. 2000, p. 4.7-24.)

Cumulative Impacts

The SCAQMD identified three facilities within 6 miles of HBEP for inclusion in the cumulative impact assessment of 1-hour NO₂:

- Orange County Sanitation District (Facility ID 29110): located in Huntington Beach, California with seven emission sources
- Orange County Sanitation District (Facility ID 17301): located in Fountain Valley, California with five emission sources
- Beta Offshore (Facility ID 166903): located in Huntington Beach, California with 21 emission sources. (Ex. 2000, p. 4.7-24.)

The maximum cancer risk and non-cancer hazard index (both acute and chronic) for operations emissions from the HBEP estimated independently by the applicant, staff, and the SCAQMD are all below the level of significance. While air quality cumulative impacts could occur with sources within a 6-mile radius, cumulative public health impacts are usually not significant unless the emitting

sources are extremely close to each other, within a few blocks, not miles. We therefore conclude that the proposed HBEP project, even when combined with these projects, would not contribute to cumulative impacts in the area of public health. (Ex. 2000. P. 4.7-25.)

Environmental Justice Concerns and LORS Compliance

The evidence shows that a Health Risk Analysis for the proposed HBEP found no potentially significant adverse impacts for any receptors, including sensitive receptors. This analysis complies with all directives and guidelines from the Cal/EPA Office of Environmental Health Hazard Assessment and the California Air Resources Board. Using extremely conservative (health-protective) exposure and toxicity assumptions, staff's analysis demonstrates that members of the public potentially exposed to toxic air contaminant emissions of this project, including sensitive receptors such as the elderly, infants, and people with pre-existing medical conditions would not experience any acute or chronic significant health risk or any significant cancer risk as a result of that exposure.

We therefore conclude that construction and operation of the HBEP would comply with all applicable LORS regarding long-term and short-term project impacts in the area of public health.

The evidence shows that the environmental justice population is not greater than fifty percent within a six-mile buffer of the proposed HBEP site. Because no members of the public potentially exposed to toxic air contaminant emissions of this project would experience acute or chronic significant health risk or cancer risk as a result, there would not be a disproportionate public health impact resulting from construction and operation of the proposed project to an environmental justice population. (Ex. 2000, pp. 4.7-25 – 4.7-26.)

FINDINGS OF FACT

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

1. Construction and 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. Emissions of criteria pollutants, as discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels consistent with applicable state and federal standards.
3. Emissions of noncriteria pollutants or toxic air contaminants are assessed according to procedures developed by state and federal regulatory

agencies to evaluate potential health effects to protect the most sensitive individuals in the population.

4. The accepted method used by state and federal regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects of noncriteria pollutants is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects based on incremental exposure levels.
5. The evidence contains a screening level health risk assessment of the project's potential health effects due to emissions of toxic air contaminants (TACs).
6. The health risk assessment is based on worst case assumptions using the highest emission factors, assuming the worst weather conditions, and calculating effects at the point of maximum impact so that actual risks are expected to be much lower at any other location.
7. Exposure to diesel particulate emissions from construction equipment will not result in long-term carcinogenic or non-carcinogenic health effects with the implementation of the conditions of certification set forth in the **AIR QUALITY** section of this Decision.
8. Exposure to construction-related diesel particulates will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.
9. Exposure to particulates in fugitive dust due to excavation and construction activities will be mitigated to insignificant levels by implementing measures to reduce dust production and dispersal.
10. The health risk assessment for exposure to TAC emissions during project operations confirmed that acute and chronic calculated risks fall below the significance level of 1.0, and that the cancer risk is below the significance level of 10 in one million.
11. Cumulative impacts from noncriteria pollutants were analyzed in accordance with CEQA requirements and are not expected to be significant.
12. Since the project's contributions to health risks are well below the significance level, the project is not expected to contribute significantly to a cumulative health impact.

13. Members of the public potentially exposed to toxic air contaminant emissions of this project—including sensitive receptors such as the elderly, infants, and people with pre-existing medical conditions—will not experience any acute or chronic significant health risk or any significant cancer risk as a result of that exposure.
14. Environmental justice populations will not be adversely affected by the construction and operation of the project.

CONCLUSIONS OF LAW

1. We therefore conclude that emissions of noncriteria pollutants from the construction and operation of the HBEP do not pose a significant direct, indirect, or cumulative adverse public health risk.
2. The project will comply with the applicable laws, ordinances, regulations, and standards (LORS) specified herein.

CONDITIONS OF CERTIFICATION

No public health conditions of certification are proposed.

D. WORKER SAFETY AND FIRE PROTECTION

INTRODUCTION

This section of the Decision focuses on whether Applicant's proposed health and safety plans are in accordance with all applicable laws, ordinances, regulations, and standards and thus adequate to protect industrial workers. We also address the availability and adequacy of fire protection and emergency response services.

The topic of **WORKER SAFETY AND FIRE PROTECTION** was uncontested. (07/21/14 RT 19:15 – 19:22.) The following evidence on **WORKER SAFETY AND FIRE PROTECTION** was received on July 21, 2014: Exhibits 1001, 1017, 1044, 1122, 1132, 1133, 1137, and 2000. (07/21/14 RT 29:13 – 31:11.)

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

The proposed facility would be located in the city of Huntington Beach within an industrial area that is currently served by the city of Huntington Beach Fire Department (HBFD). The closest fire station to the HBEP site would be Station #4, located approximately 0.8 miles away. The total response time from the moment a call is made to the point of arrival at the site would be approximately 5 minutes. The next closest station would be Station #5, located about 2.0 miles away, which would respond within 6 to 7 minutes. (Ex. 2000, p. 4.14-3.)

The first responders to a hazardous materials incident would be from HBFD Station #4. If needed, a full hazardous materials response would be provided by the HBFD Hazardous Materials Response Team (HBFD-HMRT) located at HBFD Station #6, located at 18591 Edwards Street, Huntington Beach, CA, approximately 4 miles away. The HBFD-HMRT is capable of handling any hazardous materials-related incident at the proposed facility and would have a response time of 15-to-20 minutes. (Ex, 2000, p. 4.14-3.)

In addition to construction and operations worker safety issues, the potential exists for exposure to contaminated soil during site preparation. The Phase I Environmental Site Assessment conducted for this site in 2012 concluded that the areas beneath existing structures may have environmental conditions that would require remediation and that this should be assessed during the time these structures are removed. To address the possibility that soil contamination would be encountered during construction of the

HBEP, proposed Conditions of Certification **WASTE-3** and **WASTE-4**¹ require a registered professional engineer or geologist to be available during soil excavation and grading to ensure proper handling and disposal of contaminated soil. Please see the **WASTE MANAGEMENT** section of this Decision for a more detailed analysis of this topic.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Implementation of various federal, state, and local laws, ordinances, regulations, and standards (LORS) regulate worker safety and fire protection. Industrial workers at the facility operate equipment and handle hazardous materials daily and may face hazards that can result in accidents and serious injury. Protection measures are employed to eliminate or reduce these hazards or to minimize the risk through special training, protective equipment, and procedural controls. Implementation of these LORS suffices to reduce these hazards to minimal levels. Therefore, this section of the Decision focuses on whether Applicant’s proposed health and safety plans are in accordance with all applicable LORS and thus adequate to protect industrial workers. (Ex. 2000, p. 4.14-3- 4.14.-4.)

Worker Safety and Fire Protection Table 1 contains a list of the LORS applicable to the demolition, construction and operation of the HBEP, as well as the LORS related to the provision of fire protection and emergency response services.

**Worker Safety and Fire Protection Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable Law	Description
Federal	
Title 29 U.S. Code (USC) section 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).
Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.
29 CFR sections 1952.170 to 1952.175	These sections provide federal approval of California’s plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 CFR sections 1910.1 to

¹ The Conditions of Certification for Worker Safety and Fire Protection are contained in Appendix A to this Decision.

Applicable Law	Description
	1910.1500.
State	
Title 8 California Code of Regulations (Cal Code Regs.) all applicable sections (Cal/OSHA regulations)	These sections require 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 Cal Code Regs. section 3, et seq.	This section incorporates the current addition of the Uniform Building Code.
Health and Safety Code section 25500, et seq.	This section presents Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	These sections require a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.
Local (or locally enforced)	
California Fire Code 2010	The fire code contains general provisions for fire safety, including requirements for proper storage and handling of hazardous materials and listing of the information needed by emergency response personnel. Enforced by the Huntington Beach Fire Department.
City of Huntington Beach Municipal Code, Chapter 17.56	City of Huntington Beach Fire Code: The City of Huntington Beach has adopted the California Fire Code and has adopted several ordinances which amend it.
City of Huntington Beach Municipal Code Section 17.58	Develop and implement safety management plans as required by CA H&SC Sections 25500-25520. Administered by the Huntington Beach Fire Department
City of Huntington Beach Fire Department City Specifications	Various Huntington Beach Fire Department City Specifications (numbered 401 through 434) may be found at: http://www.huntingtonbeachca.gov/government/departments/Fire/fire_prevention_code_enforcement/fire_dept_city_specifications.cfm
NFPA 56 (adopted 2012)	NFPA 56 is the Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems.
National Fire Protection Association standards	These standards provide specifications and requirements for fire safety, including the design, installation, and maintenance of fire protection equipment. Enforced by the Huntington Beach Fire Department.

(Ex. 2000, p. 4.14-2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Worker Safety

Industrial environments are potentially dangerous during construction and operation. HBEP encompasses construction and operation of a natural gas-fired facility. Workers would be exposed to hazards typical of construction and operation of a gas-fired combined-cycle facility, including exposure 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. HBEP must therefore have well-defined policies and procedures, training, and hazard recognition and control to minimize such hazards and to protect workers. (Ex. 2000, p. 4.14-4.)

The evidence details the type and content of various plans that must be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. For example, the project owner will develop and implement a “Construction Safety and Health Program” and an “Operations and Maintenance Safety and Health Program,” both of which must be reviewed by the Compliance Project Manager prior to project construction and operation, respectively. A separate “Injury and Illness Prevention Program,” a “Personal Protective Equipment Program,” an “Emergency Action Plan,” a “Fire Prevention Plan,” and other general safety procedures will be prepared for both the construction and operation phases of the project. (Ex. 2000, pp. 4.14-4 – 4.14-8.)

We impose Conditions of Certification **WORKER SAFETY-1** and **-2** to ensure that these measures will be developed and implemented.

Occupational Safety and Health Administration (OSHA) and California Occupational Safety and Health Administration (Cal-OSHA) do not require that an employer hire or provide for a Construction Safety Officer. However, both OSHA and Cal-OSHA standards require employers to monitor worker safety by employing a “competent person” who has knowledge and experience enforcing workplace safety standards, can identify hazards relating to specific project operations, and has authority to take appropriate action. To implement the intent to provide a safe workplace during power plant construction, we impose Condition of Certification **WORKER SAFETY-3** to require the project owner to designate a power plant Construction Safety Supervisor. This individual will coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses. (Ex. 2000, pp. 4.14-19 – 4.14-20.)

As discussed above, the hazards associated with the construction industry are well documented. Accidents, fires, and a worker death have occurred at Energy Commission-certified power plants in the recent past due to the failure to recognize and control safety hazards and the inability to adequately supervise compliance with occupational safety and health regulations. Safety problems were documented by Energy Commission staff in safety audits conducted in 2005 at several power plants under construction. (Ex. 2000, pp. 4.14-10 – 4.14-11.)

In order to reduce and/or eliminate these hazards, a professional Safety Monitor is needed on site to track compliance with Cal/OSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. We impose Condition of Certification **WORKER SAFETY-4** to mandate the appointment and qualification of a Safety Monitor to coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses.

Fire Hazards

Fire Facilities

Construction and operation of HBEP pose the potential for both small fires and major structural fires. Electrical sparks, combustion of 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. Compliance with all LORS would be adequate to assure protection from all fire hazards. (Ex. 2000, pp. 4.14-11 – 4.14-12.)

HBEP will rely on both on-site and local fire protection services. In fact, the on-site fire protection system provides the first line of defense for such occurrences. The Construction Fire Prevention Plan (Condition **WORKER SAFETY-1**) must address and detail measures to minimize the likelihood of fires during construction. These measures include the placement of portable fire extinguishers, safety procedures, and training. (Ex. 2000, pp. 4.14-11 – 4.14-12.)

Construction

During construction, portable fire extinguishers would be placed throughout the site at appropriate intervals and periodically maintained, and safety procedures and training would be implemented according to the guidelines of the Construction Fire Protection and Prevention Program. In addition, the HBEP is within the area of the existing HBGS hydrant system that could provide extra protection during construction. (Ex. 2000, p. 4.14-11.)

Operation

During operation, the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable recommended National Fire Protection Association (NFPA) standards (including Standard 850 addressing fire protection at electric generating plants), and all Cal/OSHA requirements. Fire suppression elements will include both fixed and portable fire extinguishing systems. The fire protection system would be comprised of the existing hydrant system and any needed extensions for new HBEP structures. The fire water would be potable city water supplied by the fire protection tank with water pressure maintained by a jockey pump, an electric pump, and a diesel-driven pump. (Ex. 2000, p. 4.14-12.)

The fire protection system would have fire detection sensors and monitoring equipment that would trigger alarms and automatically actuate the suppression systems. In addition to the fixed fire protection system, appropriate class of service portable extinguishers and fire hydrants/hose stations would be located throughout the facility at code-approved intervals. These systems are standard requirements by the NFPA and the Uniform Fire Code, and Staff testified that they will ensure adequate fire protection. (Ex. 2000, p. 4.14-12.)

Access Points

All power plants licensed by the Energy Commission are required to have more than one access point to the power plant site. This is sound fire safety procedure and allows for fire department vehicles and personnel to access the site should the main gate be blocked for any reason. However, the evidence does not clearly establish the existence of two such points of access to HBEP. We therefore impose Condition of Certification **WORKER SAFETY-6** that would require the project owner to identify and provide a second access point to the site for emergency vehicles; this second point of access must meet the requirements of the Huntington Beach Municipal Code. (Ex. 2000, p. 4.14-12.)

The applicant would be required by Conditions of Certification **WORKER SAFETY-1 and-2** to provide the final Fire Protection and Prevention Program to the Compliance

Project Manager and to the HBFD prior to construction and operation of the project to receive approval and comment, respectively, on the adequacy of the proposed fire protection measures. (Ex. 2000, p. 4.14-12.)

Emergency Medical Services Response

Staff conducted a statewide survey to determine the frequency of Emergency Medical Services (EMS) response and off-site fire-fighter response for natural gas-fired power plants in California. The evidence shows that incidents at power plants that require fire or EMS response are infrequent and represent an insignificant impact on local, urban fire departments. Most EMS calls to gas-fired power plants are for cardiac emergencies that are non-work-related incidents, including those involving visitors. The need for prompt response within a few minutes is well documented in the medical literature. We find that the quickest medical intervention can only be achieved with the use of an on-site automatic external defibrillator (AED); the response from an off-site provider would take longer regardless of the provider location. Many private and public locations (e.g., airports, factories, government buildings) maintain on-site cardiac defibrillation devices. (Ex. 2000, p. 4.14-13.)

We impose Condition of Certification **WORKER SAFETY-5**, requiring the project owner to maintain a portable AED at HBEP and to train all operational power plant employees on its use, and to train a representative number of workers on site during construction and commissioning.

CUMULATIVE IMPACTS AND MITIGATION

Cumulative impacts analysis addresses whether a project may have impacts that could combine with the existing demand and expected future demands to create significant potential cumulative effects.

The Huntington Beach Fire Department has stated that its ability to respond to emergency calls will not be affected by the construction and operation of the HBEP. Therefore, staff agrees with the applicant that mitigation is not required. (Ex. 2000, p. 4.14-13.)

PUBLIC COMMENTS

The city of Huntington Beach submitted public comments on the topic of fire safety regarding the fire access road. (TN 202913) With the imposition and implementation of Condition of Certification **WORKER SAFETY-6**, the project owner is required to provide the two points of access requested by the city of Huntington Beach.

FINDINGS OF FACT

Based on the evidence, and assuming implementation of the Conditions of Certification below, the Commission makes the following findings:

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.
2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.
3. The project will employ an on-site professional Safety Monitor during construction and operation.
4. The HBEP will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.
5. The Huntington Beach Fire Department will provide fire protection and emergency response services to the project and will be able to respond to the site within an acceptable time.
6. The project will not have a significant direct, indirect, or cumulative impacts on worker safety, fire protection and emergency services
7. The project will meet or exceed the requirements of the most recently adopted edition of the California Fire Code and applicable NFPA standards.
8. With implementation of the Conditions of Certification, below, the HBEP will comply with all applicable LORS.

CONCLUSIONS OF LAW

We therefore conclude that the HBEP will not create significant health and safety impacts to workers, and will comply with all applicable laws, ordinances, regulations, and standards.

E. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the Huntington Beach Energy Project (HBEP) will create significant impacts to public health and safety resulting from the use, handling, storage, or transport of hazardous materials. Several factors affect the potential for project-related hazardous materials to cause adverse impacts. These include local meteorological conditions, terrain characteristics, and the proximity of population centers and sensitive receptors. Power plant facilities are also subject to a number of laws, ordinances, regulations, and standards (LORS) related to hazardous materials.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Laws, Ordinances, Regulations, and Standards

The following federal, state, and local laws and policies apply to the protection of public health and hazardous materials management. Staff's analysis examines the project's compliance with these requirements.

**Hazardous Materials Management Table 1
Laws, Ordinances, Regulations, and Standards**

Applicable LORS	Description
Federal	
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 that store, handle, or produce significant quantities of extremely hazardous materials.
The CAA section on risk management plans (42 USC §112(r))	Requires states to implement a comprehensive system informing 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	The 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 could leak into navigable waters.
Title 49, Code of Federal Regulations, Part 190	Outlines gas pipeline safety program procedures.

Applicable LORS	Description
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 DOT 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 and minimum federal safety standards, specifies minimum safety requirements for pipelines including material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use that characterize the surrounding land. This part also contains regulations governing pipeline construction (which must be followed for Class 2 and Class 3 pipelines) and the requirements for preparing a pipeline integrity management program.
Federal Register (6 CFR Part 27) interim final rule	A regulation of the U.S. Department of Homeland Security that requires facilities that use or store certain hazardous materials to submit information to the department so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.
State	
Title 8, California Code of Regulations, section 5189	Requires facility owners to develop and implement effective safety management plans that ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the Risk Management Plan (RMP) process.
Title 8, California Code of Regulations, section 458 and sections 500 to 515	Sets forth requirements for the design, construction, and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.
California Health and Safety Code, section 25531 to 25543.4	The California Accidental Release Program (CalARP) requires the preparation of a Risk Management Plan (RMP) and off-site consequence analysis (OCA) and submittal to the local Certified Unified Program Agency for approval.
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 from being discharged into sources of drinking water.
California Public Utilities Commission General Order 112-E and 58-A	Contains standards for gas piping construction and service.

Applicable LORS	Description
Local (or locally enforced)	
City of Huntington Beach Municipal Code Section 17.58	Develop and implement safety management plans as required by CA H&SC Sections 25500-25520. Administered by the Huntington Beach Fire Department
Huntington Beach Fire Department City Specifications	Various Huntington Beach Fire Department City Specifications (numbered 401 through 434) may be found at: http://www.huntingtonbeachca.gov/government/departments/Fire/fire_prevention_code_enforcement/fire_dept_city_specifications.cfm
City of Huntington Beach Municipal Code, Chapter 17.56	City of Huntington Beach Fire Code: The City of Huntington Beach has adopted the California Fire Code and has adopted several ordinances which amend it. I
NFPA 56 (adopted 2012)	NFPA 56 is the Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems.

(Ex. 2000, PP. 4.4-2 – 4.4-3.)

Project Setting

Several factors associated with the area in which a project is to be located affect the potential for an accidental release of a hazardous material that could cause public health impacts. These include meteorological conditions, terrain characteristics, and location of population centers and sensitive receptors.

Meteorological Conditions

Meteorological conditions, including wind speed, wind direction, and air temperature, affect both the extent to which accidentally released hazardous materials would be dispersed into the air and the direction in which they would be transported. This affects the potential magnitude and extent of public exposure to such materials, as well as their associated health risks. When wind speeds are low and the atmosphere stable, dispersion is severely reduced but can lead to increased localized public exposure.

Applicant provided meteorological input assumptions for modeling of potential accidental hazardous material releases that would use the U.S. Environmental Protection Agency's *RMP Offsite Consequence Analysis Guidance* document for conducting the off-site consequence analysis. (Ex. 1001, Appendix 5.5A.)

Terrain Characteristics

The location of elevated terrain is often an important factor in assessing potential exposure. An emission plume resulting from an accidental release may impact high elevations before impacting lower elevations. The topography of the site is essentially flat (about 15 feet above sea level) with the Pacific Ocean lying to the south and west and lowlands to the north and east of the project site. (Ex. 2000, p. 4.4-5.)

Location of Exposed Populations and Sensitive Receptors

The general population includes many sensitive subgroups that may be at greater risk from exposure to emitted pollutants. These sensitive subgroups include the very young, the elderly, and those with existing illnesses. In addition, the location of the population in the area surrounding a project site may have a major bearing on health risk. The nearest sensitive receptor is a daycare facility located 0.3 mile east of the project site. The nearest school is Edison High School, located approximately 0.5 mile to the northeast of the project site. The nearest resident is approximately 250 feet west-northwest of the facility along Newland Street, and additional residences are located about 1200 feet from the site to the northwest and about 2600 feet from the site to the east. (Ex. 2000, p. 4.4-5.)

Direct/Indirect Impacts and Mitigation

Small Quantity Hazardous Materials

The evidence shows that some hazardous materials, although present at the proposed facility, pose a minimal potential for off-site impacts since they will be stored in a solid form or in smaller quantities, have low mobility, or have low levels of toxicity.

During the construction phase of the project, the only hazardous materials proposed for use are paint, paint thinner, cleaners, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, lubricants, and welding flux. Any impact of spills or other releases of these materials will be limited to the site because of the small quantities involved, their infrequent use (and therefore reduced chances of release), and/or the temporary containment berms used by contractors. Petroleum hydrocarbon-based motor fuels, mineral oil, lube oil, and diesel fuel are all very low volatility and represent limited off-site hazards even in larger quantities. (Ex. 2000, p. 4.4-6.)

During operations, hazardous chemicals such as cleaning agents, lube oil, mineral insulating oil, and other materials (see **HAZARDOUS MATERIALS APPENDIX B** for a list of all chemicals proposed to be used and stored at HBEP) would be used and stored in relatively small amounts and represent limited off-site hazards because of their small quantities, low volatility, and/or low toxicity.

Large Quantity Hazardous Materials

Natural Gas

Natural gas poses a fire and/or possible explosion risk because of its flammability. However, it should be noted that, due to its tendency to disperse rapidly, natural gas is less likely to cause explosions than many other fuel gases such as propane or liquefied petroleum gas.

While natural gas will be used in significant quantities, it will not be stored on site. It will be delivered by SoCalGas via the existing onsite gas pipeline that serves the currently

operating Huntington Beach Generating Station. The pipeline and onsite metering station are, and would continue to be, owned and operated by SoCalGas. (Ex. 2000, p. 4.4-7.)

The risk of a fire and/or explosion on site can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. The National Fire Protection Association (NFPA) code 85A requires both the use of double-block and bleed valves for gas shut off and automated combustion controls. These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, start-up procedures would require air purging of the gas turbines prior to start up, thereby precluding the presence of an explosive mixture. The safety management plan proposed by the applicant would address the handling and use of natural gas, and would significantly reduce the potential for equipment failure because of either improper maintenance or human error. (Ex. 2000, p. 4.4-8.)

We adopt Condition of Certification **HAZ-9**¹ which prohibits the use of flammable gas blows for pipe cleaning at the facility either during construction or after the start of operations. All fuel gas pipe purging activities shall vent any gases to a safe location outdoors, away from workers and sources of ignition. Fuel gas pipe cleaning and purging shall adhere to the provisions of NFPA 56, the Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems, with special emphasis on sections 4.3.1 (written procedures for pipe cleaning and purging) and 6.111 (prohibition on the use of flammable gas for cleaning or purging at any time).

Aqueous Ammonia

Aqueous ammonia will be used to control the emission of oxides of nitrogen (NO_x) from the combustion of natural gas at the HBEP. The accidental release of aqueous ammonia without proper mitigation can result in significant down-wind concentrations of ammonia gas. HBEP would have 19 percent aqueous ammonia solution in a 24,000-gallon horizontal above ground storage tank. Actual storage contents would be limited to 20,400 gallons or 85 percent of tank capacity.

The use of aqueous ammonia can result in the formation and release of toxic gases in the event of a spill even without interaction with other chemicals. This is a result of its moderate vapor pressure and the large amounts of aqueous ammonia that will be used and stored on site. However, the use of aqueous ammonia poses far less risk than the use of the far more hazardous anhydrous ammonia (ammonia that is not diluted with water).

¹ The Conditions of Certification for Hazardous Materials, along with all other Conditions of Certification for the HBEP, are found in Appendix "A" to this Decision.

The evidence shows that aqueous ammonia is the only hazardous material that may pose the risk of off-site impact. To assess the potential impacts associated with an accidental release of aqueous ammonia, staff used four bench mark exposure levels of ammonia gas occurring offsite. These include:

- the lowest concentration posing a risk of lethality, 2,000 parts per million (ppm); and
- the immediately dangerous to life and health level of 300 ppm; and
- the emergency response planning guideline level 2 of 150 ppm, which is also the RMP level 1 criterion used by US EPA and the state of California; and
- the level considered by Energy Commission staff to be without serious adverse effects on the public for a one-time exposure of 75 ppm (considered by staff to be a level of significance).

If the potential exposure associated with a potential release exceeds 75 ppm at any public receptor, staff assumed that the potential release poses a risk of significant impact. Staff also assessed the probability of occurrence of the release and the nature of the potentially exposed population in determining whether the likelihood and extent of potential exposure are sufficient to support a finding of potentially significant impact. A detailed discussion of the exposure criteria considered by staff, as well as their applicability to different populations and exposure-specific conditions, is provided in **HAZARDOUS MATERIALS APPENDIX A.**

Section 5.5.4.3 and APPENDIX 5.5A of the AFC (Ex. 1001) describe¹ the modeling parameters that would be used for the worst-case accidental releases of aqueous ammonia in the applicant's off-site consequence analysis (OCA). Pursuant to the California Accidental Release Program (CalARP) regulations, the OCA would be performed for the worst-case release scenario, which would involve the failure and complete discharge of the storage tank. Potential off-site ammonia concentrations would be estimated indicating the distance from the source release point to the benchmarks of ammonia concentration. (Ex. 2000, p. 4.4-9.)

Applicant's offsite consequence analysis shows that potential worst-case plume concentrations of more than 75 ppm would not move beyond the site boundaries. Applicant's modeling was performed with the commonly-used SLAB plume modeling program. (Ex. 2000, p. 4.4-10.)

Staff verified applicant's results using a different and more conservative EPA-approved plume modeling program, ALOHA. Staff obtained similar results indicating that given an adequately designed secondary containment structure which limits the exposed surface area of the captured release pool, plume concentrations of more than 75 ppm would not occur off-site, even for the extremely unlikely worst-case scenario. (Ex. 2000, p. 4.4-10.)

Implementation of Condition of Certification **HAZ-4** will ensure that the aqueous ammonia secondary containment structure includes essential design elements to prevent a worst-case spill from producing significant off-site impacts.

Furthermore, the potential for accidents resulting in the release of hazardous materials is greatly reduced through implementation of a safety management program that would include the use of both engineering and administrative controls. Elements of both facility controls and the safety management plan are summarized below.

Engineering Controls

Engineering controls help to prevent accidents and releases (spills) from moving off site and affecting communities by incorporating engineering safety design criteria in the design of the project. The engineered safety features proposed by the applicant for use at the HBEP project include:

- construction of secondary containment areas surrounding each of the hazardous materials storage areas designed to contain accidental releases that might happen during storage or delivery; and
- physical separation of stored chemicals in isolated containment areas with a non-combustible partition in order to prevent accidental mixing of incompatible materials, which could result in the evolution and release of toxic gases or fumes; and
- installation of a fire protection system for hazardous materials storage areas; and
- construction of bermed containment areas surrounding the aqueous ammonia storage tank capable of holding the entire tank volume plus the water associated with a 24-hour period of a 25-year storm; and
- construction of a sloped ammonia unloading pad that drains into the storage tank's secondary containment structure; and,
- process protective systems including continuous tank level monitors, automated leak detectors, temperature and pressure monitors, alarms, and emergency block valves.

Administrative Controls

Administrative controls also help prevent accidents and releases from moving off site and affecting neighboring communities by establishing worker training programs, process safety management programs, and ensuring compliance with all applicable health and safety LORS.

A worker health and safety program will be prepared by the applicant and include (but not be limited to) the following elements:

- worker training regarding chemical hazards, health and safety issues, and hazard communication;
- procedures to ensure the proper use of personal protective equipment;
- safety operating procedures for the operation and maintenance of systems utilizing hazardous materials;
- fire safety and prevention; and,
- emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention.

At the facility, the project owner will be required to designate an individual with the responsibility and authority to ensure a safe and healthful work place. The project health and safety official will oversee the health and safety program and have the authority to halt any action or modify any work practice to protect the workers, facility, and the surrounding community in the event of a violation of the health and safety program.

The applicant will also prepare a risk management plan for aqueous ammonia, as required by both CalARP regulations and Condition of Certification **HAZ-2**. **HAZ-2** also calls for a program for the prevention of accidental releases and responses to an accidental release of aqueous ammonia. A hazardous materials business plan will also be prepared by the applicant that would incorporate state requirements for the handling of hazardous materials. (Ex. 1001, § 5.5.3.2.2.) Other administrative controls are included in Conditions of Certification **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume) and **HAZ-3** (development of a safety management plan). Condition of Certification **HAZ-4** requires that the final design drawings for the aqueous ammonia storage (and secondary containment) facility be submitted to the CPM for review and approval.

On-Site Spill Response

In order to address the issue of spill response, the facility will prepare and implement an emergency response plan that includes information on hazardous materials contingency and emergency response procedures, spill containment and prevention systems, personnel training, spill notification, on-site spill containment, and prevention equipment and capabilities, as well as other elements. Emergency procedures will be established which include evacuation, spill cleanup, hazard prevention, and emergency response.

The first responders to a hazardous materials incident at HBEP would be from Station #4 of the Huntington Beach Fire Department (HBFD). If needed, a full hazardous materials response would be provided by the HBFD Hazardous Materials Response Team (HBFD-HMRT) located at HBFD Station #6, 18591 Edwards Street, Huntington

Beach, CA, approximately 4 miles away. The HBFD-HMRT is capable of handling any hazardous materials-related incident at the proposed facility and would have a response time of 15-to-20 minutes. (Ex 1001, §5.5.5.2.1.)

Transportation of Hazardous Materials

Hazardous materials including aqueous ammonia will be transported to the facility by tanker truck. The applicant's proposed transportation route for hazardous materials delivery calls for trucks to travel on I-405 to Beach Boulevard (State Highway 39), south onto Pacific Coast Highway (State Highway 1) and left onto Newland Street, then right into the HBEP site. (Ex. 1001, §5.5.3.3.)

Ammonia can be released during a transportation accident and the extent of impact in the event of such a release would depend upon the location of the accident and the rate of dispersion of ammonia vapor from the surface of the aqueous ammonia pool. The likelihood of an accidental release during transport is dependent upon three factors:

- the skill of the tanker truck driver; and
- the type of vehicle used for transport; and,
- accident rates.

There is an extensive regulatory program that applies to the shipment of hazardous materials on California highways to ensure safe handling in general transportation (see Federal Hazardous Materials Transportation Law 49 USC §5101 et seq, DOT regulations 49 CFR subpart H, §172–700, and California Department of Motor Vehicles (DMV) regulations on hazardous cargo). These regulations also address the issue of driver competence. (Ex. 2000, p. 4.4-12.)

To address the issue of tanker truck safety, aqueous ammonia will be delivered to the proposed facility in vehicles designed to DOT Code MC-307 with capacities of 6,500 gallons. These are high-integrity vehicles designed to haul caustic materials such as ammonia. Implementation of Condition of Certification **HAZ-5** will ensure that delivery will be made in a tanker that meets or exceeds the specifications prescribed by the applicable regulations.

According to the evidence, the frequency of release for the transportation of hazardous materials in the U.S. is between 0.06 and 0.19 releases per 1,000,000 miles traveled on well-designed roads and highways. The applicant estimated that routine operation of the proposed HBEP would require 10 to 12 ammonia deliveries per month, each delivering about 6,500 gallons (Ex. 1001, § 5.5.3.2.2). Each delivery will travel approximately 6.5 miles from I-405 along Beach Boulevard and about 0.5 miles along the Pacific Coast Highway to the facility.

This would result in a maximum of 78 miles of delivery tanker truck travel in the project area per month during peak operation (with a full load) and an average of approximately

860 miles of delivery tanker truck travel per year (assuming eleven deliveries per month). We find that the risk over this distance is insignificant.

Nonetheless, in order to further ensure that the risk of an accident involving the transport of aqueous ammonia to the power plant is insignificant, we adopt Condition of Certification **HAZ-6**, requiring the use of only the specified and California Highway Patrol-approved route to the site.

Seismic Issues

It is possible that an earthquake could cause the failure of a hazardous materials storage tank. An earthquake could also cause failure of the secondary containment system (berms and dikes), as well as the failure of electrically controlled valves and pumps. The failure of all of these preventive control measures might then result in a vapor cloud of hazardous materials that could move off site and affect residents and workers in the surrounding community.

The proposed facility will be designed and constructed to the standards (including seismic) of the 2010 California Building Code. The evidence shows that facilities designed to recent building codes have survived earthquakes with no safety-related failures. We therefore conclude that seismically-induced failures are unlikely to occur and do not represent a significant risk to public health or safety.

Site Security

The energy generation sector is one of 14 areas of critical infrastructure listed by the U.S. Department of Homeland Security. The applicant proposes to use hazardous materials identified by the U.S. EPA as requiring the development and implementation of special site security measures to prevent unauthorized access.

The applicant has stated that a security plan will be prepared for the proposed facility and will include a description of perimeter security measures and procedures for evacuating, notifying authorities of a security breach, monitoring fire alarms, conducting site personnel background checks, site access, and a security plan and background checks for hazardous materials drivers. Perimeter security measures utilized for this facility may include security guards, security alarms, breach detectors, motion detectors, and video or camera systems. (Ex. 1001, § 5.5.5.2.5.)

In order to ensure that neither this project nor a shipment of hazardous material is the target of unauthorized access, we adopt Conditions of Certification **HAZ-7** and **HAZ-8** which require both construction security and operation security plans.

The goal of these conditions of certification is to provide for the minimum level of security for power plants necessary for the protection of California's electrical infrastructure from malicious mischief, vandalism, or domestic/foreign terrorist attacks.

In order to determine the level of security, the Energy Commission staff used an internal vulnerability assessment decision matrix modeled after the U.S. Department of Justice Chemical Vulnerability Assessment Methodology (July 2002), the North American Electric Reliability Council's (NERC) 2002 guidelines, the U.S. DOE VAM-CF model, and the U.S. Department of Homeland Security regulations published in the Federal Register (Interim Final Rule 6 CFR Part 27). Staff determined that this project would fall into the category of medium vulnerability due to the urban setting and close proximity to sensitive receptors, and recommended implementation of appropriate security measures. (Ex. 2000, p. 4.4-15.)

The recommended security measures include perimeter fencing and breach detectors, alarms, site access procedures for employees and vendors, site personnel background checks, and law enforcement contacts in the event of a security breach. The perimeter fencing should include slats or other methods to reduce and restrict the visibility of the site from off-site locations. Site access for vendors shall be strictly controlled. Consistent with current state and federal regulations governing the transport of hazardous materials, hazardous materials vendors will have to maintain their transport vehicle fleet and employ only properly licensed and trained drivers. The project owner will be required, through the use of contractual language with vendors, to ensure that vendors supplying hazardous materials strictly adhere to the U.S. DOT 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 through personnel background security checks (as per 49 CFR Part 1572, Subparts A and B). The compliance project manager (CPM) may authorize modifications to these measures or may require additional measures in response to additional guidance provided by the U.S. Department of Homeland Security, the U.S. DOE, or the NERC, after consultation with both appropriate law enforcement agencies and the applicant. (Ex. 2000, pp. 4.4-15 - 4.4-16.)

Cumulative impacts and Mitigation

A significant cumulative hazardous materials impact is defined as the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact where the release of one hazardous material alone would not cause a significant impact. The evidence shows that while cumulative impacts related to hazardous material management at applicable existing and foreseeable facilities (including the HBEP) are possible, the probability of cumulative impacts is low due to the numerous safeguards required to both prevent and control the release of hazardous materials at such facilities. (Ex. 2000, p. 4.4-16.)

We therefore conclude that the facility would not contribute to a significant hazardous materials-related cumulative impact.

Response to Agency and Public Comments

The city of Huntington Beach provided comments from the Huntington Beach Fire Department in the form of a Code Requirements letter regarding standard codes on fire safety and hazardous materials management, which identified specific City of Huntington Beach Municipal and Fire codes and specifications which would apply to the proposed project. We note that the project would be built to comply with all local laws, ordinances, regulations, and standards (LORS).

Conclusion

With implementation of the conditions of certification set forth herein, we find that the HBEP would not pose a significant risk of impacts related to the use or transport of hazardous materials.

Condition of Certification **HAZ-1** ensures that no hazardous material would be used at the facility except as listed in **APPENDIX B**, unless there is prior approval by the Energy Commission compliance project manager. Condition of Certification **HAZ-2** requires that an RMP be prepared and submitted prior to the delivery of aqueous ammonia. Condition of Certification **HAZ-3** requires the development of a safety management plan for the delivery of all liquid hazardous materials, including aqueous ammonia. This will further reduce the risk of any accidental release not addressed by the proposed spill-prevention mitigation measures and the required RMP. This plan would additionally prevent the mixing of incompatible materials that could result in toxic vapors. Condition of Certification **HAZ-4** requires that the aqueous ammonia storage tank be designed to applicable specifications. The transportation of hazardous materials is addressed in Conditions of Certification **HAZ-5** and **HAZ-6**. Site security during both the construction and operations phases is addressed in Conditions of Certification **HAZ-7** and **HAZ-8**. Condition of Certification **HAZ-9** addresses the use of natural gas and prohibits its use to clear pipes.

FINDINGS OF FACT

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

1. The HBEP will use hazardous materials during construction and operation, including natural gas and aqueous ammonia.
2. The major public health and safety hazards are associated with the risk of fire or explosion related to natural gas and the release of aqueous ammonia.
3. The risk of fire or explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices. Specifically, this will include 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.

4. The risk of off-site aqueous ammonia migration is minimal, and the risk of on-site leaks will be reduced to insignificant levels with the projects' compliance with applicable regulatory requirements and conditions of certification below.
5. Potential leak and fire risks associated with project facilities will be reduced to insignificant levels with the project's compliance with applicable regulatory requirements.
6. Aqueous ammonia poses the predominant risk associated with hazardous materials transport. The risk of an accidental release during transport in the project area will be reduced to insignificant levels by conformance with applicable regulatory requirements, including standards for vehicle safety and driver qualifications/competence.
7. While the HBEP site could potentially be subject to earthquakes that result in the failure of hazardous material storage facilities, such occurrences are not probable and do not represent a significant risk to the public.
8. The HBEP will involve on-site hazardous material use/storage in sufficient quantities to merit the development of special site security measures to prevent unauthorized access. These measures would ensure that potential security risks related to construction and operation of the HBEP facility would be less than significant.
9. Hazardous materials proposed for use in the construction and operation of the HBEP, when considered in conjunction with those used at other existing and potential future facilities in the project vicinity will not cumulatively result in a significant risk to the public.
10. Implementation of the mitigation measures contained in the following conditions of certification will ensure that the HBEP will not cause significant impacts to public health and safety as the result of the use, handling, storage, or transport of hazardous materials.
11. With implementation of the conditions of certification listed below, the HBEP will comply with all applicable LORS related to hazardous materials management.

CONCLUSION OF LAW

1. We therefore conclude that the use of hazardous materials in association with the HBEP as mitigated by the conditions of certification will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

BASIS FOR STAFF'S USE OF 75 PARTS PER MILLION AMMONIA EXPOSURE CRITERIA

Staff uses a health-based airborne concentration of 75 parts per million (PPM) to evaluate the significance of impacts associated with potential accidental releases of ammonia. While this level is not consistent with the 200-ppm level used by the U.S. Environmental Protection Agency and the California Environmental Protection Agency in evaluating such releases pursuant to the Federal Risk Management Program and State Accidental Release Program, it is appropriate for use in staff's analysis of the proposed project. The Federal Risk Management Program and the State Accidental Release Program are administrative programs designed to address emergency planning and ensure that appropriate safety management practices and actions are implemented in response to accidental releases. However, the regulations implementing these programs do not provide clear authority to require design changes or other major changes to a proposed facility. The preface to the Emergency Response Planning Guidelines states that "these values have been derived as planning and emergency response guidelines, **not** exposure guidelines, they do not contain the safety factors normally incorporated into exposure guidelines. Instead they are estimates, by the committee, of the thresholds above which there would be an unacceptable likelihood of observing the defined effects." It is staff's contention that these values apply to healthy adult individuals and are levels that should not be used to evaluate the acceptability of avoidable exposures for the entire population. While these guidelines are useful in decision making in the event that a release has already occurred (for example, prioritizing evacuations), they are not appropriate for and are not binding on discretionary decisions involving proposed facilities where many options for mitigation are feasible. California Environmental Quality Act requires permitting agencies making discretionary decisions to identify and mitigate potentially significant impacts through feasible changes or alternatives to the proposed project.

Staff has chosen to use the National Research Council's 30-minute Short Term Public Emergency Limit (STPEL) for ammonia to determine the potential for significant impact. This limit is designed to apply to accidental unanticipated releases and subsequent public exposure. Exposure at this level should not result in serious effects but would result in "strong odor, lacrimation, and irritation of the upper respiratory tract (nose and throat), but no incapacitation or prevention of self-rescue." It is staff's opinion that exposures to concentrations above these levels pose significant risk of adverse health impacts on sensitive members of the general public. It is also staff's position that these exposure limits are the best available criteria to use in gauging the significance of public exposures associated with potential accidental releases. It is, further, staff's opinion that these limits constitute an appropriate balance between public protection and mitigation of unlikely events and are useful in focusing mitigation efforts on those release

scenarios that pose real potential for serious impacts on the public. Table 1 provides a comparison of the intended use and limitations associated with each of the various criteria that staff considered in arriving at the decision to use the 75-ppm STPEL.

**Hazardous Materials Appendix A Table-1
Acute Ammonia Exposure Guidelines**

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
IDLH ²	NIOSH	Workplace standard used to identify appropriate respiratory protection.	300 ppm	30 minutes	Exposure above this level requires the use of “highly reliable” respiratory protection and poses the risk of death, serious irreversible injury, or impairment of the ability to escape.
IDLH/101	EPA, NIOSH	Work place standard adjusted for general population factor of 10 for variation in sensitivity	30 ppm	30 minutes	Protects nearly all segments of general population from irreversible effects.
STEL2	NIOSH	Adult healthy male workers	35 ppm	15 minutes, 4 times per 8-hour day	No toxicity, including avoidance of irritation.
EEGL3	NRC	Adult healthy workers, military personnel	100 ppm	Generally less than 60 minutes	Significant irritation, but no impact on personnel in performance of emergency work; no irreversible health effects in healthy adults. Emergency conditions one-time exposure.
STPEL4	NRC	Most members of general population	50 ppm 75 ppm 100 ppm	60 minutes 30 minutes 10 minutes	Significant irritation, but protects nearly all segments of general population from irreversible acute or late effects. One-time accidental exposure.
TWA2	NIOSH	Adult healthy male workers	25 ppm	8 hours	No toxicity or irritation on continuous exposure for repeated 8-hour work shifts.
ERPG-25	AIHA	Applicable only to emergency response planning for the general population (evacuation) (not intended as exposure criteria) (see preface attached)	200 ppm	60 minutes	Exposures above this level entail** unacceptable risk of irreversible effects in healthy adult members of the general population (no safety margin).

(Ex. 2000, p. 4.4-32.)

1) (EPA 1987) 2) (NIOSH 1994) 3) (NRC 1985) 4) (NRC 1972) 5) (AIHA 1989)

* The (NRC 1979), (WHO 1986), and (Henderson and Haggard 1943) all conclude that available data confirm the direct relationship to increases in effect with both increased exposure and increased exposure duration.

** The (NRC 1979) describes a study involving young animals, which suggests greater sensitivity to acute exposure in young animals. The WHO (1986) warned that the young, elderly, asthmatics, those with bronchitis, and those that exercise should also be considered at increased risk based on their demonstrated greater susceptibility to other non-specific irritants.

ABBREVIATIONS - HAZARDOUS MATERIALS APPENDIX A, TABLE 1

ACGIH	American Conference of Governmental and Industrial Hygienists
AIHA	American Industrial Hygienists Association
EEGL	Emergency Exposure Guidance Level
EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guidelines
IDLH	Immediately Dangerous to Life and Health Level
NIOSH	National Institute of Occupational Safety and Health
NRC	National Research Council
STEL	Short Term Exposure Limit
STPEL	Short Term Public Emergency Limit
TLV	Threshold Limit Value
WHO	World Health Organization

HAZARDOUS MATERIALS APPENDIX B

Hazardous Materials Proposed for Use at the HBEP

TABLE 5.5-2 from AFC Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities								
Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQa	RQ of Material as Used Onsite	EHS TPQc	Regulated Substance TQd	Prop 65
Aqueous ammonia (19% NH3 by weight)	Aqueous ammonia	7664-41-7	24,000 gallonsg	100 pounds	526 pounds	500 pounds	500 pounds	No
Aqueous ammonia (19-29.4% NH3 by weight)	Aqueous ammonia	7664-41-7	400 gallons	100 pounds	357 pounds	500 pounds	500 pounds	No
Anti-scalant	Anti-scalant	Various	400 gallons	e	e	e	e	No
Battery Electrolyte	Sulfuric Acid	7664-93-9	1,200 gallons	1,000 pounds	1,075 pounds	1,000 pounds	1,000 pounds	Yes
Citric acid	Citric Acid	77-92-9	625 pounds	e	e	e	e	No
Cleaning chemicals/detergents	Various	None	100 gallons	e	e	e	e	No
Cleaning chemicals/detergents for membrane-based water treatment systems (e.g., NALCO PermaClean PC-77, NALCO PermaClean PC-40, NALCO PermaClean PC-98)	Various	None	25 gallons	e e	e e	e e	e e	No No
Sanitizing chemicals for membrane-based (MF/RO/EDI) water treatment systems (e.g., NALCO PermaClean PC-11)	Dibromoacetonitrile 2,2-Dibromo-3-nitrilopropionamide Polyethylene Glycol	3252-43-5 10222-01-2 25322-68-3	400 gallons	e	e	e	e	No No No
Diesel No. 2	Diesel No. 2	68476-34-6	400 gallons	e	e	e	e	No

Hydraulic oil	Phosphate ester	None	300 gallons	42 gallonsf	42 gallonsf	e	e	No
Laboratory reagents	Various	Various	10 gallons	e	e	e	e	No
Lubrication oil	Oil	None	20,000 gallons	42 gallonsf	42 gallonsf			No
Mineral insulating oil	Oil	8012-95-1	82,000 gallons	42 gallonsf	42 gallonsf			No
Mineral insulating oil	Oil	8012-95-1	82,000 gallons	42 gallonsf	42 gallonsf			No
Amine solution	Amine	2008-39-1	400 gallons	e	e	e	e	No
Sodium bisulfite (NaHSO ₃)	Sodium bisulfite	7631-90-5	500 gallons	5,000 pounds	5,000 pounds	e	e	No
Sulfuric acid (93%)	Sulfuric acid	7664-93-9	600 gallons	1,000 pounds	1,075 pounds	1,000 pounds	1,000 pounds	Yes
Sodium hydroxide (NaOH) (20% to 50%)	Sodium hydroxide	1310-73-2	400 gallons	1,000 pounds	800 pounds	e	e	No
Sodium hypochlorite (12.5%)	Sodium hypochlorite	7681-52-9	600 gallons	100 pounds	800 pounds	e	e	No
Hydrochloric acid	Hydrochloric acid	7647-01-0	25 gallons	5,000 pounds	5,000 pounds	e	15,000 pounds	No
Sodium nitrite	Sodium nitrite	7632-00-0	500 pounds	100 pounds	100 pounds	e	e	No
Proprietary corrosion/scale inhibitor (e.g., NALCO TRAC107)	Inorganic Salt Sodium Hydroxide	Proprietary 1310-73-2	25 gallons	e e	e e	e e	e e	No No
Proprietary non-oxidizing biocide (e.g., NALCO 7330)	5-Chloro-2-Methyl-4-Isothiazolin-3-one (1.1%) 2-Methyl-4-Isothiazolin-3-one (0.3%)	26172-55-4 2682-20-4	400 gallons	e	e	e	e	No No
Propylene Glycol	Propylene Glycol	57-55-6	3000 gallons	e	e	e	e	Yes

HAZARDOUS MATERIALS

Trisodium phosphate (Na ₃ PO ₄) or phosphate/sodium hydroxide blend (e.g., NALCO BT-3400 or NALCO BT-4000)	Trisodium phosphate	7601-54-9	400 gallons	e	e	e	e	No
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	200 pounds	e	e	e	e	No
Acetylene	Acetylene	47-86-2	540 cubic feet	e	e	e	e	No
Oxygen	Oxygen	7782-44-7	540 cubic feet	e	e	e	e	No
Propane	Propane	74-98-6	200 cubic feet	e	e	e	e	No
EPA Protocol gases	Various	Various	2,500 cubic feet	e	e	e	e	No
Cleaning chemicals	Various	Various	Varies (less than 25 gallons of liquids or 100 pounds of solids for each chemical)	e	e	e	e	No
Paint	Various	Various	Varies (less than 25 gallons of liquids or 100 pounds of solids for each type)	e	e	e	e	No
<p>a RQ for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Superfund Amendments and Reauthorization Act (SARA) (Ref. 40 CFR 302, Table 302.4). Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported. b RQ for materials as used onsite. Since some of the hazardous materials are mixtures that contain only a percentage of an RQ, the RQ of the mixture can be different than for a pure chemical. For example, if a material only contains 10 percent of a reportable chemical and the RQ is 100 lb., the RQ for that material would be (100 lb)/(10%) = 1,000 lb. c Extremely Hazardous Substance (EHS) TPQ (Ref. 40 CFR Part 355, Appendix A). If quantities of extremely hazardous materials equal to or greater than the TPQ are handled or stored, they must be registered with the local Administering Agency. d TQ is from 19 California Code of Regulations (CCR) 2770.5 (state) or 40 CFR 68.130 (federal) e No reporting requirement. Chemical has no listed threshold under this requirement. f State RQ for oil spills that will reach California state waters [Ref. CA Water Code Section 13272(f)] g The ammonia tank capacity is 24,000 gallons; however, the tank is only filled to 85 percent of its capacity, or 20,400 gallons.</p>								

(Ex. 2000, p. 4.4-38.)

F. WASTE MANAGEMENT

INTRODUCTION

The Huntington Beach Energy Project (HBEP) will generate non-hazardous and hazardous wastes during construction and operation. This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related non-hazardous and hazardous wastes. It further examines whether project wastes can be managed in compliance with all applicable laws, ordinances, regulations and standards. Finally, we consider whether the disposal or diversion of project wastes would result in significant adverse impacts to existing waste disposal or diversion facilities.

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC). State law requires hazardous waste generators to obtain U.S. EPA identification numbers and to contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

Non-hazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or Class III disposal facilities. (Cal. Code Regs., tit. 14, § 17300 et seq.)

There are a number of Recognized Environmental Conditions (RECs) that could require site remediation at the existing Huntington Beach Generating Station (HBGS). The primary portions of the site that are contaminated will be the responsibility of Southern California Edison (SCE). SCE has provided a Closure Plan, soil sampling and groundwater analysis for the Huntington Beach retention basins. In addition, more complete sampling results would be obtained as existing structures are demolished. The Soil Sampling and the Remediation Plan would be submitted to staff and the Huntington Beach Fire Department prior to the project site grading (Ex. 2000, p. 4.13-1.)

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The federal, state, and local environmental laws, ordinances, regulations, and standards (LORS) shown below in **Waste Management Table 1** have been established to ensure the safe and proper management of both solid and hazardous wastes in order to protect human health and the environment. Project compliance with the various LORS is a major component of staff's determination regarding the significance and acceptability of the HBEP with respect to management of waste.

**Waste Management Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Federal	
<p>Title 42, United States Code, §§ 6901, et seq.</p> <p>Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al.)</p>	<p>The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) et al., establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation, and delegation to states, enforcement provisions, and responsibilities, as well as research, training, and grant funding provisions.</p> <p>RCRA Subtitle C establishes provisions for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing:</p> <ul style="list-style-type: none"> • generator record keeping practices that identify quantities of hazardous wastes generated and their disposition; • waste labeling practices and use of appropriate containers; • use of a manifest when transporting wastes; • submission of periodic reports to the United States Environmental Protection Agency (U.S. EPA) or other authorized agency; and • corrective action to remediate releases of hazardous waste and contamination associated with RCRA-regulated facilities. <p>RCRA Subtitle D establishes provisions for the design and operation of solid waste landfills.</p> <p>RCRA is administered at the federal level by U.S. EPA and its 10 regional offices. The Pacific Southwest regional office (Region 9) implements U.S. EPA programs in California, Nevada, Arizona, and Hawaii.</p>
<p>Title 42, United States Code,</p> <p>§§ 9601, et seq.</p> <p>Comprehensive Environmental Response, Compensation and Liability Act</p>	<p>The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things, the statute addresses:</p> <ul style="list-style-type: none"> • reporting requirements for releases of hazardous substances; • requirements for remedial action at closed or abandoned hazardous waste sites and brownfields; • liability of persons responsible for releases of hazardous substances or waste; and • requirements for property owners/potential buyers to conduct “all appropriate inquiries” into previous ownership and uses of the property to 1) determine if hazardous substances have been or may have been released at the site and 2) establish that the owner/buyer did not cause or contribute to the release. A Phase I Environmental Site Assessment is commonly used to satisfy CERCLA “all appropriate inquiries” requirements.

Applicable LORS	Description
Federal	
Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes	<p>These regulations were established by U.S. EPA to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes.</p> <ul style="list-style-type: none"> • Part 246 addresses source separation for materials recovery guidelines. • Part 257 addresses the criteria for classification of solid waste disposal facilities and practices. • Part 258 addresses the criteria for municipal solid waste landfills. • Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (i.e., batteries, mercury-containing equipment, and lamps). <p>U.S. EPA implements the regulations at the federal level. However, California is an authorized state so the regulations are implemented by state agencies and authorized local agencies in lieu of U.S. EPA.</p>
Title 49, CFR, Parts 172 and 173 Hazardous Materials Regulations	<p>U.S. Department of Transportation established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, section 262.20.</p>
State	
California Health and Safety Code, Chapter 6.5, §§ 25100, et seq. Hazardous Waste Control Act of 1972, as amended	<p>This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements.</p> <p>The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified Program Agencies (CUPAs) implement some elements of the law at the local level.</p>
Title 22, California Code of Regulations (CCR), Division 4.5 Environmental Health Standards for the Management of	<p>These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers, prepare manifests before transporting the waste off site, and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling.</p>

Applicable LORS	Description
Hazardous Waste	<p>Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters.</p> <p>The standards addressed by Title 22, CFR include:</p> <ul style="list-style-type: none"> • Identification and Listing of Hazardous Waste (Chapter 11, §§ 66261.1, et seq.) • Standards Applicable to Generators of Hazardous Waste (Chapter 12, §§ 66262.10, et seq.) • Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §§ 66263.10, et seq.) • Standards for Universal Waste Management (Chapter 23, §§ 66273.1, et seq.) • Standards for the Management of Used Oil (Chapter 29, §§ 66279.1, et seq.) • Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §§ 67450.1, et seq.) <p>The Title 22 regulations are established and enforced at the state level by DTSC. Some generator standards are also enforced at the local level by CUPAs.</p>
<p>California Health and Safety Code, Chapter 6.11 §§ 25404–25404.9</p> <p>Unified Hazardous Waste and Hazardous Materials Management Regulatory Program</p> <p>(Unified Program)</p>	<p>The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs listed below.</p> <ul style="list-style-type: none"> • Aboveground Storage Tank Program • Business Plan Program • California Accidental Release Prevention (CalARP) Program • Hazardous Material Management Plan / Hazardous Material Inventory Statement Program • Hazardous Waste Generator / Tiered Permitting Program • Underground Storage Tank Program <p>The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as Certified Unified Program Agencies (CUPAs). Orange County Department of Environmental Health is the area CUPA.</p> <p>Note: The Waste Management analysis only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. Other elements of the Unified Program may be addressed in the HAZARDOUS MATERIALS and/or WORKER HEALTH AND SAFETY analysis sections.</p>
<p>Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §§ 15100, et seq.</p> <p>Unified Hazardous Waste and Hazardous Materials Management Regulatory Program</p>	<p>While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses.</p> <ul style="list-style-type: none"> • Article 9 – Unified Program Standardized Forms and Formats (§§ 15400–15410). • Article 10 – Business Reporting to CUPAs (§§ 15600–15620).

Applicable LORS	Description
<p>Public Resources Code, Division 30, §§ 40000, et seq.</p> <p>California Integrated Waste Management Act of 1989.</p>	<p>The California Integrated Waste Management Act of 1989 (as amended) establishes mandates and standards for management of solid waste. Among other things, the law includes provisions addressing solid waste source reduction and recycling, standards for design and construction of municipal landfills, and programs for county waste management plans and local implementation of solid waste requirements.</p> <p>The act was amended in 2011 (AB 341) to include a legislative declaration of a state policy goal that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020. The 2011 amendments expand recycling to businesses and apartment buildings; require the state to develop programs to recycle three-quarters of generated waste; and require commercial and public entities that generate more than four cubic yards of commercial solid waste per week, and multifamily residential dwellings of five units or more, to arrange for recycling services beginning July 1, 2012.</p>
<p>Title 14, CCR, Division 7, § 17200, et seq.</p> <p>California Integrated Waste Management Board</p>	<p>These regulations further implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions.</p> <ul style="list-style-type: none"> • Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal. • Chapter 3.5 – Standards for Handling and Disposal of Asbestos Containing Waste. • Chapter 7 – Special Waste Standards. • Chapter 8 – Used Oil Recycling Program. • Chapter 8.2 – Electronic Waste Recovery and Recycling.
<p>California Health and Safety Code, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq.</p> <p>Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14).</p>	<p>This law was enacted to expand the state’s hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (~ 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a 4-year cycle, with a summary progress report due to DTSC every 4th year.</p>
<p>Title 22, CCR, § 67100.1 et seq.</p> <p>Hazardous Waste Source Reduction and Management Review.</p>	<p>These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the act.</p>
<p>California Health and Safety Code Section 101480 101490</p>	<p>These regulations authorize a local officer, such as the director of the Orange County Department of Environmental Health to enter into voluntary agreements for the oversight of remedial action at sites contaminated by wastes.</p>

Applicable LORS	Description
Title 22, CCR, Chapter 32, §67383.1 – 67383.5	This chapter establishes minimum standards for the management of all underground and aboveground tank systems that held hazardous waste or hazardous materials, and are to be disposed, reclaimed or closed in place.
Title 8, CCR §1529 and §5208	These regulations require the proper removal of asbestos containing materials in all construction work and are enforced by California Occupational Safety and Health Administration (Cal-OSHA).
Title 14, Chapter 9 Division 7 –(AB 939)	<p>AB 939 established the organization, structure, and mission of California Integrated Waste Management Board (CIWMB) in 1989. AB 939 not only mandated local jurisdictions to meet numerical diversion goals of 25% by 1995 and 50% by 2000, but also established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. Other elements included encouraging resource conservation and considering the effects of waste management operations. The diversion goals and program requirements are implemented through a disposal based reporting system by local jurisdictions under CIWMB regulatory oversight. Facility compliance requirements are implemented under a different approach primarily through local government enforcement agencies.</p> <p>Cal Recycle, formerly known as the CIWMB, is the state's leading authority on recycling, waste reduction, and product reuse officially known as the Department of Resources Recycling and Recovery</p>
Cal OSHA's Lead in Construction Standard is contained in Title 8, Section 1532.1 of the California Code of Regulations	. The regulations address all of the following areas: permissible exposure limits (PELs); exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection (MRP); employee information, training, and certification; signage; record keeping; monitoring; and agency notification.
Title 17, CCR, Division 1, Chapter 8, Section 35001	Requirements for lead hazard evaluation and abatement activities, accreditation of training providers, and certification of individuals engaged in lead-based paint activities.
Local	
South Coast Air Quality Management District (SCAQMD) Rule 1403	This rule establishes survey requirements, notification and work practice requirements to prevent asbestos emissions from emanating during renovation and demolition activities. SCAQMD Rule 1403 incorporates the requirements of the federal asbestos requirements found in National Emissions Standard for Hazardous Air Pollutants (NESHAP) in code of Federal Regulations (CFR) Title 40, Part 61, Subpart M.
Huntington Beach Fire Department City Specifications Underground Storage Tanks (city Spec	The Huntington Beach Fire Department administers the Hazardous Waste, Underground Storage Tank, and Aboveground Petroleum Storage Tank programs

Applicable LORS	Description
418). Aboveground Storage Tanks (City Spec 425), Soil Cleanup Standards (City Specs 431-92)	
Orange County Integrated Waste Management Plan	The plan provides guidance for local management of solid waste and household hazardous waste (incorporates the county's Source Reduction and Recycling Elements, which detail means of reducing commercial and industrial sources of solid waste).
Orange County Health Care Agency - Environmental Health Division, Hazardous Waste Inspection Program	Hazardous Material Division is the Certified Unified Program Agency (CUPA) for Orange County that regulates and conducts inspections of businesses that handle hazardous materials, hazardous wastes, and/or have underground storage tanks. Hazardous Material Division programs include assistance with oversight on property re-development (i.e., brownfields) and voluntary or private oversight cleanup assistance.
Policy	
Construction & Demolition (C&D) Recycling and Reuse Program Policy	This policy and ensuing program are designed to assist the county in compliance with this state mandate. The Integrated Waste Management Act of 1989 (AB939) required cities and counties to reduce, by 50%, the amount of waste disposed of in landfills by the year 2000 and beyond or potentially incur fines of up to \$10,000 per day.

(Ex. 2000, pp. 4.13-2 – 4.13-6.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Existing Site Conditions

The proposed project site would be located within the Huntington Beach Generating Station (HBGS) site on a 28.6-acre site at 21730 Newland Street, in Huntington Beach, Orange County, California. HBGS is a highly disturbed industrial brownfield site. The site is bordered to the north and east by the Huntington Beach Channel and residential areas, to the west by manufactured homes/recreational vehicle park, to the south and southwest by the Huntington Beach State Park and Pacific Ocean, and the southeast by Huntington Beach Wetland Preserve/Magnolia March wetlands. The ASCON Landfill site is a state Superfund site located to the northeast of HBGS (Ex. 1001, Appendix 5.14A, p.15). Records indicate that groundwater contamination is known to exist at the ASCON site and there is potential for the contaminated groundwater to have migrated to the HBGS. This potential for contaminant migration from the ASCON Landfill site is identified as an area of potential concern.

Direct/Indirect Impacts and Mitigation

Existing Site Contamination

The HBGS began operation in 1958 under the ownership of Southern California Edison (SCE). The power plant utilized fuel oil for production of electricity through its five generating units until the late 1980s, when the generating units were converted to natural gas operation. AES Huntington Beach, LLC, acquired the HBGS from SCE in 1998. The proposed HBEP would be built within the footprint of the HBGS. Each operating unit consists of a boiler, turbine and other support facilities.

A Phase I Environmental Site Assessment (ESA) dated February 2012, was prepared by EMS for the Huntington Beach Energy Project. The ESA encompassed 46.23 acres located on four parcels which included the project site. The HBEP would be built on two of the four parcels. The ESA was completed in accordance with the American Society for Testing and Materials Standard Practice E 1527-05 for ESAs. (Ex. 1001, Appendix 5.14A). The RECs and Historical RECs identified are included in **Waste Management Table 2**.

**Waste Management Table 2
Recognized Environmental Conditions**

Areas of Concern	Type of contamination	Regulating Agency
Units 1 & 2 Retention Ponds	Metals, VOCs	DTSC – by stipulated order
Plugged oil & gas wells	Several	Huntington Beach Fire Department and the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR)
North fuel oil storage tank	Fuel oil	Huntington Beach Fire Department
Aboveground Storage Tanks	<u>Unit 5 Peaker Fuel Oil Tank</u> – 21,500 Barrels (64 Foot Diameter x 40 Feet Tall) <u>Large Oil Tank</u> – 220,000 Barrels (200 Foot Diameter x 40 Feet Tall)	Huntington Beach Fire Department
Aboveground & underground pipelines	Fuel oil	Huntington Beach Fire Department
Groundwater	Metals, VOCs, 1,4-dioxane	DTSC – thru corrective action
Several spills	Petroleum	DTSC – thru corrective action
Concrete degreasing pits		DTSC – thru corrective action
Near retention basin	TCE, PCE	

Machine shop area	Various chemicals	
Transformers	1984 rupture of Number 4 Auxiliary transformer	
Number of USTs	Various	Huntington Beach Fire Department, Orange County Health Care Agency
Contaminated Groundwater (adjacent to the property)	Various	DTSC
Asbestos	Site buildings were constructed prior to 1980.	South Coast Air Quality Management District
Lead	Site buildings were constructed prior to 1980.	

(Ex. 2000, p. 4.13-10.)

According to the Phase I ESA, per the Department of Oil Gas and Geothermal Resources (DOGGR) Online Mapping System, there is one plugged oil and gas well on the southwestern portion of the HBGS site between Units 1 and 2 and the retention ponds. There are also numerous wells including two plugged oil and gas wells located east of the North and East fuel oil storage tanks. North of the fuel oil storage tank is an abandoned dry hole. Additional information on the abandoned wells is included in the **GEOLOGY AND PALEONTOLOGY** section of this Decision. (Ex. 2000, p. 4.13-10.)

The project owner would come in contact with many of the RECs listed in **Waste Management Table 2** during demolition. SCE has indicated they have primary responsibility for the REC's. The project owner and SCE have indicated they would coordinate and contact the appropriate regulatory agency and, when required complete remediation, of contaminated areas prior to construction. SCE is currently working with the Department of Toxic Substance Control on the closure of the HBGS retention basin site. The RECs that are associated with the HBEP will be mitigated according to the conditions of certification set forth herein and federal, state and local LORS. (Ex. 2000, p. 4.13-10.)

We adopt staff-proposed Condition of Certification **WASTE-1**¹, which would ensure the applicant adequately characterizes the site and completes remediation in accordance with the Energy Commission's conditions of certification as well as applicable LORS. Condition of Certification **WASTE-1** requires that any additional work be conducted under the oversight of the Energy Commission Compliance Project Manager (CPM), the Department of Toxic Substances Control (DTSC), the Huntington Beach Fire Department and Orange County.

¹ The Conditions of Certification for Waste Management are found in Appendix "A" to this Decision.

We also adopt staff-proposed Conditions of Certification **WASTE-3** and **WASTE-4** to address any soil contamination contingency that may be encountered during project construction. **WASTE-3** would require that an experienced and qualified Professional Engineer or Professional Geologist be available for consultation in the event contaminated soil not previously identified is encountered. If contaminated soil is identified, **WASTE-4** would require that the Professional Engineer or Professional Geologist inspect the site, determine what is required to characterize the nature and extent of contamination, and provide a report to the CPM with findings and recommended actions. **WASTE-4** also addresses identification and investigation of any previously unidentified soil or groundwater contamination that may be encountered.

Demolition and Construction Impacts and Mitigation

Site preparation, demolition, and construction of the proposed power plant and associated facilities would last approximately seven years and generate both nonhazardous and hazardous wastes in solid and liquid forms (Ex. 1001, § 5.14.4.1). Before demolition and construction can begin, the project owner would be required to develop and implement a Demolition and Construction Waste Management Plan, per Condition of Certification **WASTE-5**.

Nonhazardous Wastes

Nonhazardous waste would be generated from the demolition of Huntington Beach Generating Station's Units 1, 2, and 5 and the construction of HBEP. Roughly 25,544 tons of demolition nonhazardous waste and 390 tons of construction nonhazardous waste would be generated as part of the HBEP project (Ex. 1001, p. 5.14-11). Demolition and construction waste would consist of wood, glass, plastic, paper, scrap metals, concrete, and asphalt. All non-hazardous wastes would be recycled to the extent possible and non-recyclable wastes would be collected by a licensed hauler and disposed in a solid waste disposal facility, in accordance with Title 14, California Code of Regulations, section 17200 et seq. During demolition, approximately 2,350 tons of concrete and 22,000 tons of metal debris would be recycled (Ex. 1001, p. 5.14-6). During construction, 288 tons of paper, wood, glass and plastics will be generated and recycled where practical. Approximately 36 tons of metal would be recycled. (Ex. 1001, Table 5.14-2).

The California Department of Resources Recycling and Recovery (now CalRecycle, formerly California Integrated Waste Management Board (CIWMB)) is responsible for recycling, waste reduction, and product reuse programs in California. CalRecycle also promotes innovation in technology to encourage economic and environmental sustainability. The 2008 California Green Building Standards Code Requires all construction projects to develop a recycling plan to divert and/or recycle at least 50 percent of waste generated during construction, (CalGreen Building Standards Code

Section 708 construction Waste Reduction, Disposal and Recycling). Compliance with Condition of Certification **WASTE-5** will ensure the applicant's compliance with the CalGreen Building Code requirements.

Nonhazardous liquid wastes would also be generated during construction, including sanitary wastes, dust suppression and stormwater drainage, and equipment wash and test water. Sanitary wastes would be collected in portable, self-contained chemical toilets and pumped periodically for disposal at an appropriate facility. Potentially contaminated equipment wash and/or test water would be contained at designated areas, tested to determine if hazardous, and either discharged to the storm water retention basin (if nonhazardous) or transported to an appropriate treatment/disposal facility.

Hazardous Wastes

The HBEP would produce hazardous waste during demolition and construction. It is anticipated that 1,205 tons of hazardous waste would be generated during demolition. The waste generated would include: asbestos waste, electrical equipment, used oils, universal wastes and lead-acid storage batteries (Ex. 1001, p. 5.14-13). Demolition of Units 1, 2 and 5 would generate 700 tons of asbestos that would be disposed of in a permitted facility. (Ex. 1017.) The South Coast Air Quality Management District (SCAQMD) Rule 1403 requires the owner or operator of a demolition or renovation to submit an Asbestos Demolition or Renovation Operation Plan at least 10 working days before any asbestos stripping or removal work begins. **WASTE-2** requires that the project owner submit the SCAQMD Asbestos Notification Form for review and approval prior to removal and disposal of asbestos. This program ensures there would be no release of asbestos that could impact public health and safety. The generation of hazardous wastes anticipated during construction includes empty hazardous material containers, solvents, waste paint, oil absorbents, used oil, oily rags, batteries, and cleaning wastes. The amount of waste generated would be minor if handled in the manner identified in the AFC. (Ex. 1001, § 5.14.1.2.2.)

Wastes would be accumulated on site for less than 90 days and then properly manifested, transported, and disposed at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies. The disposal methods described in the AFC (Ex. 1001, § 5.14.4.1.2) would ensure that all wastes will be disposed in accordance with all applicable LORS. Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by Condition of Certification **WASTE-6** to notify the Energy Commission's Compliance Project Manager (CPM).

We find that compliance with Conditions of Certification **WASTE-3** and **WASTE-4** would address any soil contamination contingency that may be encountered during

construction of the project and would ensure compliance with LORS. Project compliance with LORS would be sufficient to ensure that no significant impacts would occur as a result of project waste management activities.

Operation Impacts and Mitigation

The proposed HBEP would generate non-hazardous and hazardous wastes in both solid and liquid forms under normal operating conditions. The applicant provided a summary of the operation waste streams, expected waste volumes and generation frequency, and management methods proposed. (Ex. 1001, table 5.14-4.) Before operations can begin, the project owner would be required to develop and implement an Operation Waste Management Plan pursuant to Condition of Certification **WASTE-7**.

Non-Hazardous Solid Wastes

The generation of as much as 39 tons per year of non-hazardous solid wastes is expected during project operation including routine maintenance wastes (such as used air filters, spent deionization resins, sand and filter media), as well as domestic and office wastes (such as office paper, newsprint, aluminum cans, plastic, and glass). All non-hazardous wastes would be recycled to the extent possible, and non-recyclable wastes will be regularly transported off site to a local solid waste disposal facility. (Ex. 1001, § 5.14.1.2.3.)

Non-Hazardous Liquid Wastes

Non-hazardous liquid wastes would be generated during facility operation and are discussed in the **SOIL AND WATER RESOURCES** section of this document.

Hazardous Wastes

The generation of hazardous wastes expected during routine project operation includes used hydraulic fluids, oils, greases, oily filters and rags, spent selective catalytic reduction catalysts, cleaning solutions and solvents, and batteries. In addition, spills and unauthorized releases of hazardous materials or hazardous wastes may generate contaminated soils or materials that may require corrective action and management as hazardous waste. Proper hazardous material handling and good housekeeping practices would help keep spills to a minimum. However, to ensure proper cleanup and management of any contaminated soils or waste materials generated from hazardous materials spills, we adopt Condition of Certification **WASTE-8** requiring the project owner/operator to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements. More information on hazardous material management, spill reporting, containment, and spill control and countermeasures plan provisions for the project is provided in the **HAZARDOUS MATERIAL MANAGEMENT** section of this Decision.

The amount of hazardous wastes generated during the operation of HBEP would be minor: 100 pounds per year. Source reduction and recycling of wastes would be implemented whenever possible (Ex. 1001, Table 5.14-4). The hazardous wastes would be temporarily stored on site, transported off site by licensed hazardous waste haulers, and recycled or disposed at authorized disposal facilities in accordance with established standards applicable to generators of hazardous waste (Title 22, CCR, §§ 66262.10 et seq.). Should any operations waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by Condition of Certification **WASTE-6** to notify the CPM whenever the owner becomes aware of any such action. (Ex. 2000, p. 4.13-15.)

Impact on Existing Waste Disposal Facilities

Non-Hazardous Wastes

The proposed project would generate 56,389 cubic yards of solid waste during demolition, approximately 2,600 cubic yards of solid waste during construction, and approximately 26 cubic yards per year would be produced during operation. Nonhazardous waste would be disposed in a California Class III landfill. (Ex. 2000, p. 4.13-17.)

Orange County is required to submit an annual report that is reviewed by CalRecycle, the state agency responsible for implementing the California Integrated Waste Management Act, at a minimum every four years to demonstrate that it is meeting the state's 50 percent diversion requirement and implementing its programs. Condition of Certification **WASTE-5** requires the project owner to submit a construction waste management plan for approval by the Energy Commission compliance project manager (CPM) and for review by Orange County that demonstrates that they will meet the construction waste diversion requirements. Pursuant to Condition of Certification **WASTE-7**, the applicant would also be required to submit to the CPM for approval, and to Orange County for review, an Operation Waste Management Plan (OWMP), discussing how the project would divert to the maximum extent feasible the recyclable materials that would be generated during construction and operation of the facility. The CPM and county would determine if the plan is diverting recyclables to the maximum extent feasible. If the OWMP is approved, as a condition prior to issuance of the project's building permit, the applicant would be required to divert all materials from the solid waste stream that could reasonably be diverted for alternate uses. (Ex. 2000, p. 4.13-16.)

Waste Management Table 3 shows two non-hazardous (Class III) waste disposal facilities that could potentially take the non-hazardous construction and operation wastes that would be generated but could not be diverted by the HBEP. The remaining capacity for the two Orange County landfills combined is approximately 245 million

cubic yards. The total amount of non-hazardous waste generated from project construction and operation after the material has been diverted to the maximum extent feasible would contribute less than one percent of the available landfill capacity. We conclude that disposal of the solid wastes generated by HBEP could occur without significantly impacting the capacity or remaining life of any of these facilities.

Hazardous Wastes

Waste Management Table 3 shows two hazardous waste (Class I) landfills available in California. These landfills have a combined approximately 15 million cubic yards of remaining hazardous waste disposal capacity, with 26 and 30 years of remaining operating lifetime, respectively. (Ex. 1001, Section 5.14.2.3.)

**Waste Management Table 3
Recycling/Disposal Facilities**

Landfill	Location	Permitted Capacity	Remaining Capacity	Estimated Closure Date
	City	Cubic yards	Cubic yards	
Class III -Nonhazardous				
Frank Bowerman Sanitary Landfill	Irvine, Orange County, CA	266 million	198 million	2022
Olinda Alpha Sanitary Landfill	Brea, Orange County, CA	148 million	47 million	2021
Class I -Hazardous Waste				
Chemical Waste Management - Kettleman (Class I, II, III)	Kettleman City, Kern County, CA	10 million	6 million	2044
Clean Harbors Buttonwillow (Class I)	Buttonwillow, Kern County, CA	14.3 million	9.2 million	2040

(Ex. 2000, p. 4.13-17.)

Hazardous wastes generated during construction and operation would be recycled to the extent possible and practical. Those wastes that cannot be recycled would be transported off site to a permitted treatment, storage, or disposal facility. Approximately 8,033 cubic yards of hazardous demolition waste, 53 cubic yards of hazardous construction waste and less than 100 cubic yards per year of hazardous operational waste would be generated from the HBEP facility. The total amount of hazardous wastes generated by the HBEP project would consume less than one percent of the 15

million cubic yards of remaining permitted capacity. Therefore, impacts from disposal of HBEP generated hazardous wastes would have a less than significant impact on the remaining capacity at Class I landfills.

Cumulative impacts and mitigation

The CEQA Guidelines (Section 15355) define cumulative effects as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

Long-term cumulative impacts are not anticipated with the implementation of HBEP because, as proposed, the amount of non-hazardous and hazardous wastes generated during construction and operation of the HBEP would be less than one percent of the county’s waste generation.

Compliance with LORS

The evidence establishes that the proposed HBEP would comply with all applicable LORS regulating the management of hazardous and non-hazardous wastes during both facility construction and operation. The applicant is required to recycle and/or dispose hazardous and non-hazardous wastes at facilities licensed or otherwise approved to accept the wastes. Because hazardous wastes would be produced during both project construction and operation, the HBEP would be required to obtain a hazardous waste generator identification number from U.S. EPA. The HBEP would also be required to properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees, in accordance with state and federal hazardous waste management requirements.

In the **SOCIOECONOMICS** section of this Decision, census information shows that there are not minority populations within six miles of the HBEP. Therefore, there are no environmental justice issues for Waste Management.

FINDINGS OF FACT

Based on the evidentiary record, the Commission makes the following findings:

1. The project owner will implement appropriate characterization, disposal, and remediation measures to ensure that the potential risk of exposure to unknown contaminated soils at the site is reduced to insignificant levels.
2. The project will generate non-hazardous and hazardous wastes during excavation, construction, and operation.
3. The project will obtain a hazardous waste generator identification number from the United States Environmental Protection Agency.
4. The project will recycle non-hazardous and hazardous wastes to the extent feasible and in compliance with applicable law.
5. Hazardous wastes that cannot be recycled will be transported by registered hazardous waste transporters to appropriate Class I landfills.
6. Solid non-hazardous wastes that cannot be recycled will be deposited at Class III landfills.
7. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the **SOIL AND WATER RESOURCES** section of this Decision.
8. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

CONCLUSIONS OF LAW

1. Implementation of the conditions of certification below, and the waste management practices described in the evidentiary record will reduce potential adverse impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.
2. The management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management.
3. The disposal or diversion of project wastes would not result in significant adverse impacts to existing waste disposal or diversion facilities.
4. There are no minority populations within six-miles of the HBEP; therefore, there are no environmental justice issues related to the project's waste management.

V. ENVIRONMENTAL ASSESSMENT

In this section of the Decision, the Commission considers the potential impacts of project-related activities on resources in the area, including biological resources, soil and water resources, cultural resources, and geological and paleontological resources.

A. BIOLOGICAL RESOURCES

INTRODUCTION

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, and other resources of critical biological interest such as wetlands and unique habitats.

The evidence contained in the record describes the biological resources in the vicinity of the project site, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS). Both the Commission staff and the Applicant presented evidence and analysis of the project's potential impacts on biological resources. (07/21/14 RT 29:13-31:11; 169: 12-189:1; Exs. 1001, 1004, 1008, 1009, 1017, 1030, 1035, 1052, 1085, 1090, 1096, 1105, 1123, 1127, 1132, 1133, 1137, 2000, and 2003.)

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

Extensive urban development throughout the region has replaced most of the natural open space. Natural habitats are now restricted to scattered open space preserves and other protected areas. (Ex. 2000, p. 4.2-5.)

The project site and offsite laydown area are industrial brownfield sites with operating power plants. (Ex. 2000, p. 4.2-13.)

The HBEP will be constructed on the existing Huntington Beach Generating Station (HBGS) site. The construction laydown area will be located at the Alamitos Generating Station (AGS) in the city of Long Beach. Both are industrial brownfield sites with operating power plants. Therefore, the areas impacted by the HBEP are highly disturbed and/or developed. Vegetation is limited to a few weedy species and maintained landscaping. The project site itself does not provide important habitat for native wildlife. (Ex. 2000, pp. 4.2-12 – 4.2-13.)

The HBEP is located in a region with several important ecological reserves, wetland preservation sites, and designated open space areas. These protected areas represent some of the best remaining habitat in the region and provide important habitat for migratory birds along the Pacific Flyway. These areas also provide as habitat for several special-status plants and animals. (Ex. 200, pp. 4.2-5 – 4.2-9.)

The evidence shows that various biological resources surveys of the site and vicinity have occurred, including one performed by the Applicant in September 2011, and supplemental surveys in 2012. Four observation points were established along the southeast perimeter to observe birds in the adjacent marsh. (Ex. 2000, p. 4.2-9 – 4.2-12.)

Biological Resources Table 1 lists the special status species which may occur within ten miles of HBGS and the laydown yard. (Ex. 2000, pp. 4.2-4, 4.2-13 – 4.2-22.)

**Biological Resources Table 2
Special-status Species Known to Occur or Potentially Occurring in the HBEP
Area and the Regional Vicinity**

Common Name (<i>Scientific Name</i>)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
PLANTS		
Chaparral sand-verbena (<i>Abronia villosa</i> var. <i>aurita</i>)	_/_/1B.1/ G5T3T4/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Historic CNDDDB occurrence in Santa Ana River bed, 1.5 to 2 miles from the ocean.
Aphanisma (<i>Aphanisma blitoides</i>)	_/_/1B.2/ G3G4/S3	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Historic CNDDDB occurrence in Newport Beach and Upper Newport Bay Regional Park.
Ventura Marsh milk-vetch (<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>)	FE/SE/1B.1/ G2T1/S1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Nearest CNDDDB occurrence is historic record from Bolsa Bay; possibly extirpated.
Coulter's saltbush (<i>Atriplex coulteri</i>)	_/_/ 1B.2/ G2/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Nearest CNDDDB occurrence is historic record at the Newport Bay approximately 5.3 miles from proposed HBEP project site.
South coast saltscale (<i>Atriplex pacifica</i>)	_/_/1B.2/ G3G4/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Nearest records are from 1932 at the Newport Bay and 1998 at the Crystal Cove State Park, Pelican Point Coastal Terrace.

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Parish's brittlescale (Atriplex parishii)	_/_/1B.1/ G1G2/S1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. One record 9 miles northeast of the offsite laydown area; this occurrence is from 1881 and the area is now developed.
Davidson's saltscale (Atriplex serenana var. davidsonii)	_/_/1B.2/ G5T2?/ S2?	Low. No suitable habitat occurs within the proposed project site or offsite laydown area. CNDDDB occurrence records are from Santa Ana River, Balboa, Newport Lagoon, San Joaquin Marsh Preserve, and UC National Preserve System. The nearest CNDDDB record is 1.7 mile from the proposed HBEP site.
Intermediate mariposa-lily (Calochortus weedii var. intermedius)	_/_/1B.2/ G3G4T2/S2.2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. CNDDDB record was in rock outcrop habitat in San Joaquin Hills approximately 10 miles from the HBEP site.
Southern tarplant (Centromadia parryi ssp. australis)	_/_/1B.1/ G3T2/S2	Low. Only very poorly suitable habitat occurs within the proposed project site or offsite laydown area. The nearest CNDDDB records are at Loynes Drive and Studebaker Ave. (0.3 mile northwest of offsite laydown area), Bixby Ranch Oil Field (0.5 mile south of offsite laydown area), Talbert regional Park, Santa Ana River Marsh, Upper Newport Back Bay, Bolsa Chica, and Long Beach about 1 mile from the offsite laydown area.
Salt marsh bird's-beak (Chloropyron maritimum ssp. maritimum)	FE/SE/1B.2/ G4?T1/S1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Most of the nearest occurrences are historic records and are noted in CNDDDB as possibly extirpated. Nearest presumed extant, recent record is in Upper Newport Bay Ecological Reserve 5 miles east of the HBEP site.
Many-stemmed dudleya (Dudleya multicaulis)	_/_/1B.2/ G2/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Documented from a 1932 collection from Newport Bay approximately 5 miles east of the HBEP site and a 1908 collection from Corona Del Mar over 7 miles southeast of the project site. These occurrences are believed to be extirpated.
Cliff spurge (Euphorbia misera)	_/_/2.2/ G5/S1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. The closest record is 7 miles southeast of the HBEP site and this species has not been documented within 10 miles of the offsite laydown area.

BIOLOGICAL RESOURCES

Common Name (<i>Scientific Name</i>)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Los Angeles sunflower (<i>Helianthus nuttallii</i> ssp. <i>parishii</i>)	___/___/1A/ G5TH/SH	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. The CNDDDB documents two historic occurrences; 5 miles north and 5 miles east of the HBEP site. This species is presumed extirpated in California.
Mesa horkelia (<i>Horkelia cuneata</i> var. <i>puberula</i>)	___/___/1B.1/ G4T2/S2.1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. The closest record is about 5 miles northwest of the HBEP site at the Bolsa Chica Salt Marsh.
Southwestern spiny rush (<i>Juncus acutus</i> ssp. <i>leopoldii</i>)	___/___/4.2/ G5T5/S3.2	Low. No suitable habitat occurs within the proposed project site or offsite laydown area, but occurs in the Huntington Beach Wetlands Conservancy's coastal salt marsh preserved immediately adjacent to the HBEP site.
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	___/___/1B.1/ G4T3/S2.1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Documented CNDDDB occurrences within 5 miles of the HBEP site or laydown area are from Los Alamitos, Bryant Ranch, Seal Beach National Wildlife Refuge, Costa Mesa, and Bolsa Chica Salt Marsh. All are historic records, and most are listed by the CNDDDB as possibly extirpated.
Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)	___/___/4.3/ G5T3/S3	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. There is one CNDDDB record from the UC Irvine Open Space preserve about 7 miles from the HBEP site.
Mud nama (<i>Nama stenocarpum</i>)	___/___/2B.2/ G4G5/S1S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Nearest occurrences are a historic record from the Seal Beach National Wildlife Refuge 2 miles from the offsite laydown area and a 1998 record from vernal pools in the Fairview Regional Park approximately 3 miles from the HBEP site.
Gambel's water cress (<i>Nasturtium gambelii</i>)	FE/ST/1B.1/ G1/S1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Nearest record is from 1908 collection at Huntington Beach approximately 1.5 miles from the HBEP site; this occurrence has likely been extirpated by development.
Prostrate vernal pool navarretia (<i>Navarretia prostrata</i>)	___/___/1B.1/ G2/S2	Low. No suitable habitat occurs within the proposed project site or offsite laydown area. Known from vernal pools in the Fairview Regional Park approximately 2 miles from the HBEP site.

BIOLOGICAL RESOURCES

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Coast woolly-heads (<i>Nemacaulis denudata</i> var. <i>denudata</i>)	___/___/1B.2/ G3G4T3?/ S2.2	Low. No suitable habitat occurs within the proposed project site or offsite laydown area. There are nearby observations at Seal Beach, Newport Bay and Peninsula, Bolsa Chica, the mouth of the Santa Ana River, and the southern end of the Huntington State Beach. Closest CNDDDB occurrences are about 1.7 miles from the HBEP site and about 1.25 miles from the offsite laydown area.
California Orcutt grass (<i>Orcuttia californica</i>)	FE/SE/1B.1/G1/S 1	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Species was documented approximately 5 miles northwest of the offsite laydown area, but this occurrence is presumed extirpated.
Lyon's pentachaeta (<i>Pentachaeta lyonii</i>)	FE/SE/1B.1/G2/S 2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. The nearest record is approximately 4.5 miles northeast of the project area and approximately 6 miles southeast of the offsite laydown area.
Nuttall's scrub oak (<i>Quercus dumosa</i>)	___/___/1B.1/ G2/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area, and not observed during surveys of the project site. Nearest occurrence record is approximately 6 miles southeast of the HBEP and no records have been documented within 10 miles of the offsite laydown area.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	___/___/1B.2/ G3/S3	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. This species has been documented about 5.7 miles northwest of the HBEP site. There are no records within 10 miles of the offsite laydown areas.
Chaparral ragwort (<i>Senecio aphanactis</i>)	___/___/2.B2/ G3?/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. The nearest record is approximately 7 miles east northeast of the HBEP site.
Salt spring checkerbloom (<i>Sidalcea neomexicana</i>)	___/___/2B.2/ G4?/S2S3	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. This species has been recorded approximately one-half mile north of the offsite laydown area; however, this record is from 1936 and the area is now developed.
Estuary seablite (<i>Suaeda esteroa</i>)	___/___/1B.2/ G3/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Historic occurrences have been reported at the Bolsa Chica Ecological Reserve, near the Seal Beach National Wildlife Refuge, and Newport Slough east of the Santa Ana River (approximately 5 miles from HBEP site).

BIOLOGICAL RESOURCES

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
San Bernardino aster (Symphyotrichum defoliatum)	_/_/1B.2/ G2/S2	Not Likely to Occur. No suitable habitat occurs within the proposed project site or offsite laydown area. Closest CNDDDB occurrence record is near Newport Bay approximately 5.1 miles from the HBEP site.
WILDLIFE		
Invertebrates		
San Diego fairy shrimp (Branchinecta sandiegonensis)	FE/_/_// G1/S1	Low. No suitable vernal pool habitat occurs within the HBEP site or offsite laydown area. Recorded in Fairview Park, 2.3 miles from the HBEP site. There is designated critical habitat about 1.5 miles east and 2.3 miles northeast of the HBEP site.
Western tidal-flat tiger beetle (Cicindela gabbii)	_/SA/_// G4/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Area occurrences are historic and most are considered extirpated. Inhabits estuaries and mudflats along the Southern California coast.
Sandy beach tiger beetle (Cicindela hirticollis gravida)	_/SA/_// G5T2/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Area occurrences are historic and are presumed extirpated by development. Inhabits areas adjacent to non-brackish water along the California coast.
Western beach tiger beetle (Cicindela latesignata latesignata)	_/SA/_// G4T1T2/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Area occurrences are historic and are extirpated. Inhabits mudflats and beaches in Southern California.
Senile tiger beetle (Cicindela senilis frosti)	_/SA/_// G4T1/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. One regional historic record, presumed extirpated. Species inhabits marine shoreline, from central California coast south to salt marshes of San Diego. It is also found at Lake Elsinore.
Globose dune beetle (Coelus globosus)	_/SA/_// G1/S1	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Recorded in 2008 at Huntington Beach less than one mile southeast of the HBEP site. Species inhabits coastal sand dunes.
Monarch butterfly (Danaus plexippus)	_/SA/_// G5/S3	Moderate. Although not recorded on site, could roost in landscape trees throughout the HBEP. Records from the 1980s and 1990s Bolsa Chica Ecological Reserve, El Dorado Nature Center, Gum Grove Park, Huntington Beach Central Park, and Norma B. Gibbs Regional Park. Nearest record is one mile southeast of the offsite laydown area. Roosts in wind-protected tree groves along the California coast in winter.

BIOLOGICAL RESOURCES

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Wandering (saltmarsh) skipper (Panoquina errans)	___/SA/___/ G4G5/S1	Moderate. No suitable habitat occurs within the HBEP site or offsite laydown area. Records from 1989 at the Bolsa Chica Ecological Reserve are about 5 miles southeast of the offsite laydown area. Recorded in 2004 at Newland Marsh less than one-half mile northwest of the HBEP site and in the Brookhurst Marsh less than one mile southeast of the HBEP site. Inhabits coastal salt marshes in Southern California; requires moist saltgrass for larval development.
Dorothy's El Segundo Dune weevil (Trigonoscuta dorothea dorothea)	___/SA/___/ G1T1/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Records from 1989 at the Bolsa Chica Ecological Reserve, about 5 miles southeast of the offsite laydown area. Inhabits coastal sand dunes in Los Angeles County.
Mimic tryonia (=California brackishwater snail) (Tryonia imitator)	___/SA/___/ G2G3/S2S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Records from 1996 at Upper Newport Bay and 1968 at Bolsa Chica Ecological Reserve. Inhabits coastal lagoons, estuaries, and salt marshes along California coast.
Reptiles		
Orange-throated whiptail (Aspidoscelis hyperythra)	___/CSC/___/ G5/S2	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Nearest occurrence is historic record from Corona Del Mar, over 6 miles from the HBEP site, and is extirpated. Inhabits low elevation coastal scrub, chaparral, and valley-foothill hardwood habitats.
Green turtle (Chelonia mydas)	FT/___/___/ G3/S1	Low. No aquatic habitat occurs within the HBEP site or offsite laydown area. Nearest occurrence is in the San Gabriel River between East 2nd Street and Hwy 22 adjacent to power generating plant at offsite laydown area location.
Red-diamond rattlesnake (Crotalus ruber)	___/CSC/___/ G4/S2?	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Nearest record approximately 9 miles from the HBEP site. Suitable habitats include arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, and cultivated areas.
Western pond turtle (Emys marmorata)	___/CSC/___/ G3G4/S3	Not Likely to Occur. No aquatic habitat occurs at the HBEP site or offsite laydown area. All nearby records possibly extirpated.
Coast horned lizard (Phrynosoma blainvillii)	___/CSC/___/ G4G5/S3S4	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains from sea level to 8,000 ft. Nearest CNDDDB occurrences are all extirpated by development.

BIOLOGICAL RESOURCES

Common Name (<i>Scientific Name</i>)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Birds		
Tricolored blackbird (<i>Agelaius tricolor</i>)	BCC/CSC/__/G5T2T4/S2S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Recorded approximately 0.5 mile from the offsite laydown area.
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	__/WL/__/G5T2T4/S2S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. The only record within 10 miles of the project area was on the west slope of Muddy Canyon, approximately 1 mile south of Signal Peak, San Joaquin Hills (2.5 miles east of Newport Beach).
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	_/CSC/__/G5/S2	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Closest occurrence is approximately 7 miles from the proposed HBEP site. Inhabits coastal sage scrub.
Burrowing owl (<i>Athene cunicularia</i>)	BCC/CSC/__/G4/S2	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Closest record is about 2.6 miles from the proposed project at Fairview Park in Costa Mesa; also recorded at Bolsa Chica Ecological Reserve.
Ferruginous hawk (<i>Buteo regalis</i>)	BCC/WL/__/G4/S3S4	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Nearest CNDDDB record is approximately 11 miles from the proposed project site and 2.5 miles from the offsite laydown area in Los Alamitos.
Coastal cactus wren (<i>Campylorhynchus brunneicapillus sandiegensis</i>)	BCC/CSC/__/G5T3Q/S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Nearest occurrences for this species have been recorded approximately 8-10 miles of the proposed HBEP site.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT/CSC/__/G4T3/S2	High. Reported less than one mile from the proposed HBEP site utilizing the coastal salt marshes in the vicinity of the site for foraging and loafing, including the Talbert Marsh. Nests at Huntington State Beach, approximately 1.3 miles from the HBEP site. Requires sandy, gravelly, or friable soils for nesting. There is designated critical habitat about 1.5 miles southeast of the HBEP site at the mouth of the Santa Ana River and about 5 miles northwest of the HBEP site at the Bolsa Chica Ecological Reserve and State Beach.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FC/SE/__/G5T3Q/S3	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Only record from the area, at San Gabriel River near Artesia, reported in 1912 and now presumed extirpated.

BIOLOGICAL RESOURCES

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
White-tailed kite (<i>Elanus leucurus</i>)	___/FP/___/ G5/S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area, but it could forage in adjacent marshes. Documented in multiple locations east to northeast of the project area. The closest occurrence is in Upper Newport Bay approximately 6.5 miles from the project area.
California horned lark (<i>Eremophila alpestris actia</i>)	___/WL/___/ G5T3Q/S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Documented approximately 7 miles southeast of the HBEP site.
Yellow-breasted chat (<i>Icteria virens</i>)	___/CSC/___/ G5/S3	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Documented in multiple locations approximately 8 miles northeast to southeast of the HBEP site.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	BCC/ST,FP/___/ G4T1/S1	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Historic CNDDDB occurrence records are from 1970 and 1971 in the Upper Newport Bay approximately 5 miles from the proposed project site.
Osprey (<i>Pandion haliaetus</i>)	___/WL/___/ G5/S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area, but could forage in open waters near the project. The nearest CNDDDB nesting occurrence is approximately 5.2 miles from the proposed HBEP site at the upper Newport Bay Ecological Reserve.
Belding's savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	___/SE/___/ G5T3/S3	High. No suitable habitat occurs within the HBEP site or offsite laydown area, but occurs in adjacent marshes. Occurs in several of the wetland preserves in the vicinity, including the adjacent Magnolia and Upper Magnolia marshes. The nearest CNDDDB occurrence is at the Newland Marsh approximately 0.5 mile from the proposed HBEP site.
California brown pelican (<i>Pelecanus occidentalis Californicus</i>)	FD/SD, FP/___/ G4T3/S1S2	High. No suitable feeding or nesting habitat occurs within the HBEP site or offsite laydown area. Recorded at the Santa Ana River Marsh and offshore approximately 6 miles southwest of the offsite laydown area. Routinely observed throughout the area.
Coastal California gnatcatcher (<i>Polioptila californica californica</i>)	FT/CSC/___/ G3T2/S2	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. The nearest CNDDDB occurrence records are approximately 4 to 10 miles from the HBEP site, including several from around Upper Newport Bay. There is designated critical habitat about 1.5 miles east of the HBEP site on the east side of Talbert Channel.

BIOLOGICAL RESOURCES

Common Name (Scientific Name)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Light-footed clapper rail (<i>Rallus longirostris levipes</i>)	FE/SE, FP/___/ G5T1T2/S1	High. Not likely to occur at the HBEP site or offsite laydown area, but could occur in adjacent marshes. Nests at the nearby Brookhurst and Santa Ana River Marshes and possibly the Talbert Marsh, the closest of which is less than one mile from the HBEP site. It is expected to forage within Magnolia Marsh (Zemba 2013), adjacent to the HBEP site. When restoration is complete (within a few years), Magnolia Marsh is expected to provide suitable breeding habitat.
Bank swallow (<i>Riparia riparia</i>)	___/ST/___/ G5/S2S3	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. The last CNDDDB occurrence record was from 1937 in Huntington Beach approximately 1.6 miles from the proposed HBEP site. Nesting populations are considered extirpated in southern California.
Black skimmer (<i>Rynchops niger</i>)	BCC/CSC/___/ G5/S1S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area; possible foraging habitat in open water habitats in the immediate vicinity of HBEP. The nearest nesting record is from 1990 at the Bolsa Chica Ecological Reserve.
California least tern (<i>Sternula antillarum browni</i>)	FE/SE, FP/ G4T2T3Q/S2S3	Moderate. No suitable habitat occurs within the HBEP site or offsite laydown area. Nests at Huntington State Beach, approximately 1.3 miles from the HBEP site and at the Bolsa Chica Ecological Reserve approximately 4.75 miles from the HBEP site. It forages at the Talbert Marsh as well as along the lower portions of the Talbert and Huntington Channel.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE/SE/___/ G5T2/S2	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. The nearest record is from Talbert Nature Preserve, approximately 1.75 miles from the project site. Habitat consists of southern willow riparian scrub with mulefat scrub understory.
Mammals		
Western mastiff bat (<i>Eumops perotis californicus</i>)	___/CSC/___/ G5T4/S3?	Moderate. No suitable habitat occurs within the HBEP site or offsite laydown area, but may forage over the open water and wetlands and around the HBEP site. CNDDDB records include Huntington Beach Central Park, 4 miles from the HBEP site (date of record not provided by CNDDDB), and a record from Buena Park in 1990, approximately 9 miles from the offsite laydown area.
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	___/SA/___/ G5/S3S4	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. There is one historic record from Bellflower in 1978, approximately 6.6 miles north of the offsite laydown area. This species forages over streams, ponds, and open brushy areas and roosts primarily in trees.

BIOLOGICAL RESOURCES

Common Name (<i>Scientific Name</i>)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Hoary bat (<i>Lasiurus cinereus</i>)	___/SA/___/ G5/S4?	Moderate. No suitable habitat occurs within the HBEP site or offsite laydown area, but may forage in wetland areas adjacent to and near the project. There is one historic record from Newport Beach in 1990, approximately 4 miles southeast of the HBEP site. This species utilizes open habitats or habitat mosaics, and feeds near habitat edges. Requires trees for roosting and water.
Western yellow bat (<i>Lasiurus xanthinus</i>)	___/CSC/___/ G5/S3	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. A CNDBB record from 1990 in Garden Grove is approximately 4.6 miles northeast of the offsite laydown area. The species is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees and forages over water.
South coast marsh vole (<i>Microtus californicus stephensi</i>)	___/CSC/___/ G5T1T2/S1S2	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. The CNDBB records occurrences at Sunset Beach (1916) and the Seal Beach Wildlife Refuge (1988) approximately 7 and 9 miles, respectively, from the HBEP site. It occurs in tidal marshes in Los Angeles, Orange, and Southern Ventura counties.
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	___/CSC/___/ G5/S2	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Nearest record is from Corona Del Mar (1988), approximately 7 miles southeast of the HBEP site. This species inhabits low-lying arid areas in Southern California and requires high cliffs or rocky outcrops for roosting.
Pacific pocket mouse (<i>Perognathus longimembris pacificus</i>)	FE/CSC/___/ G5T1/S1	Not Likely to Occur. No suitable habitat occurs within the HBEP site or offsite laydown area. Presumed extinct in the area. Suitable habitats for the contains fine-grain sandy substrates on the coastal strand, coastal dunes, river alluvium and coastal sage scrub.
Southern California saltmarsh shrew (<i>Sorex ornatus salicornicus</i>)	___/CSC/___/ G5T1? /S1	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. Historic CNDBB records are from 1933 in the Newport Lagoon, approximately 5 miles east-southeast of HBEP and 1968 in the general vicinity of Seal Beach, approximately 2 miles southwest of the offsite laydown area. Occurs in coastal marshes and requires dense vegetation and woody debris for cover.

BIOLOGICAL RESOURCES

Common Name (<i>Scientific Name</i>)	Status Fed/State/CRPR/ G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
American badger (<i>Taxidea taxus</i>)	___/CSC/___/ G5/S4	Low. No suitable habitat occurs within the HBEP site or offsite laydown area. One local CNDDDB record from 1998 in the Newport Beach, approximately 3 miles southeast of the HBEP site, was of a badger killed on Superior Avenue. Inhabits most shrub, forest, and herbaceous habitats, primarily in drier open areas. Requires friable soil for burrow construction.

Biological Resources Table 2 – Notes

STATUS CODES:

State

CSC: California Species of Special Concern. Species of concern to CDFW because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

SE: State listed as endangered

SR: State listed as rare

ST: State listed as threatened

SFP: Fully protected

WL: Watch List: includes species formerly on California Species of Special Concern List (Remsen 1978) but which did not meet the criteria for the current list of special concern bird species (Shuford and Gardali 2008).

SA: Special Animal. Species is tracked in the CNDDB (due to rarity, limited distribution in California, declining throughout the range, etc.) but holds no other special status at the state or federal level.

Federal

FE: Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT: Federally listed, threatened: species likely to become endangered within the foreseeable future

BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities

<http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf>

D: Delisted taxon that is considered recovered

California Native Plant Society (CNPS)

List 1B: Rare, threatened, or endangered in California and elsewhere

List 2: Rare, threatened, or endangered in California but more common elsewhere

List 3 = Plants which need more information

List 4 = Limited distribution – a watch list

0.1: Seriously threatened in California (high degree/immediacy of threat)

0.2: Fairly threatened in California (moderate degree/immediacy of threat)

0.3: Not very threatened in California (low degree/immediacy of threats or no current threats known)

Global Rank/State Rank

Global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. Subspecies are denoted by a T-Rank; multiple rankings indicate a range of values

G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals

G2 = 6-20 EOs OR 1,000-3,000 individuals

G3 = 21-100 EOs OR 3,000-10,000 individuals

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. An H-rank indicates that all sites are historical

S1 = Less than 6 element occurrences (EOs) OR less than 1,000 individuals

S1.1 = very threatened

S1.2 = threatened

S1.3 = no current threats known

S2 = 6-20 EOs OR 1,000-3,000 individuals

S3 = 21-100 EOs or 3,000-10,000 individuals

S4 = Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.

S5 = Demonstrably secure or ineradicable in California. No threat rank.

SH = All California occurrences historical (i.e., no records in > 20 years).

Potential Occurrence:

High – Suitable habitat is present within or near the proposed site: occurrence records exist for species in proximity to the site; species expected to occur on or near site

Moderate – Low quality habitat is present within or near the proposed site; species was not identified during reconnaissance surveys of the site; species may occur on or near site

Low – Marginal habitat is present on or adjacent to site; no recent records within 10 miles of the site

Not Likely to Occur – No recent records within 10 miles, no suitable habitat occurs on or near site

(Ex. 2000, pp. 4.2-13 – 4.2-22.)

STANDARDS OF REVIEW/ LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

California Environmental Quality Act (CEQA)¹

A project will result in significant impacts to biological resources under CEQA if it would result in:

- a substantial adverse effect to wildlife species that are federally-listed or state-listed or proposed to be listed; a substantial adverse effect to wildlife species of special concern to CDFW, candidates for state listing, or animals fully protected in California;
- a substantial adverse effect to plant species considered by CDFW, USFWS, or CNPS to be rare, threatened, or endangered in California or with strict habitat requirements and narrow distributions; a substantial impact to a sensitive natural community (i.e., a community that is especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies);
- substantial adverse effects on habitats that serve as breeding, foraging, nesting, or migrating grounds and are limited in availability or that serve as core habitats for regional plant and wildlife populations;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- substantial adverse effect on important riparian habitats or wetlands and any other “Waters of the U.S.” or state jurisdictional waters; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

(CEQA Guidelines, App. G, §IV.)

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq.,(Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as “CEQA”.

Compliance with Laws, Ordinances, Regulations, and Standards

The laws, ordinances, regulations, and standards applicable to the project's potential impacts during project construction, demolition, and operation on biological resources are listed in **Biological Resources Table 2**.

**Biological Resources Table 2
Laws, Ordinances, Regulations, and Standards**

Applicable LORS	Description
Federal	
Endangered Species Act (Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.)	Designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Take of federally listed species as defined in the Act is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or Section 10 Habitat Conservation Plan. The administering agencies are the USFWS and National Marine Fisheries Service.
Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26))	Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into Waters of the U.S., including wetlands. Section 401 requires a permit from a regional water quality control board (RWQCB) for the discharge of pollutants.
Migratory Bird Treaty (Title 16, United States Code, sections 703 through 711)	Makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird including nests with viable eggs). The administering agency is the USFWS.
State	
California Endangered Species Act of 1984 (Fish and Game Code, sections 2050 through 2098)	Protects California's rare, threatened, and endangered species. The administering agency is CDFW.
California Code of Regulations (Title 14, sections 670.2 and 670.5)	Lists the plants and animals of California that are declared rare, threatened, or endangered. The administering agency is CDFW.
Fully Protected Species (Fish and Game Code sections 3511, 4700, 5050, and 5515)	Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also Title 14, California Code of Regulations, section 670.7). The administering agency is CDFW.
Nest or Eggs (Fish and Game Code section 3503)	Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. The administering agency is CDFW.
Migratory Birds (Fish and Game Code section 3513)	Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds. The administering agency is CDFW.

Applicable LORS	Description
State	
Lake and Streambed Alteration Agreement (Fish and Game Code sections 1600 et seq.)	Regulates activities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. Impacts to vegetation and wildlife resulting from disturbances to waterways are also reviewed and regulated during the permitting process. The administering agency is CDFW.
California Coastal Act (Public Resources Code, sections 30000 et seq.)	The California Coastal Act of 1976 establishes a comprehensive scheme to govern land use planning along the entire California coast. The Coastal Act sets forth general policies (§30200 et seq.) which govern the California Coastal Commission's review of permit applications and local plans. Specific to energy facilities, the Coastal Act requires that the Coastal Commission designate specific locations within the coastal zone where the establishment of a thermal power plant subject to the Warren-Alquist Act could prevent the achievement of the objectives of the Coastal Act (30413(b)). Section 30231 of California Coastal Act requires actions that minimize adverse impacts to biological productivity of coastal waters. Such actions may include: the control of run-off, minimization of discharge and entrainment, prevention of interference with surface water flow (and streams), prevention of groundwater depletion, use of wastewater reclamation, and maintenance of natural vegetation in buffer areas that protect riparian habitats. Section 30240 of the Coastal Act mandates protection of environmentally sensitive habitats from the degradation of habitat value. The administering agency is the California Coastal Commission.
California Food and Agriculture Code, section 403	The California Department of Food and Agriculture is the state agency designated to prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.
Porter-Cologne Water Quality Control Act	Regulates discharges of waste and fill materials to waters of the state, including "isolated" waters and wetlands.
Local	
City of Huntington Beach General Plan/Local Coastal Program/Coastal Element	The Conservation and Open Space and Land Use Elements of the General Plan direct the city of Huntington Beach to evaluate the compatibility of proposed development projects with the preservation of biological resources and open space. As a condition of development adjacent to environmentally sensitive habitats delineated in the General Plan, and for development in the coastal zone adjacent to environmentally sensitive habitats identified in the Local Coastal Program, a minimum buffer of 100-feet from the edge of habitat shall be established.

BIOLOGICAL RESOURCES

Applicable LORS	Description
Local	
City of Huntington Beach Noise Ordinance (City of Huntington Beach Municipal Code Chapter 8.40)	Designates noise zones, establishes exterior noise standards, and defines exterior noise levels that are prohibited except under permit.
Natural Community Conservation Plan (NCCP) & Habitat Conservation Plan (HCP), County of Orange, Central and Coastal Subregion (1996)	The NCCP/HCP creates a multiple-species, multiple-habitat subregional Reserve System and implements a long-term adaptive management program that will protect coastal sage scrub and other habitats and species located within the habitat mosaic, while providing for economic uses that will meet the social and economic needs of the people of the subregion. Portions of the Reserve System in the HBEP area include Talbert Nature Preserve, Upper Newport Bay Ecological Reserve, and Upper Newport Bay Regional Park.

(Ex. 2000, pp. 4.2-2 – 4.2-3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

We first describe the potential occurrence of special-status vegetation and wildlife at or near the project site.

Vegetation

All project components will be within the existing HBGS boundary or at the off-site laydown area at the AGS. Both sites contain developed areas with disturbed habitat and ornamental landscaping. Construction activities at the HBEP site, including equipment laydown, will require the removal of weedy vegetation and some ornamental plantings. Thus, the evidence establishes that the project will not have significant impacts to native vegetation at either the power plant site or construction laydown area. (Ex. 2000, p. 4.2-23.)

However, special-status plants that inhabit the adjacent Magnolia and Upper Magnolia marshes could be indirectly impacted from runoff of sediment or toxic substances from the project site, dust, or spread of invasive weeds during construction and demolition. (Ex. 2000, p. 4.2-32.)

Special-Status Wildlife

While the applicant conducted general reconnaissance surveys of the project site in 2011 and 2012, no protocol or focused surveys were performed as the potential for special-status wildlife species to occur within the proposed project site and offsite laydown and parking areas is low. The following accounts focus on species with a moderate or high potential to occur on or near the site, and that could be affected by project construction and operation. (Ex. 2000, p. 4.2-23.)

Birds

The project region supports a wide range of both resident and migratory bird species. Although the site itself provides relatively little nesting and foraging habitat for native birds, the adjacent wetlands are regionally important for some bird species. Native birds, regardless of any additional conservation status at the local, state, or federal level, are afforded protection by the federal MBTA and California Fish and Game Code. (Ex. 2000, p. 4.2-23.)

Belding's Savannah Sparrow

The Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is a state-listed endangered species. No suitable habitat for the species occurs within the proposed HBEP, and no Belding's savannah sparrows were observed during the 2011 and 2012 surveys of the project site. (Ex. 2000, pp. 4.2-23- 4.2-24.)

California Brown Pelican

The California brown pelican (*Pelecanus occidentalis*) is a California state "fully protected species" pursuant to Fish and Game Code section 3511(b)(2). The open space and wetland habitats surrounding the site provide resting and loafing habitat for the species in the immediate vicinity of the site; however, there is no natural habitat on the HBEP site and the potential for occurrence on site is low. Additionally, California brown pelican is not expected to breed in adjacent marshes due to lack of typical breeding habitat. (Ex. 2000, p. 4.2-24.)

California Least Tern

The California least tern (*Sternula antillarum browni*) is federally and state-listed as endangered. There is no suitable nesting habitat for the California least tern at the HBEP site and it has very limited potential to occur on the site. However, the species would likely use the neighboring wetlands for foraging and loafing. (Ex. 2000, pp. 4.2-24 – 4.2-25.)

Light-footed Clapper Rail

The light-footed clapper rail (*Rallus longirostris levipes*) is federally and state-listed as endangered. The light-footed clapper rail has recently been documented breeding in the Brookhurst Marsh in the immediate vicinity of the HBEP site. It also breeds at many of the adjacent and nearby preserves and wetlands. In fact, the coastal wetland habitat in Magnolia Marsh, immediately adjacent to the proposed project site, was recently restored providing foraging habitat and eventually suitable breeding habitat as dense cordgrass and shallow water and mudflat foraging habitat are established within the marsh. Although it is not likely to occur on the HBEP site, the local breeding population

is likely to expand into the adjacent Magnolia Marsh over the next several years as the habitat continues to establish. (Ex. 2000, pp. 4.2-25 – 4.2-26.)

Western Snowy Plover

The western snowy plover (*Charadrius alexandrinus nivosus*) is a federally listed threatened species and a California Species of Concern. The western snowy plover has been reported approximately 0.6 mile from the proposed HBEP site utilizing the coastal salt marshes in the vicinity of the site for foraging and loafing. (Ex. 2000, pp. 4.2-26 – 4.2-27.)

Invertebrates

Wandering Skipper

The wandering skipper (*Panoquina errans*) is California Species Concern. This species has been observed in the coastal salt marshes in the immediate vicinity of the HBEP site. (Ex. 2000, p. 4.2-28.)

Mammals

Western Mastiff Bat

The western mastiff bat (*Eumops perotis californicus*) is a California Species of Special Concern. The species has a potential to forage over the open water and wetlands and around the site and has been observed Huntington Beach Central Park. (Ex. 2000, p. 4.2-28.)

Hoary Bat

The hoary bat (*Lasiurus cinereus*) does not have a specific conservation status at the federal, state, or local level, but it is tracked in the CDFW's CNDDDB. The hoary bat may forage over wetlands in the project region, and there is one historic record of this species from Newport Beach in the CNDDDB. (Ex. 2000, p. 4.2-28.)

Construction Impacts

General

Direct loss of small mammals, reptiles, and other less mobile species could occur during construction of the proposed project and demolition of existing facilities. This would result primarily from the use of vehicles and equipment at the HBEP site, which could collapse underground burrows or drive over animals. Additionally, construction and demolition activities and increased human presence may temporarily disrupt breeding or foraging activities of some common wildlife species. (Ex. 2000, p.4.2-31.)

Birds could nest in the ornamental plantings along the perimeter of the HBEP site. Additionally, some bird species adapted to disturbed environments could nest in equipment or other available substrate in the areas within the HBEP site. The compacted dirt and sparse vegetation associated with the barren areas of the HBEP provide nesting substrate for small songbirds and some ground-nesting species (e.g., killdeer). Many adult birds would flee from equipment during project construction. However, nestlings and eggs of ground-nesting birds or birds nesting on ornamental trees, other landscaping, or equipment and facilities would be vulnerable to impacts during project construction. (Ex. 2000, p. 4.2-31.)

Condition of Certification **BIO-7**² would require exclusion measures for open trenches (e.g., fencing or covering), inspection of trenches prior to resuming construction activities each day, and installation of escape ramps so that animals that fall in the trench could escape; these same measure would avoid and minimize impacts to nesting birds. Condition of Certification **BIO-8** would require a survey for birds in advance of work conducted between February 1 and August 31 (the primary nesting time); if a nest is identified as a result of the survey, a no-disturbance buffer must be established. (Ex. 2000, p. 4.2-31.)

We therefore impose Conditions of Certification **BIO-7** and **BIO-8**, to address potential impacts from construction and demolition of HBEP on animals, including nesting birds. With the imposition and implementation of Conditions of Certification **BIO-7** and **BIO-8**, the potential impacts on special-status species from proposed project construction and demolition activities would be mitigated to a level of “less than significant”. In addition, the imposition and implementation of Conditions of Certification **BIO-7** and **BIO-8** would ensure the project’s compliance with MBTA and California Fish and Game Code.

Because of the rich biodiversity in the area and the potential for special species animals to be impacted due to their proximity to the project, we impose Conditions of Certification **BIO-1 (Designated Biologist Selection)** and **BIO-3 (Biological Monitor Selection)**, that require the project owner to appoint a Designated Biologist and Biological Monitor(s) to ensure impact avoidance and minimization measures described below and protection of sensitive biological resources described above are implemented. We impose Condition of Certification **BIO-4** , describing the duties and authority of the Designated Biologist and Biological Monitor The Designated Biologist and/or Biological Monitor would be responsible, in part, for developing and implementing the Worker Environmental Awareness Program (WEAP) (see Condition of

² This Condition of Certification, as well as all other Conditions of Certification for Biological Resources and all other sections of this Decision are found in Appendix “A”.

Certification **BIO-5**), which is a mechanism for training the on-site project construction and maintenance personnel and as well as project site visitors on the how to protect sensitive biological resources and the consequences of non-compliance. We also impose Condition of Certification **BIO-6** , requiring project owner to prepare a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), which consolidating all project resource mitigation, monitoring, and compliance measures, as well as other information necessary to ensure compliance with, and effectiveness of, all impact avoidance, minimization, and mitigation measures. With the imposition and implementation of Conditions of Certification **BIO-1**, **BIO-3**, **BIO-4**, **BIO-5**, and **BIO-6**, we find the potential impacts of the project on special species during construction to be mitigated to a level of “less than significant”.

Noise

The issue of the potential for the project’s noise to impact special-status bird species in the Upper Magnolia Marsh and Magnolia Marsh was contested by Energy Commission staff and applicant.

Energy Commission staff recommended Condition of Certification **BIO-9** that would have required noise monitoring and noise management during the nesting season (February 1 to August 31). Staff premised this condition on the project’s contribution to increased ambient noise levels, particularly during pile-driving activities. For most areas of the project, Energy Commission staff initially suggested that the project owner be required to monitor construction and demolition noise. Any noise over 60 dBA ,or 8 dBA over ambient conditions, whichever was greater, would require additional noise mitigation measures. For an area known as M5, Condition of Certification **BIO-9** would require continuous noise monitoring during construction and demolition activities within 400 feet of the fenceline. (Ex. 2000, pp. 4.2-33 – 4.2-36.)

At the July 21, 2014, Energy Commission staff indicated that it would modify Condition of Certification **BIO-9**. The modifications would continue the requirement for noise monitoring, but would not treat the ambient noise and exceedance as thresholds for action. Instead, Condition of Certification **BIO-9** would now require a “meet and confer” process to determine whether the cause of the increase to ambient noise levels was the result of construction and demolition activities or due to weather, traffic, or other conditions unrelated to the HBEP. (07/21/14 RT 176:12-177:17.)

Applicant, on the other hand, contends that construction and demolition noises do not impact birds in the same way as humans, given bird anatomy and physiology. Applicant’s witness, Dr. Robert Dooling, testified that human hearing would be graphed as roughly bowl-shaped, with people hearing less well at low and high frequencies. Bird hearing, when graphed in connection with human hearing, appears as a “V” shape in

the middle of the bowl. The placement of the “V” in the graph is based on the frequencies at which birds vocalize. Construction noise occurs at low frequencies outside of the vocalization range of birds. Thus, concluded Dr. Dooling, birds are not as impacted by construction noise as humans. (07/21/14 RT 178:1-178:23; Ex. 1127.)

We find Dr. Dooling’s testimony to be persuasive. We thus decline to impose Condition of Certification **BIO-9**.

Lighting

HBEP construction and demolition activities would typically occur between 6:00 a.m. and 6:00 p.m. Monday through Saturday. Some limited construction activities, such as steam blow commissioning and continuous concrete pours, may require night lighting, that could disturb the nesting, foraging, or mating activities of wildlife in the adjacent marshes and make wildlife more visible to predators. Night lighting could also be disorienting to migratory birds and, if placed on tall structures, may increase the likelihood of collision. Although existing operations at the Huntington Beach Generating Station and traffic on Highway 1 provide an elevated ambient level of lighting to which local species have acclimated, potentially significant impacts to sensitive wildlife from increased night lighting could occur. (Ex. 2000, p. 4.2-36.)

If night construction were required, the applicant proposes to use task-specific lighting to the extent practicable, shield and direct lighting onsite, and use switched lighting where possible. We have imposed Condition of Certification **VIS-2** to require mitigations related to nighttime construction lighting.. With the imposition and implementation of Condition of Certification **VIS-2**, we find that the potential impacts to wildlife from construction night lighting have been mitigated to a level of “less than significant”.

Construction Dust

Active soil grading would occur over a four-month period within each unit after demolition. It is estimated that approximately one fourth of the project site would have bare soil exposure during the construction period. Disturbance of the soil’s surface caused by construction would result in increased wind erosion of the soil. Dust can have deleterious physiological effects on plants in the Huntington Beach Wetland complex, especially the adjacent Magnolia Marsh, and may affect their productivity and nutritional qualities. Additionally, the Los Cerritos wetlands are adjacent to the unpaved offsite laydown area, and dust generated at that site can impact plants in the wetlands. (Ex. 2000, p. 4.2-37.)

We have imposed Condition of Certification **SOIL&WATER-1** to require the project owner to use best management practices (BMPs) in coordination with an approved

Stormwater Pollution Prevention Plan (SWPPP) to minimize erosion at the site during HBEP construction and demolition activities.

We have also imposed Condition of Certification **AQ-SC3**, requiring specific measures to minimize fugitive dust, and Condition of Certification **AQ-SC4**, mandating construction monitoring for visible dust plumes and remediation measures in the event visible dust plumes are observed.

With imposition and implementation of Condition of Certification **SOIL&WATER-1**, **AQ-SC3**, and **AQ-SC4**, we find the impacts to adjacent wetlands from construction-related dust would be less than significant.

Invasive Weeds

The spread of invasive weeds destroys wildlife habitat and forage, threatens endangered species and native plants, and increases soil erosion and groundwater loss. Construction activities and soil disturbance could introduce new invasive weeds to wetlands adjacent to the HBEP site, and could further spread weeds already present in the project vicinity, resulting in overall habitat degradation. (Ex. 2000, pp. 4.2-37-4.2-38.)

To avoid and minimize the spread of existing weeds and the introduction of new ones, we impose Condition of Certification **BIO-7**, creating weed management measures. With imposition and implementation of Condition of Certification **BIO-7**, we find that potential impacts from introduction and spread of invasive weeds into sensitive habitat would be “less than significant”.

Stormwater Runoff

There are no creeks, drainages, wetlands, or other aquatic resources on the project site, offsite laydown area, or offsite parking areas. However, marshes adjacent to the proposed HBEP site could be impacted from stormwater runoff during construction and demolition if appropriate measures are not taken to prevent water from draining off site. The applicant has already included many design features into the HBEP to avoid, minimize, and mitigate potential impacts from construction and operational stormwater runoff. (Ex. 2000, pp. 4.2-38 – 4.2-39.)

We impose Condition of Certification **BIO-7** that would require standard BMPs from the project SWPPP to be implemented during all phases of the proposed project to control storm water runoff. BMPs include installation of silt fencing, berms, hay bales, and detention basins to control runoff from construction and demolition areas. Sediment barriers such as straw bales or silt fences would be installed to slow runoff and trap sediment. Only certified weed free materials will be used for erosion control. (Ex. 2000, p. 4.2-39.)

We also impose Condition of Certification **SOIL&WATER-1**, in which the project owner would be required to develop and implement a site-specific construction SWPPP. With imposition and implementation of Conditions of Certification **BIO-7** and **SOIL&WATER-1**, along with the project minimization measures listed above, project impacts to biological resources from stormwater runoff would be less than significant.

Groundwater Contamination

Groundwater was observed during exploratory borings for the project at a depth of approximately 14 feet, with historic high groundwater in the vicinity of the site at approximately 3 feet below the ground level. Groundwater underlying the project site has been documented to be impacted by metals, volatile organic compounds, and 1,4-dioxane from current and past industrial operations at this location. Therefore, marshes adjacent to the proposed HBEP may already be exposed to this contamination. Nonetheless, if groundwater were contaminated by HBEP construction activities (including spills of toxic materials from equipment leakage), adverse effects to vegetation and wildlife in the adjacent Magnolia and Newland Marshes could occur. (Ex. 2000, p. 4.2-39.)

We impose Condition of Certification **SOIL&WATER-1** to provide BMPS to avoid groundwater contamination from the construction of the site. With imposition and implementation of Condition of Certification **SOIL&WATER-1**, we find that the potential for adverse impacts to vegetation and wildlife in adjacent marshes from groundwater contamination would be less than significant.

Operation Impacts and Mitigation

Noise

The proposed HBEP is on an industrial site that is currently occupied by the Huntington Beach Generating Station and is near other industrial land uses and Highway 1. However, it is also located adjacent to sensitive biological resources including marshes supporting special-status birds, and the Wetlands and Wildlife Care Center, which houses rehabilitating wildlife in open air enclosures. The existing Huntington Beach Generating Station, urban development, and roadways in the area are existing sources of noise. Estimated operational noise from the HBEP would be between 65 and 47 dBA at Upper Magnolia and Magnolia marshes. (Ex. 2000, p. 4.2-40.)

We impose Condition of Certification **VIS-2** that would require an 8-foot-tall solid masonry wall to be constructed along the project boundaries adjacent to the marshes and the Wetlands and Wildlife Care Center, with additional vegetation screening to 12 to 15 feet high. This wall and landscaping would also help reduce operational noise impacts from the project on wildlife within Upper Magnolia and Magnolia marshes. We

find that, with imposition and implementation of Condition of Certification **VIS-2**, operational noise impacts from the project on wildlife within Upper Magnolia and Magnolia marshes would be less than significant

The operational noise level at the Wildlife Care Center is estimated to be between 67 and 69 dBA. The evidence shows the ambient noise level at the Center is estimated to be 72 dBA. (Ex. 2000, p. 4.2-34.)

Because the operational noise level is less than the ambient noise level, we find the operational noise impacts to rehabilitating wildlife at the Wildlife Care Center would be less than significant. In addition, we impose Condition of Certification **NOISE-2**, establishing a noise complaint registration and resolution process that can be used by the Wildlife Care Center personnel. With the imposition and implementation of Condition of Certification **NOISE-2**, we find any potential noise impacts to the Wildlife Care Center to be mitigated to a level of “less than significant”.

Lighting

The existing HBGS and vehicles traveling on Highway 1 provide an elevated ambient level of light to which local wildlife have adapted. However, excessively bright lighting at night could disturb the nesting, foraging, or mating activities of wildlife in the adjacent marsh and make wildlife more visible to predators. Also, night lighting could be disorienting to migratory birds and, if placed on tall structures, may increase the likelihood of collision, as discussed below. (Ex. 2000, p. 4.2- 41.)

We find that impacts to wildlife from proposed operation night lighting are potentially significant. To minimize backscatter of light to the sky and ensure that lighting does not obtrude beyond the project site, we have imposed Condition of Certification **VIS-3** that requires. With the imposition and implementation of Condition of Certification **VIS-3**, we find Impacts to wildlife from proposed operation night lighting are mitigated to a level of “less than significant”.

Avian Collision and Electrocutation

The marshes adjacent to the HBEP site are concentration areas for resident and migratory birds because of abundant foraging opportunities and proximity to the Pacific Ocean. This concentration of birds creates the potential for direct impacts through collision or electrocution with proposed HBEP facilities and appurtenant structures including transmission lines and transmission support structures. (Ex. 2000, p. 4.2-41-4.2-42.)

Bird collisions with power lines and structures generally occur when a power line or other structure transects a daily flight path. They typically happen when the structures are invisible (e.g., bare power lines or guy wires at night), deceptive (e.g., glazing and

reflective glare in windows), or confusing (e.g., light refraction or reflection from mist). Collisions generally increase in low light conditions or during inclement weather or strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger. (Ex. 2000, p. 4.2-41- 4.2-42.)

The project includes six 120 foot tall exhaust stacks. (Ex. 2000, p. 4.5-17.) The HBEP would connect to the regional electrical grid by using the existing switchyard, but will require new tie lines. The evidence shows that bird mortality is significantly lower at towers shorter than 350 feet. Because the HBEP exhaust stacks will be significantly shorter than 350 feet tall and shorter than the existing HBGS exhaust stack, the evidence concludes that they will pose a relatively low collision risk to migrating birds. (Ex. 2000, p. 4.2-41.) The evidence further establishes that it is not likely that bird mortality from collisions with either the stacks or the tie lines would significantly reduce the population of any bird species or that the reduction within any population would impair its function within the local ecosystem. (Ex. 2000, p. 4.2-41 - 4.2-42.)

Large perching birds, including those accorded state and/or federal protection, are susceptible to transmission line electrocution. Electrocution occurs when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. Because raptors and other large perching birds often perch on tall structures that offer views of potential prey, the design characteristics of transmission towers and poles are a major factor in raptor electrocutions. (*Id.*)

The new onsite generation tie lines, while posing a collision risk to birds, would be entirely within the developed site, near the existing transmission lines and tall generation facility structures. The new HBEP generation tie lines would not appreciably increase collision risk over baseline conditions. Additionally, the reduced height of the HBEP exhaust stacks would result in reduced collision potential. Nonetheless, because of the presence of listed species in the adjacent marshes, and the likelihood that they and other special-status birds fly over the project site en route to the marshes, we impose Condition of Certification **BIO-7**, requiring, in part, that the project owner construct the generation tie lines in accordance with Avian Power Line Interaction Committee (APLIC) standards to minimize or avoid collisions and electrocutions associated with the proposed project. With imposition and implementation of this component of Condition of Certification **BIO-7**, we find that the potential impact of collision and electrocution on avian species is mitigated to a level of “less than significant”.

Stormwater Runoff

Stormwater runoff from open areas on the proposed HBEP site during operation would be conveyed to an onsite detention basin before discharge to the Pacific Ocean via an

existing NPDES permitted outfall. Stormwater runoff would be conveyed in accordance with NPDES General Industrial Permit requirements. For more information on water quality impacts, please see the **SOIL AND WATER RESOURCES** section. (Ex. 2000, pp. 4.2-42- 4.2.43.)

There are no creeks, drainages, wetlands, or other aquatic resources on the site. However, the HBEP would be located near several marshlands and other sensitive habitats that could be impacted from stormwater runoff if appropriate measures are not taken to prevent water from draining off site. Toxic materials washed from the site into adjacent sensitive marsh lands can injure or kill wildlife and vegetation, and degrade habitat. (Ex. 2000, pp. 4.2-42- 4.2.43.)

While the Applicant has committed to best management practices (BMPs) to avoid, minimize, and mitigate potential impacts from construction and operational stormwater runoff, we include provisions in Condition of Certification **BIO-7** would require the project owner to implement BMPs from the project stormwater pollution prevention plan during all phases of the proposed project to control stormwater runoff. BMPs include installation of silt fencing, berms, hay bales, and detention basins to control runoff from the project area. Sediment barriers such as straw bales or silt fences would be installed to slow runoff and trap sediment where necessary. Only certified weed free materials will be used for erosion control. We have also imposed Condition of Certification **SOIL&WATER-4**, which would require the project owner to obtain a National Pollutant Discharge Elimination System permit for industrial waste and stormwater discharge to the Pacific Ocean through the existing outfall currently utilized by the Huntington Beach Generating Station. With imposition and implementation of Conditions of Certification **BIO-7** and **SOIL&WATER-4**, along with the applicant's commitment to the BMPs described above, potential project impacts from stormwater runoff during operation would be less than significant.

Air Emissions – Nitrogen Deposition

Nitrogen deposition is the input of nitrogen oxide (NO_x) and ammonia (NH₃) derived pollutants, primarily nitric acid (HNO₃), from the atmosphere to the biosphere. Nitrogen deposition sources are primarily vehicle and industrial emissions, including power plants. Mechanisms by which nitrogen deposition can lead to impacts on sensitive species include direct toxicity, changes in species composition among native plants, and enhancement of invasive species. The increased dominance and growth of invasive annual grasses is especially prevalent in low-biomass vegetation communities that are naturally nitrogen-limited. In the project vicinity, these communities include coastal dunes, chaparral, coastal sage scrub, oak woodlands, and vernal pools. (Ex. 2000, p. 4.2-43.)

The evidence establishes that the potential for the project to impact sensitive species and habitats through nitrogen deposition is less than significant, not need mitigation. (Ex. 2000, pp. 4.2-43 – 4.2-46.)

CUMULATIVE EFFECTS

Cumulative impacts correspond to a project's potential incremental effect, together with other closely related past, present, and reasonably foreseeable future projects whose impacts on biological resources may compound or increase the incremental effect of the project on such resources.

A project may result in a significant adverse cumulative effect if its effects contribute considerably to an overall cumulatively significant impact. There are currently proposed projects near the HBEP that may impact local biological resources, especially those in and near the Huntington Beach Wetlands Complex and other regional wetlands. These projects include the Poseidon Desalination Plant, Ascon Landfill Site, Newland Street widening project, P2-92 Sludge Dewatering and Odor Control, and the Brightwater Project. (Ex. 2000, p. 4.2-46.)

Due to ongoing operation of the Huntington Beach Generating Station, the proposed HBEP site is highly disturbed, is devoid of natural vegetation, and does not provide suitable habitat for special-status species. The Poseidon Desalination Plant is an unrelated project that is planned on a portion of the Huntington Beach Generating Station property. As with the HBEP, the Poseidon Desalination Plant would not be likely to have direct effects to special-status species or other biological resources, as special-status species are unlikely to occur on this industrial brownfield site. However, construction of the proposed project and the Poseidon project may overlap, and cumulative indirect effects to sensitive biological resources and special-status species could occur. These cumulative effects could include disruption from lighting, spread of invasive weeds, and stormwater runoff. Implementation of Conditions of Certification **BIO-1** through **BIO-7** would minimize or avoid construction-related impacts from lighting, spread of invasive weeds, and stormwater runoff from the HBEP. The evidence reflects that the city of Huntington Beach, the permitting agency for the Poseidon project, would implement similar measures. Once operational, the HBEP would not result in a substantial change from baseline conditions for most biological resources. Operational noise and nitrogen deposition impacts would not differ substantially from baseline conditions, and the HBEP's contribution to these would not be cumulatively considerable. (Ex. 2000, p. 4.2-46.)

Based on our conclusion above regarding bird auditory process, we find it unlikely that noise from the aforementioned projects would result in cumulative impacts to birds within the Upper Magnolia and Magnolia marshes.

In conclusion, the proposed HBEP would not contribute considerably to cumulative effects to biological resources.

FACILITY CLOSURE

When the HBEP is closed in the future, whether planned or unexpected, it must be done so that closure activities protect the environment and public health and safety. A closure plan would be prepared by the project owner prior to any planned closure. To address unanticipated facility closure, an “on-site contingency plan” would be developed by the project owner and approved by the Energy Commission compliance project manager (CPM). Facility closure requirements are discussed in more detail in the **GENERAL CONDITIONS** section. (Ex. 2000, p. 4.2-47.) We include facility closure mitigation measures in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) required by Condition of Certification **BIO-6**.

Upon decommissioning and permanent facility closure, reclamation would be necessary to prevent adverse effects such as contamination from hazardous substances, erosion, dust, invasion and spread of weeds, and hazards to wildlife from abandoned project infrastructure. Decommissioning activities are likely to cause similar indirect impacts to adjacent sensitive biological resources as described above for the construction and demolition phases of the proposed project. (Ex. 2000, p. 4.2-47.)

To ensure that public health and safety and the environment are protected during decommissioning, the applicant has committed to developing a decommissioning plan that would be submitted to the Energy Commission for approval prior to decommissioning. If possible, unused chemicals would be sold back to the suppliers or other purchasers or users. All equipment containing chemicals would be drained and shut down to ensure public health and safety and to protect the environment. All nonhazardous wastes would be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes would be disposed of according to all applicable LORS. (Ex. 2000, p. 4.2-47.)

We conclude that these potential effects of facility closure and decommissioning would be a significant impact absent mitigation. Conditions of certification similar to **BIO-1** through **BIO-8** would minimize or avoid these impacts to biological resources, and impacts to biological resources would be less than significant.

COMPLIANCE WITH LORS

The proposed project must comply with LORS that address state and federally listed species, as well as other sensitive biological resources. Applicable LORS are described in **Biological Resources Table 1**.

With implementation of the Conditions of Certification stated above, the proposed HBEP would comply with LORS pertaining to biological resources. For example, Condition of Certification **BIO-8** would require focused surveys for the state and federally listed endangered light-footed clapper rail in the adjacent Magnolia and Upper Magnolia marshes, and consultation with USFWS if found. If found, the consultation with USFWS would result in mitigation measures to avoid an incidental take of the clapper rail.

The proposed project would not result in loss or fill of wetlands or waters of the U.S or state, as there are none present on site. However, indirect impacts resulting from degradation of adjacent wetlands and coastal waters from construction runoff or operational discharges would be less than significant with implementation of Conditions of Certification **SOIL&WATER-1**, **SOIL&WATER-3**, **SOIL&WATER-4**, and **BIO-7**. These conditions would ensure compliance with the federal Clean Water Act, California Fish and Game Code 1600 et seq., California Coastal Act, and the Porter Cologne Water Quality Act by requiring control of runoff from the project area and operational discharges to be treated in accordance with NPDES permit requirements.

NOTEWORTHY PUBLIC BENEFITS

The HBEP would not use ocean water for cooling, as is currently in use for the Huntington Beach Generating Station. Therefore, the HBEP would eliminate the potential for entrainment of aquatic species. In addition, there would be a decrease in discharge via the existing NPDES-permitted outfall compared with current levels. For the site monthly maximum average ambient temperature conditions, discharge to the existing outfall would be approximately 29 gallons per minute or approximately 11.6 million gallons per year, compared to approximately 98 billion gallons per year from the existing Huntington Beach Generating Station. The reduction in outfall discharge into the Pacific Ocean and the elimination of impingement and entrainment of marine organisms are noteworthy environmental public benefits.

CALIFORNIA COASTAL COMMISSION COMMENTS

The California Coastal Commission submitted a report dated July 14, 2014, entitled, “Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **LAND USE** section of this Decision.

The July 2014 Report reflects the Coastal Commission’s concerns regarding the potential for the project to impact environmentally sensitive habitats, particularly Magnolia Marsh. Impacts on biological resources could occur due to groundwater runoff introducing contaminants into the marshland. The Coastal Commission also cited to the

potential for noise from the project to impact special-status species. (Ex. 4026, pp. 2-3, 8-16.)

Dewatering

As it relates to potential impacts on environmentally sensitive habitats from groundwater, including construction dewatering, the July 2014 Report recommends that we require AES to conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown expected from that dewatering. If the investigation shows potential drawdown effects to nearby environmentally sensitive habitats or wetland areas, project owner would then be required to identify and implement methods to avoid those effects. The methods to mitigate the potential effects of dewatering include installing sheet piles, slurry walls, or other similar barriers or conducting alternative dewatering methods that would avoid drawing down groundwater in these sensitive areas. The Coastal Commission also recommends that these structural mitigation methods be included on any relevant final design plans required pursuant to this Decision. (Ex. 4026, pp 13 – 14.)

We agree that these modifications to Condition of Certification **GEN-2** are appropriate and should be included in similar Conditions of Certification, such as **SOIL&WATER-1**, **SOIL&WATER-3**, **SOIL&WATER-4**, and **BIO-7**. With the imposition and implementation of these Conditions of Certification, we have provided additional feasible mitigation measures to avoid potential adverse dewatering impacts to adjacent habitat areas.

Noise Impacts

The July 2014 Report suggests that we apply thresholds utilized by the California Department of Transportation after consultation with the USWFS and the California Department of Fish & Wildlife. These thresholds identify hearing damage and masking (the prevention or reduction of communication among birds) and are even more sensitive than those provided by Energy Commission staff. The July 2014 Report concludes by requesting that we impose greater restrictions in Condition of Certification **BIO-9**. (Ex. 4026, pp. 13-14.)

As we explained above, the weight of the evidence in this proceeding is that bird hearing differs from that of human beings. Because of that, we concluded that the low frequencies typical of construction activities would not adversely impact wildlife species. We therefore decline to implement the changes to Condition of Certification **BIO-9**—a Condition that we declined to impose in the first instance.

PUBLIC COMMENTS

There were no public comments on biological resources.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The HBEP site is located on an existing power plant site.
2. The evidence contains an analysis of potential adverse impacts upon biological resources, including special-status species, which may potentially be affected by project construction and operation.
3. The project site does not contain suitable habitat for special status species.
4. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.
5. The project owner will implement a construction mitigation management plan by educating workers on habitat protection, and designating a qualified biologist and biological monitors with authority to halt activities to avoid impacts to sensitive resources.
6. The project owner will submit a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) incorporating all biological mitigation and compliance measures required by applicable local, state, and federal LORS.
7. Transmission lines will be designed to reduce the risk of avian collisions and electrocutions. Night time lighting will be designed to avoid disruption to wildlife.
8. The HBEP will be air-cooled and will not use once through cooling.

CONCLUSIONS OF LAW

1. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification below, as well as those in other portions of this Decision such as **VIS-4**, the HBEP will not result in significant direct, indirect, or cumulative impacts to biological resources.
2. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification, the HBEP will conform to all applicable laws, ordinances, regulations, and standards related to biological resources.

B. SOIL AND WATER RESOURCES

INTRODUCTION

This section focuses on the soil and water resources associated with the HBEP, 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.

This section of the Decision evaluates whether construction or operation would lead to accelerated wind or water erosion and sedimentation; whether the project would exacerbate flood conditions in the vicinity of the project; whether the project's water use would cause a substantial, or potentially substantial, adverse change in the quantity or quality of groundwater or surface water; whether project construction or operation would lead to degradation of surface or groundwater quality; and whether the project would comply with all applicable law, ordinances, regulations, and standards (LORS).

This topic was disputed and testimony was received at the evidentiary hearing held on August 6, 2014. (08/06/14 RT 27:16-53:15) The following exhibits also contain evidence regarding the Soil and Water Resources portion of the Decision: 1001, 1009, 1017, 1037, 1045, 1046, 1057, 1064, 1081, 1087, 1090, 1096, 1101, 1105, 1114, 1124, 1133, 1137, 2000, 2003, 4013, 4022, 4023, 4024, 4025, 4026, and 4035. (07/24/14 RT 29:13-31:25; 08/06/14 RT 36:8-36:18.)

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

The city of Huntington Beach would provide the proposed project with water during construction and operation through an existing 8-inch pipeline that supplies the HBGS. The city has provided a “will-serve” letter indicating that service is available. (Ex. 2000, p. 4.9-6.)

Construction would require potable water for dust suppression, with average use of 18,000 gallons per day (gpd) and around 24,000 gpd during hydrostatic testing and commissioning. Average annual water use for construction is not expected to exceed 22 acre-feet per year (AFY). During operations, HBEP would use approximately 115 AFY of water, with 1.2 AFY for domestic purpose of its 33 employees. The city has already provided the applicant a will-serve letter indicating that service is available. The city's water supply source is part groundwater and part imported surface water. (Ex. 2000, pp. 4.9-6 – 4.9-7.)

The project would collect wash-down, general facility, and equipment floor drains and sumps and route them to an oil/water separator system. Wastewater streams that are unlikely to contain oil and grease, such as the gas turbine inlet air evaporative cooler blowdown units and reverse osmosis reject, would bypass the oil/water separator. These process wastewaters would be discharged to the Pacific Ocean through the existing HBGS outfall. The average annual discharge is expected to be approximately 11.6 million gallons per year. (Ex. 2000, p. 4.9-7.)

Sanitary wastewater would use an existing connection to the city's sanitary sewer system with ultimate treatment by Orange County Sanitation District (OCSD) facilities. During operation, the project is expected to discharge approximately 0.16 million gallons per month; the city of Huntington Beach has provided a "will-serve letter", indicating the availability of this service. (Ex. 2000, p. 4.9-7.)

The project would use the existing on-site stormwater drainage system, where stormwater in contact with industrial equipment is routed through the oil/water separator system. There, the stormwater would mingle with process discharge water for ultimate discharge through the existing outfall to the Pacific Ocean. Other stormwater would be handled through on-site retention basins. (Ex. 2000, p. 4.9-7.)

The HBEP would be within the area regulated by the Santa Ana Regional Water Quality Control Board (RWQCB). The proposed site is located within the Lower Santa Ana River hydrologic area and is part of the East Coastal Plain hydrologic sub-area. The Santa Ana River runs north to south approximately 1.25 miles to the east of the project site. (Ex. 2000, p. 4.9-8.)

STANDARDS OF REVIEW/APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

Method and Threshold for Determining Significance

The Appendix G of the California Environmental Quality Act (CEQA)¹ Guidelines provides a checklist of questions that lead agencies typically address when assessing impacts related to hydrology, water quality, and utilities and service system requirements, including wastewater treatment and disposal, by answering the following questions:

- Would the project result in substantial erosion or loss of topsoil?

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as "CEQA".

- Would the project have the potential to cause contamination of soils or groundwater?
- Would the project violate any water quality standards or waste discharge requirements?
- Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?
- Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
- Would the project otherwise substantially degrade water quality?
- Would the project place housing within a 100-year flood² hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- Would the project be inundated by seiche or tsunami?
- Would the project result in substantial soil erosion or the loss of topsoil?

² The term "100-year flood" is used simplify the definition of a flood that statistically has a 1-percent chance of occurring in any given year. The "100-year flood" is an estimate of the long-term average recurrence interval but does not mean 100 years between each flood of greater or equal magnitude. Floods happen irregularly. (United States Geological Survey, "Floods: Recurrence Intervals and 100-year Floods" (<http://water.usgs.gov/edu/100yearflood.html>, accessed August 28, 2014).)

- Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- Would the project require the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Are there sufficient water supplies available to serve the project from existing entitlements and resources?
- Does the project have impacts that are individually limited, but cumulatively considerable?

(CEQA Guidelines, tit. 14, App. G, §§ VI, IX, XVII and XVIII.)

Laws, Ordinances, Regulations, and Standards

Applicable laws, ordinances, regulations and standards (LORS) for soils and water resources are found in **Soil & Water Table 1**. These LORS reflect a comprehensive regulatory system, with adopted standards and established practices designed to prevent or minimize adverse impacts to soil and water resources.

**Soil & Water Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	
Federal LORS	
Clean Water Act (33 U.S.C. Section 1257 et seq.)	The Clean Water Act (CWA) (33 USC § 1257 et seq.) requires states to set standards to protect water quality, which includes regulation of storm water and wastewater discharges during construction and operation of a facility. California established its regulations to comply with the CWA under the Porter-Cologne Water Quality Control Act.
State LORS	
California Constitution, Article X, section 2	The California Constitution 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.
California Water Code Sections 10910-10915	Requires public water systems to prepare water supply assessments (WSA) for certain defined development projects subject to the California Environmental Quality Act. Lead agencies determine, based on the WSA, whether protected water supplies will be sufficient to meet project demands along with the region’s reasonably foreseeable cumulative demand under average-normal-year, single-dry-year, and multiple-dry-year conditions.
The Porter-Cologne Water Quality Control Act of 1967, California Water Code Section 13000 et seq.	Requires the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) to adopt water quality criteria to protect state waters. Those regulations require that the RWQCBs issue waste discharge requirements (WDRs) specifying conditions for protection of water quality as applicable. Section 13000 also states that the state must be

	prepared to exercise its full power and jurisdiction to protect the quality of the waters of the state from degradation. Although Water Code 13000 et seq. is applicable in its entirety, the following specific sections are included as examples of applicable sections.
California Water Code Section 13240, 13241, 13242, 13243, & Water Quality Control Plan for the Santa Ana River Basin (Basin Plan)	The Basin Plan establishes water quality objectives that protect the beneficial uses of surface water and groundwater in the Region. The Basin Plan describes implementation measures and other controls designed to ensure compliance with statewide plans and policies and provide comprehensive water quality planning.
California Water Code Section 13260	This section requires filing, with the appropriate RWQCB, 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.
California Water Code Section 13550	Requires the use of recycled water for industrial purposes when available and when the quality and quantity of the recycled 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.
Water Recycling Act of 1991 (Water Code 13575 et. seq.)	The Water Recycling Act states that retail water suppliers, recycled water producers, and wholesalers, should promote the substitution of recycled water for potable and imported water in order to maximize the appropriate cost-effective use of recycled water in California.
Water Conservation Act of 2009 (Water Code 10608 et. seq.)	This 2009 legislative package requires a statewide 20% reduction in urban per capita water use by 2020. It requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified requirements, and requires agricultural water suppliers to prepare plans and implement efficient water management practices.
California Code of Regulations, Title 17	Requires prevention measures for backflow prevention and cross connections of potable and non-potable water lines.
California Code of Regulations, Title 20, Division 2, Chapter 3, Article 1	The regulations under Quarterly Fuel and Energy Reports (QFER) require power plant owners to periodically submit specific data to the California Energy Commission, including water supply and water discharge information.
SWRCB Order 2009-0009-DWQ	The SWRCB regulates storm water discharges associated with construction affecting areas greater than or equal to 1 acre to protect state waters. Under Order 2009-0009-DWQ, the SWRCB has issued a National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharges associated with construction activity. Projects can qualify under this permit if specific criteria are met and an acceptable Storm Water Pollution Prevention Plan (SWPPP) is prepared and implemented after notifying the SWRCB with a Notice of Intent.
SWRCB Order R8-2010-0062, NPDES No. CA0001163	This SWRCB permit regulates all operational water discharges from the Huntington Beach Energy Project site, including once-through cooling water, storm water, and industrial process water.
Santa Ana Regional Water Quality Control Board, Permit Order No. R8-2009-0003, NPDES NO. CAG998001	The Santa Ana Regional Water Quality Control Board issued this order to regulate discharges to surface waters that pose a <i>de minimis</i> threat.
Santa Ana Regional Water Quality Control Board, Permit Order No. R8-2007-0008, NPDES No. CAG918001	This order provides NPDES coverage for discharges of petroleum contaminated water in the Santa Ana region.

Local LORS	
City of Huntington Beach Municipal Code Chapters 14.12, "Fees, Rates and Deposits (Water) and 14.36, "Sewer System Service Connections, Fees, Charges, and Deposits"	Defines local fees for water and sewer connections and services.
State Policies and Guidance	
Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et seq.)	In the 2003 Integrated Energy Policy Report (IEPR), consistent with SWRCB Policy 75-58 and the Warren-Alquist Act, the Energy Commission clearly outlined the state policy with regards to water use by power plants, stating that the Energy Commission would approve the use of fresh water for cooling purposes only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound."
SWRCB Res. 2009-0011 (Recycled Water Policy)	This policy supports and promotes the use of recycled water as a means to achieve sustainable local water supplies and reduction of greenhouse gases. This policy encourages the beneficial use of recycled water over disposal of recycled water.
SWRCB Res. 75-58	The principal policy of the SWRCB that addresses siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling, adopted by the Board on June 19, 1976, by Resolution 75-58. This policy states that fresh inland waters should only be used for cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound.
SWRCB Res. 77-1	SWRCB Resolution 77-1 encourages and promotes recycled water use for non-potable purposes and use of recycled water to supplement existing surface and groundwater supplies.
SWRCB Res. 2010-0020	SWRCB's Resolution No. 2010-0020 and adoption of a Policy for the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Plan), requires all coastal power plants that utilize OTC to meet new performance requirements (Best Technology Available [BTA]) through a reduction in intake volume and velocity. The proposed project helps achieve the goals of the OTC Plan through dry-cooling and reduced discharge.

(Ex. 2000, pp. 4.9-4 – 4.9-5.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Soil Resources

We evaluate the potential impacts to soil resources including the effects of construction and operation activities that could result in erosion and downstream transportation of soils and the potential for contamination to soils and groundwater.

The factors that have the largest effect on soil loss are steep slopes, lack of vegetation, and erodible soils composed of large proportions of silt and fine sands. No steep slopes occur near the HBEP site. The majority of the project site is made up lands that fall within the Tidal Flats mapping unit. Tidal Flats have very slow permeability where water ponds on the surface. Developed soils within the Tidal Flat mapping unit (such as the HBEP site) are expected to have significant amounts of imported, compacted fill that

would not conform to the mapped soils conditions. The construction fill in areas developed for industrial uses are expected to have been graded nearly level (allowing for some slope to facilitate site drainage). Uncovered or excavated soils within the developed Tidal Flat areas have a relatively high potential for wind erosion. (Ex. 1001, §§ 5.11.1.3, 5.11.1.4 and Table 5.11-1, Ex. 2000, p. 5.2-25.)

We find that, given the nearly-level topography, low runoff potential, and poorly drained soil conditions, these soils have a slight water erosion hazard rating. Therefore, construction and operation of the HBEP would not result in erosion or downstream transportation of soils. Moreover, the evidence shows that existing regulatory programs in effect, as detailed in **Soil & Water Table 1**, prevent or minimize impacts from the Project. (Ex. 2000, p. 4.9-19.)

AIR QUALITY Conditions of Certification LIST that requiring control of fugitive dust will also mitigate the potential impact of erosion through wind to a level of “less than significant”.

We therefore conclude that the HBEP, with the imposition of Best Management Practices (BMPs) consistent with the relevant LORS, will mitigate potential impacts to soil resources.

Water Resources

Construction Water Discharges

If not managed properly, operations or construction activities at the HBEP would have the potential to contaminate stormwater runoff and thereby impact local surface waters, specifically the Pacific Ocean. Ocean waters in the vicinity are protected from degradation by the Santa Ana Basin Plan. (Ex. 2000, p. 4.9-10.)

The existing HBGS has a stormwater system that consists of two retention basins and oil/water separation sumps; HBEP will use this existing system during construction and operation to collect and process stormwater from the site. The system also includes an outfall pipe to the Pacific Ocean that operates under the requirements of the Order No. R8-2010-0062, National Pollution Discharge Elimination System (NPDES) No. CA0001 Regional Water Quality Control Board (RWQCB). Residual oil containing sludge would be disposed of as hazardous waste. Please see the **WASTE MANAGEMENT** section of this Decision for further information. (Ex. 2000, pp. 4.9-10- 4.9-11.)

In addition to the current outfall permit, the project owner would be required to obtain a construction storm water permit during construction and would be covered by project-specific Waste Discharge Requirements issued by the RWQCB for industrial storm water discharges that occur during operation. (Ex. 2000, p. 4.9-11.)

State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ requires that, because of the estimated amount of soil disturbance resulting from HBEP construction activities (approximately 26 acres) the project must be covered under the federal General Construction Permit. This Order No. 2009-0009-DWQ generally requires the project owner to prepare and implement a construction Storm Water Pollution Prevention Plan (SWPPP). The SWPPP specifies best management practices (BMPs) that will prevent all construction pollutants, including erosion products, from contacting storm water, eliminate or reduce non-stormwater discharges to waters of the Pacific Ocean, and require inspection and monitoring of BMPs. (Ex. 2000, pp. 4.9-10-4.9-11.)

To ensure compliance with SWRCB Order No. 2009-0009-DWQ, we impose Condition of Certification **Soil&Water-1** which requires the project owner to prepare and implement a SWPPP for the HBEP site and laydown areas.

The HBEP may use hydrostatic testing, which often involves the use of chemicals that have the potential to impact surface waters. If the proposed project performs hydrostatic testing of pipelines or other industrial equipment and chooses to discharge the effluent to the waters of the United States, an additional permit may be required by the RWQCB. Permit Order No. R8-2009-0003, NPDES NO. CAG998001 allows for the discharge of water that poses a *de minimis* threat to surface water quality. (Ex. 2000, pp. 4.9-11- 4.9-12.)

To mitigate any potential impacts of hydrostatic testing, we impose Condition of Certification **Soil&Water-2**, which would require the project owner to obtain the necessary permit from the RWQCB for hydrostatic discharges.

We conclude that, based on the evidence, the project will not create or contribute to runoff water that would exceed the capacity of existing facilities or provide a substantial additional source of polluted runoff because of the existing industrialization of the project site and its reuse of an existing, permitted outfall.

With the imposition and implementation of Conditions of Certification **Soil&Water-1** and **Soil&Water-2**, we find that the HBEP's potential to impact water quality from construction discharges is mitigated. We further find that imposition and implementation of Conditions of Certification **Soil&Water-1** and **Soil&Water-2** ensures that the HBEP will not violate water quality standards or waste discharge requirement from construction discharges. We further find that the project will not create or contribute to runoff water that would exceed the capacity of existing or provide a substantial additional source of polluted runoff because of the existing industrialization of the project site and its reuse of an existing, permitted outfall.

Contaminated Groundwater

The evidence establishes that the groundwater underlying the HBEP site is already impacted by metals, volatile organic compounds, and 1,4-dioxane. Groundwater is monitored by the Department of Toxic Substances Control as part of on-going subsurface investigations regarding former Southern California Edison operations at the site. The presence of groundwater contamination represents a *Recognized Environmental Condition* in connection with the site. Therefore, if groundwater dewatering is necessary, the HBEP presents the potential to affect on- and off-site water resources and sensitive environmental receptors because of the known presence of contaminated groundwater. (Ex. 2000, p. 4.9-12.)

We impose Condition of Certification **Soil&Water-3**, requiring the project owner to apply, under Order No. R8-2007-0008, NPDES No. CAG918001, for coverage for the discharge of petroleum contaminated water if the applicant engages in groundwater dewatering at the proposed site.

With the imposition and implementation of Condition of Certification **Soil&Water-3**, we find that the project's potential to affect on- and off-site water resources and sensitive environmental receptors from contaminated groundwater are reduced to a level of "less than significant".

Industrial Wastewater and Storm Water Discharge

During operation, the existing storm water collection system would be used to collect and process stormwater from the site. The oil-free stormwater from the process areas and from the pavement areas collected in the retention basins would be discharged to the Pacific Ocean via an existing outfall. The residual oil containing sludge would be collected via vacuum truck and disposed of as hazardous waste. See the **WASTE MANAGEMENT** section of this Decision for more details about waste streams. (Ex. 2000, p. 4.9-12.)

The proposed project may require a new NPDES permit for operations discharge that would replace its existing permit. The new permit would require the implementation of BMPs for both the project's industrial discharge and the project's operational storm water discharges to the Pacific Ocean, including pollutant source control, pollutant containment, a monitoring and sampling protocol, and a process to amend the permit based on monitoring and sampling results. (Ex. 2000, p. 4.9-13.)

The HBEP would discharge its industrial wastewater through the existing outfall under the requirements of the Order No. R8-2010-0062, NPDES No. CA0001163. The HBGS discharges approximately 98 billion gallons per year (300,750 AFY). HBEP, on the other hand, would discharge only about 11.6 million gallons (36 AFY) assuming 6,665 hours of annual operation. Therefore the new project would allow for a 300,714 AFY reduction

in discharge to the Pacific Ocean. This is a measureable reduction in pollutant loads sent to the ocean from the site. (Ex. 2000, p. 4.9-12.)

We impose Condition of Certification **Soil&Water-4** which would require the applicant to obtain a permit for project operation from the RWQCB, prior to beginning construction. With the imposition and implementation of Condition of Certification **Soil&Water-3**, we find that the project's potential impacts related to industrial wastewater and stormwater discharge during operations to be less than significant. We further find that there is sufficient capacity in the industrial wastewater and stormwater systems so that construction or expansion of drainage facilities is not required. Indeed, the project provides a considerable reduction in the amount of water being disposed of in the Pacific Ocean.

Sanitary Wastewater

The city of Huntington Beach provided the applicant a will-serve letter dated April 3, 2012, indicating its intent to provide the site sewerage service. The will-serve letter indicates that the sanitary wastewater generated by employees of the plant during operations can be handled with existing capacity in the municipal system. (Ex. 2000, p. 4.9-13.)

The city of Huntington Beach requires that users of its sanitary sewer system pay fees to connect to the municipal system. (Huntington Beach Municipal Code Chapter 14.36.) In order to ensure that the project has the ability to dispose of its sanitary wastewater, we impose Condition of Certification **Soil&Water-5**, requiring the project owner to pay sanitary sewer fees ordinarily assessed by the city of Huntington Beach. With the imposition of Condition of Certification **Soil&Water-5**, we find that any potential impacts of the HBEP related to the provision of sanitary wastewater treatment and disposal are mitigated to a level of less than significant.

Water Supply

Construction

Construction will require potable water for dust suppression. This water would be provided by the city of Huntington Beach, through the existing 8-inch pipe at the property. Average water use during construction would vary, with a predicted maximum of 24,000 gallons per day (gpd) during hydrostatic testing and commissioning. Commissioning is expected to take about 60 days. Average annual construction water use is not expected to exceed 22 AFY. (Ex. 2000, pp. 4.9-6, 4.9-13.)

To ensure that water used for construction is within the projected volumes, we impose Condition of Certification **Soil&Water-6**, requiring the applicant to report facility water use in compliance reports, and Condition of Certification **Soil&Water-7**, mandating the installation of water meters. With the imposition and implementation of Condition of

Certification **Soil&Water-6** and **Soil&Water-7**, construction-related impacts to local water supplies are “less than significant”.

Operational (Industrial and Domestic)

HBEP would use about 134 AFY of potable water provided by the city of Huntington Beach for industrial process water (i.e., non-cooling needs) and domestic use for its 33 operational employees. Domestic use for drinking, eye wash, safety showers, fire protection, and sanitary use will be about 1.2 AFY of the 134 AFY³. The project would access this water through an existing 8-inch-diameter city of Huntington Beach potable water line. The city of Huntington Beach’s will-serve letter indicates there is sufficient supply of potable water to accommodate the HBEP. (Ex. 2000, pp. 4.9-13 – 4.9-14.)

The evidence shows that, between 2004 and 2011, the existing HBGS uses 290 AFY of potable water while only operating at 15 percent of its maximum capacity. HBEP would thus use significantly less water than HBGS while generating more energy. As such, HBEP would create a net beneficial impact on local water supplies. (08/06/14 RT 29:16 – 30:20; Ex. 2000, pp. 4.9-13 – 4.9-14.)

In order to ensure that the HBEP has the ability to obtain potable water needed for industrial and domestic use during each project phase, we impose Condition of Certification **Soil&Water-5**, requiring the project owner to pay water connection fees ordinarily assessed by the city of Huntington Beach. With the imposition of Condition of Certification **Soil&Water-5**, we find that any potential impacts of the HBEP related to the provision of potable water are mitigated to a level of less than significant.

To ensure that project water use is within the projected volumes analyzed herein, we impose Condition of Certification **Soil&Water-6**, requiring the applicant to report facility water use in compliance reports, and Condition of Certification **Soil&Water-7**, mandating the installation of water meters. With the imposition and implementation of Conditions of Certification **Soil&Water-6** and **Soil&Water-7**, operational impacts to local water supplies are “less than significant”.

Water Supply Alternatives

In discussing water supply alternatives, we recognize that in the 2003 Integrated Energy Policy Report (IEPR), the Energy Commission stated that use of fresh water for power plant cooling would be approved only where alternative water supply sources and alternative cooling technologies are shown to be “environmentally undesirable” or

³ In the AFC, the project applicant estimated that it would use about 115 AFY. During analysis of the AFC, Energy Commission staff calculated that 134 AFY was the appropriate maximum annual water use estimate. We use the higher figure to analyze impacts and availability of other source of water to serve the HBEP. (Ex. 2000, pp. 4.9-13 - 4.19-14.)

“economically unsound.” The IEPR is consistent with SWRCB Policy 75-58, which also requires that we find alternative water supply sources and alternative cooling technologies to be “environmentally undesirable” or “economically unsound” before we approve the use of fresh water for power plant cooling.

Although the HBEP will not be using water for steam cycle cooling through its proposed use of an air cooled condenser, the potential for the project to use alternate water sources, such as recycled or reclaimed water, for non-cooling industrial needs, was the subject of testimony at the evidentiary hearing held on August 6, 2014. (08/06/14 RT 27:16 – 53:16.) In specific, intervenor Monica Rudman contends that there was insufficient analysis of the potential to use treated wastewater. (Ex. 4013, pp. 11-13.)

Energy Commission staff and the Applicant presented evidence relating to the investigation of finding sources of water other than potable to be used for non-cooling operational processes. (08/06/14 RT 37:14-42:2; Ex. 2000, pp. 4.9-15 - 4.9-16.) The evidence discloses that OCSD and Orange County Water District (OCWD) were contacted about providing treated effluent to the HBEP. These discussions identified two plants as potential sources for treated wastewater: Plant #1 and Plant #2. (08/06/14 RT 34:17- 34:19, 48:17-49:20; Ex. 2000, p. 4.9-15.)

The first issue with using treated wastewater is the quality of the wastewater available. According to OCWD and OCSD, no tertiary water is available to HBEP. (08/06/14 RT 34:17-34:19, 48:17-49:16.) All available tertiary treated water is in use for the Green Acres Project or for underground injection to prevent salt water intrusion. If tertiary recycled water was made available to HBEP, redirection of those flows would decrease the amount of water injected that adds to the same aquifers being used for municipal supply. In this way, water removed from the injection program may indirectly reduce the local municipal supply. (Ex. 2000, p. 4.9-15.)

In analyzing the potential to use secondary treated effluent, Matthew Franck, applicant’s water expert witness, testified that additional treatment would be required in order to use secondary level wastewater with the equipment proposed to be used at the HBEP. The treatment facilities had an estimated cost of \$8.8 million for construction and an annual operations and maintenance expense of \$286,000—over and above the cost of obtaining the wastewater from OCSD. This additional treatment would add \$1.6 million per year to the cost of electricity produced at the plant. Space considerations on-site also limit the feasibility of creating such a treatment facility. Finally, treatment would increase discharge flows, require additional treatment before discharge to the ocean, and would require disinfection with chlorine. (08/06/14 RT 44:20-45:23, Ex. 1101, pp. 8-9.)

The next issue for using treated wastewater for non-cooling needs at the plant is the need for conveyance of that wastewater from the treatment plant to the HBEP site. The

Urban Water Management Plan for the city of Huntington Beach states that OCWD does not have recycled water infrastructure necessary to support the direct use of recycled water in the city. (Ex. 1110, p. 9-5.) A new pipeline would thus be required to convey treated effluent from either treatment plant to the HBEP site. One pipeline alignment would require two miles of new pipeline along Hamilton Avenue. The city of Huntington Beach has indicated that Hamilton Avenue has no available space for additional underground utilities in the right-of-way because of existing uses and its prior commitments to the proposed Poseidon Desalination Plant. Though the future of the Poseidon facility is uncertain, it would be risky to assume that utility space would be available along Hamilton Avenue. (08/06/14 RT 34:1–34:6; Ex. 2000, p. 4.9-15.) Therefore, we consider this route for conveyance to be infeasible.

The second conveyance option would require installation of 1.5 miles of pipeline along the Pacific Coast Highway (Highway 1). Caltrans, which has jurisdiction over PCH, would not comment on the feasibility of placing a pipeline along the proposed route. However, the applicant has indicated that the cost of installing the pipeline and necessary treatment facilities would be \$21.8 million and would require \$1.7 million annually for maintenance. (Ex. 2000, p. 4.9-15.)

We find that the option of using treated wastewater for the facility's non-cooling needs has been adequately analyzed. The project is unable to obtain tertiary treated reclaimed water. Even if such water were available, it would restrict use of that water for recharging groundwater aquifers and indirectly impact municipal sources that draw from groundwater.

Without access to tertiary treated wastewater, the HBEP would be required to construct an independent treatment facility on site that would increase the costs of producing energy. Such treatment would also introduce additional environmental concerns relating to the volume and treatment of the wastewater before disposal to the Pacific Ocean. We therefore find that the use of treated wastewater is both environmentally undesirable and economically unsound.

Flooding

The Federal Emergency Management Agency (FEMA) Huntington Beach Flood Insurance Rate Map (FIRM) (06059C0263J) incorporates current site and levee elevations. The HBEP is located in Zone X and protected from the 100-year flood by an accredited levee along the Huntington Beach Channel. **Soil & Water Figure 1** illustrates the local flood zones near the HBEP. (Ex. 2000, p. 4.9-16.)

Soil & Water Figure 1 Huntington Beach Flood Zones (FEMA, 2009)



Source: Ex. 2000, Soil & Water Figure 2

Projected sea-level rise has the potential to reduce the effectiveness of local flood control measures by increasing the base level (sea-level) of the Huntington Beach Channel. The local protection from inundation is projected to be reduced up to 30 centimeters (1.0 feet) by 2030 and 61 centimeters (2.0 feet) by 2050 (relative to 2000 levels). A significant rise in local sea water levels would also raise groundwater levels, decrease relative flood protection currently afforded by levees along the Huntington Beach Channel, and raise the fluvial base level, thereby potentially increasing the rate and extent of flooding. (Ex. 2000, p. 4.9-16.)

The proposed project would have final grades between 12 to 16 feet above sea level. The Huntington Beach Channel and surrounding communities are at about eight feet above sea-level. These elevations suggest that the site has four to eight feet of elevation separation from the surrounding area. The current projections of sea-level rise could reduce the separation between the site and the flood channel elevation by up to 2.0 feet by 2050. However, if the minimum separation between the site and the surrounding floodplain is reduced from four feet to two foot there would still be a level of flood protection. (Ex. 2000, p. 4.9-16.)

We therefore find that the HBEP is within the 100-year flood plain and is thus not susceptible to flooding, even if sea level rise were to occur.

Storm Surge and Wave Run-up

Storm surge is usually defined by increased ocean water levels that occur during storms. Much like precipitation events and rainfall runoff events, storm surge events can be assigned recurrence intervals, e.g. 10-year, 100-year, etc. Storms may result in ocean water level increases that create increased threats of local flooding for shoreline property. Coastal ecosystems, development, and public access are most at risk from short term storm events, including the confluence of large waves, storm surges, and high astronomical tides during a strong El Niño climatic event. (Ex. 2000, p. 4.9-17.)

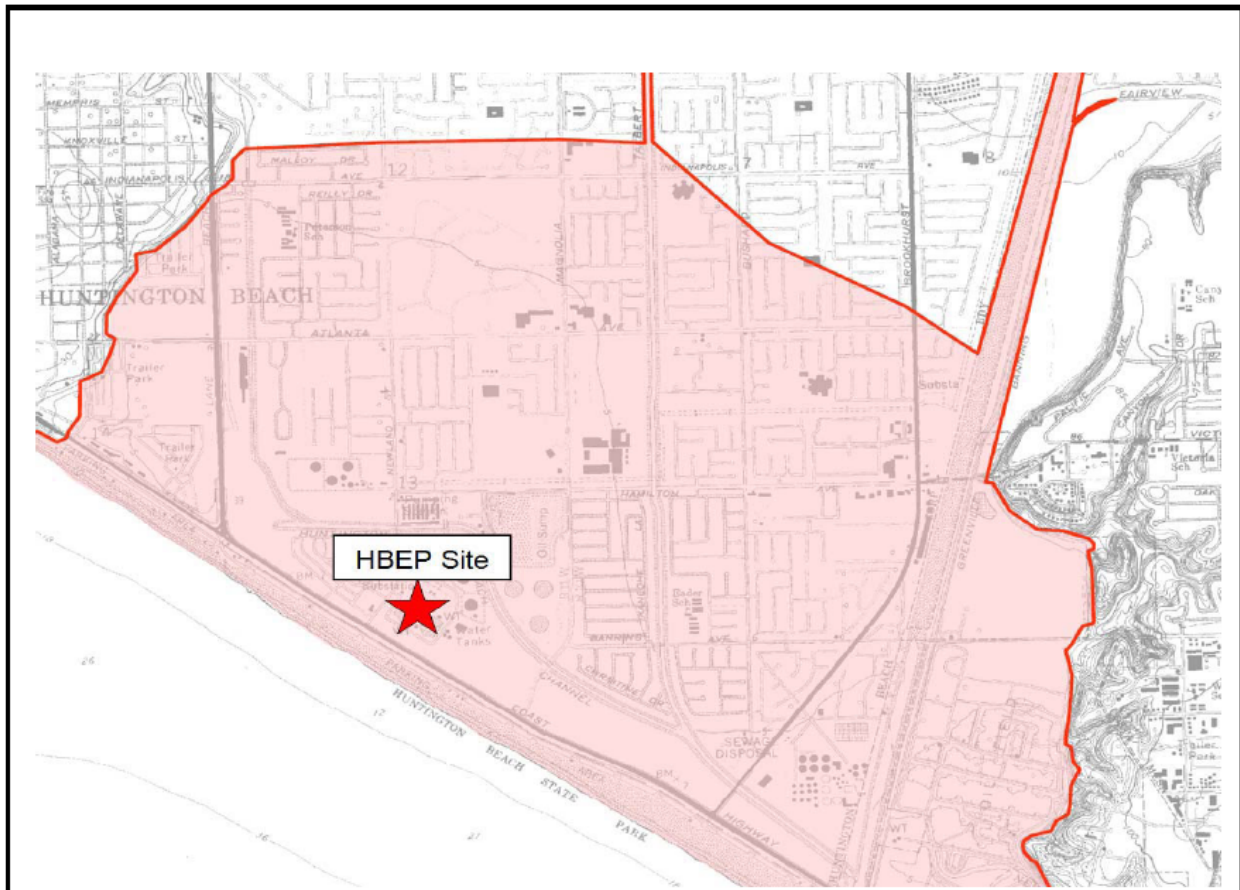
Storm surge is taken into account when FEMA conducts coastal zone flood analyses. The Base Flood Elevations (BFEs) are the sum of storm surge, wave run-up, and tidal effects. The FEMA FIRM for Huntington Beach shows that the coastal zone immediately adjacent to the proposed project is classified, Zone VE, 14-feet. Though this base flood elevation is as high as the Huntington Beach site, it does not have enough lateral reach to get to the project site. The site is also higher than the surrounding areas which would provide additional buffering capacity against coastal inundation. (Ex. 2000, p. 4.9-18.)

We therefore find that there are no potential significant impacts to the HBEP from storm surge or wave run-up.

Tsunami and Seiche

The proposed site is within the zone identified by California Emergency Management Agency (CEMA) as a tsunami inundation zone. **Soil & Water Figure 2** shows the tsunami inundation zone near HBEP. The proposed site is within a six square-mile area that could be impacted by a tsunami. However, the site is above the expected inundation elevation and therefore tsunami events are not expected to be a threat, as described in the **GEOLOGY & PALEONTOLOGY** section. (Ex. 2000, p. 4.9-18.)

Soil & Water Figure 2
Tsunami Inundation Zone (CEMA, 2009)



Source: Ex. 2000, Soil & Water Figure 3

A more detailed discussion of hazards posed by tsunami and seiche is included in the **GEOLOGY & PALEONTOLOGY** section of this Decision.

We therefore hold that HBEP would not be inundated by tsunami or seiche.

CUMULATIVE IMPACTS AND MITIGATION

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental

effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of reasonably foreseeable future projects (California Code of Regulations, Title 14, section 15130). The construction and operation activities of the various projects could potentially overlap and result in cumulative impacts to the same resource(s).

Potable Water Supply

The proposed project would create a net benefit for local water supplies, when considered cumulatively with any other project. The proposed project would result in a net reduction of 175 AFY. When considered cumulatively this 175 AFY benefit could be reduced by other new users, but would still be considered a net benefit to the local water supply system.

Water Quality

When considered cumulatively with other proposed projects, the HBEP would result in a net cumulative benefit in waste discharges to the Pacific Ocean. Industrial discharge flows would decrease because of decreased plant water use. Permitted average discharge flows are 0.2 mgd for HBGS, whereas the HBEP discharges would average 0.04 mgd, which would be a 0.16 mgd reduction in water volume and a similarly proportional decrease in pollutant loading. When considered cumulatively this 0.16 mgd benefit could be reduced by other new users, but would still be considered a net benefit by reducing pollutant loads to the Pacific Ocean. The proposed project would also allow for the elimination of the existing once-through cooling discharge, permitted at 507 mgd, and a decrease in the ultimate discharge temperature to the ocean. Both of these factors would benefit water quality.

COMPLIANCE WITH LORS

In addition to reviewing the project's potential environmental impacts, we must also review each of the proposed project's elements for compliance with LORS and state policies.

Stormwater

Clean Water Act

As discussed above, we imposed Conditions of Certification **Soil&Water-1** and **Soil&Water-2**. These conditions would ensure that the appropriate National Pollution Discharge Elimination System (NPDES) permits are obtained by the applicant. With the imposition and implementation of Conditions of Certification **Soil&Water-1** and **Soil&Water-2**, we find the HBEP will be in compliance with the Clean Water Act.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act creates plans and policies to protect the beneficial uses of waters of the state through implementation of federal, state, and local requirements for management of storm water discharges and pollution prevention, compliance with local grading and erosion control requirements, and compliance with local onsite wastewater system requirements. (Ex. 2000, pp. 4.9-4 – 4.9-5.)

SWRCB Policy 75-58 and Energy Commission—Integrated Energy Policy Report (IEPR)-Power Plant Water Use and Wastewater Discharge Policy

One set of policies under Porter-Cologne applicable to this proceeding are the IEPR and State Water Resources Control Board Resolution 75-58. These policies have two separate but related applications by requiring us to authorize use of fresh water for power plant cooling only where alternative sources or alternative cooling technologies are found to be “environmentally undesirable” or “economically unsound”. Second, these policies work to protect water resources from power plant water discharges by requiring zero liquid discharge technologies unless such technologies are shown to be “environmentally undesirable” or “economically unsound”. (Ex. 2000, p. 4.9-18.) In this instance, the proposed HBEP is compliant with SWRCB Policy 75-58 and the Commission’s IEPR policy, since an air cooled condenser would be used for power plant cooling during the steam cycle.

Use of treated effluent as a cooling alternative to the HBEP’s proposed air cooled condenser is “environmentally undesirable” or “economically unsound” from the water availability and water conveyance perspectives.

Looking at the “No Project Alternative”, a wet cooling scenario for the existing HBGS was considered. We found that used of treated effluent for cooling purposes at the existing HBGS was infeasible.

The HBEP does not propose to use zero liquid discharge technologies. However, the HBEP significantly reduces the amount of water discharged from the project site to the Pacific Ocean. The current HBGS discharges approximately 300,750 AFY; the HBEP would reduce this to 36 AFY. (Ex. 2000, pp. 4.9-12, 4.9-20.)

We therefore find that the project’s stormwater and wastewater management would be in compliance with the intent of the water policy because it eliminates the significant portion of process wastewater discharge from the facility.

Water Supply Assessment

In 2001, the California Legislature enacted SB 610 (codified as Water Code sections 10910 et seq.) that requires lead agencies under CEQA to obtain a “water supply

assessment” (WSA) from the local public water supplier. The WSA is required whenever the lead agency will approve a “project”, as defined by the statutory scheme.

“Project” is defined in SB 610 as:

- (1) A proposed residential development of more than 500 dwelling units.
- (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- (4) A proposed hotel or motel, or both, having more than 500 rooms.
- (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(Water Code §10912, subd. (a).)

SB 610 would thus apply to the HBEP if the plant would house more than 1,000 persons, occupy more than 40 acres of land, or have more than 650,000 square feet of floor area. (Cal. Water Code §10912, subd. (a)(5).) If the HBEP does not meet that definition, we must still consider whether the project would demand an amount of water equivalent to that required by a 500 dwelling unit project. (Cal. Water Code §10912, subd. (a)(7).)

The HBEP will have 33 employees during operation, requiring 1.2 AFY of water. (Ex. 2000, 4.9-13 – 4.9-14.) The facility will occupy approximately 28.6 acres of land. (Ex. 2000, p. 4.5-3.) Finally, the facility is anticipated to have approximately 18,200 square feet of floor area. (Ex. 2000, p. 4.8-24.) As a consequence, we find that HBEP would not require the preparation of a WSA under Section 10912, subdivision (a)(5), because it will not house more than 1,000 people, will not occupy more than 40 acres, and will not have more than 650,000 square feet of floor area.

We must next determine whether the project will use as much water as a 500 dwelling unit project. The city of Huntington Beach has prepared an Urban Water Management Plan (UWMP). The UWMP, updated every five years, looks at present water usage and predicts future demands on the water system to ensure that water will be available to serve the needs of customers during normal, single dry or multiple dry years. (Ex. 1101, p. 1.1.) The 2010 Huntington Beach UWMP recognizes that residential dwelling units

have a demand factor of 169 gallons per day. (Ex. 1101, p. 5-9.) Using the demand factor from the local water supplier and multiplying by 500, the HBEP would have to require 84,500 gpd, or 95 AFY, in order to trigger the need for a WSA under subdivision (a)(7) of section 10912. Demand from the project is 134 AFY, thus meeting the threshold requirement for a WSA under subsection (a)(7).

Under the Warren-Alquist Act, the Energy Commission has plenary authority over power plant certification and stands in the stead of other regulatory agencies in providing all necessary permits and analyses. (Pub. Res. Code § 25500.) We thus prepare our own WSA for the HBEP.

A WSA must identify existing water supply entitlement, water rights, or water service contracts for the water to be used by a proposed project; it must also include a description of the quantities of water received in prior years. (Water Code §10910, subdiv. (d).) When the water demand for a project was included in the UWMP, the WSA may use the information from an UWMP. (Water Code §10910, subdiv. (c)(2).)

If the proposed project will utilize groundwater, the WSA must include a review of the UWMP and a description of the groundwater basin or basins and whether there has been adjudication of those groundwater rights. (Water Code §10910, subdiv. (f).) If the groundwater basin has not been adjudicated, the WSA must address whether the basin is overdrafted or will become overdrafted if present conditions continue. (Water Code §10910, subdiv. (f)(2).)

As previously stated, the city of Huntington Beach, the HBEP public water supplier, has a current UWMP. That document includes all of the information necessary to prepare a WSA. Water sources and supplies are detailed. (Ex. 1110, pp. 2-1 – 2-14.) Water for HBEP would come from both surface water and groundwater supplies and is included in the water demands of the UWMP. (Exs. 1001, App. 5.15A; 1110, §4.) The city of Huntington Beach obtains groundwater from a basin that, while not adjudicated, is managed by a regional body, OCWD. (Ex. 1110, p. 4-1; 4-16 – 4-18.) The city's UWMP predicts that water demand will remain relatively constant for the next 25 years due to minimal growth within the city. (Ex. 1110, p. 4-25.) Thus, we can conclude that the basin will not be overdrafted if present conditions continue.

Given the information in the UWMP, along with the analysis above regarding the source and uses of water by HBEP, we find that there is sufficient water to serve the project and that the impacts of obtaining the water from the sources have been adequately analyzed.

Local LORS

We have imposed Conditions of Certification **Soil&Water- 5** and **Soil&Water- 7**, requiring the project owner to pay all necessary connection and usage fees to the city of

Huntington Beach, as well as to install water meters. We find that with the imposition and implementation of Conditions of Certification **Soil&Water- 5** and **Soil&Water- 7**, we find that HBEP is consistent with the local LORS of the City of Huntington Beach regarding water supply and sanitary sewer disposal services.

COASTAL COMMISSION REPORT

In July 2014, the Coastal Commission submitted a report entitled, “ Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **LAND USE** section of this Decision.

The Coastal Commission has proposed modifications to Condition of Certification **Soil&Water- 8**, requiring the project owner to submit proof of protection from a 500-year flood event, instead of the current requirement for 100-year flood event protection. (Ex. 4026, pp. 3, 20-21.)

We concur that a power facility, such as the HBEP, is a critical piece of infrastructure. However, as pointed out in the July 2014 Report, there are no data to support the expected levels of inundation that may be caused by the 500 year event. In addition, the Coastal Commission has not cited, nor have we found, any LORS requiring the Commission to look beyond the 100-year flood event in analyzing a project. Indeed, CEQA sets its impact threshold at the 100-year flood event level. (CEQA Guidelines, tit. 14, App. G, §IX, subd. h.)

We thus decline to implement the changes to Condition of Certification **Soil&Water- 8** suggested by the Coastal Commission in the July 2014 Report.

NOTEWORTHY PUBLIC BENEFITS

- The proposed project would reduce the amount of water used relative to baseline conditions. The reduction in water use would be about 175 AFY, which would result in additional supplies for other beneficial uses.
- The proposed project would result in a 0.16 MGD reduction in industrial waste water volume to the Pacific Ocean and a similarly proportional decrease in pollutant loading.
- The proposed project would result in the elimination of once-through cooling from the existing Huntington Beach Generating System. SWRCB’s Resolution No. 2010-0020 and adoption of a Policy for the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Plan), requires all coastal power plants that utilize OTC to meet new performance requirements (Best Technology Available [BTA]) through a reduction in intake volume and velocity. The proposed project helps achieve the goals of the OTC Plan through dry-cooling and reduced discharge.

PUBLIC COMMENTS

No agency or public comments were received regarding Soil and Water Resources.

FINDINGS OF FACT

1. Turbine exhaust from the proposed project's power plant would be air-cooled so that the HBEP would not use potable water for cooling purposes.
2. Tertiary treated wastewater is not available to the project for non-cooling industrial and miscellaneous needs.
3. Use of secondary treated wastewater for non-cooling needs is constrained by the expense of providing both conveyance to the HBEP site and treatment of the wastewater on-site.
4. The HBEP would reduce the volume of industrial wastewater disposed of in the Pacific Ocean by 300,714 AFY.
5. The reduction in volume of wastewater disposed to the Pacific Ocean would create a similarly proportional decrease in pollutant loading.
6. Given the HBEP's proposed use of an air cooled condenser, the project would eliminate the current use of once through cooling at the existing Huntington Beach Generating System.
7. The HBEP site is largely disturbed and would thus not create significant soil disturbance.
8. Some topsoil loss is expected during construction and operation from wind and water erosion.
9. Condition of Certification **Soil&Water-1** requires the project owner to comply with the Clean Water Act and obtain discharge permits from the State Water Resources Control Board for construction and would mitigate the project's impacts to waters of the United States from construction to a level of "less than significant".
10. Condition of Certification **Soil&Water-2**, requires the proposed project to comply with Permit Order No. R8-2009-0003, NPDES NO. CAG998001, if hydrostatic waters are discharged to waters of the US.
11. Condition of Certification **Soil&Water-3** requires the project owner to obtain discharge permits from the State Water Resources Control Board for operation, in compliance with the Clean Water Act.

12. Groundwater at the site is relatively shallow and potentially contaminated by petroleum products. Trench and foundation excavations would likely encounter shallow groundwater and dewatering would be required for stabilization.
13. Condition of Certification **Soil&Water-4** mandates that the project owner obtain a National Pollutant Discharge Elimination System permit for industrial waste and stormwater discharge to the Pacific Ocean consistent with Order No. R8-2010-0062, NPDES No. CA0001163.
14. Condition of Certification **Soil&Water-5**, requires the project owner to pay connection fees to the city of Huntington Beach, as required by Chapters 14.12 and 14.36 of the Huntington Beach Municipal Code.
15. Condition of Certification **Soil&Water-6** requires the project owner to limit the proposed project's water use to 134 acre-feet per year and require regular water use reporting to the Commission.
16. Condition of Certification **Soil&Water-7** compels the project owner to install water meters.
17. The proposed project is located in Zone X and protected from the one-percent annual chance of flooding (100-year flood) by an accredited levee along the Huntington Beach Channel.
18. The HBEP is located in an area of increased risk of flooding due to relative sea level rise.
19. The HBEP site is sufficiently above sea level to ensure power plant reliability, even with expected sea level rise.
20. The proposed project would include use of air cooled condensers for cooling of the steam cycle.
21. HBEP would use at maximum of 134 AFY of potable water for process and domestic use during a dry year.
22. The city of Huntington Beach will provide the necessary potable water for the project through an existing point of connection to the city's water system.
23. The water to be provided to the HBEP will consist of a mix of groundwater and surface water.
24. The groundwater basin is not now in a condition of overdraft nor is it predicted to be in the future.

CONCLUSIONS OF LAW

1. The Conditions of Certification listed below ensure that project activities will not cause significant adverse direct, indirect, or cumulative impacts to soil and water resources.
2. Compliance with the Conditions of Certification specified below will ensure that the HBEP conforms to all applicable laws, ordinances, regulations, and standards related to soil and water resources as described in the evidentiary record.
3. The use of secondary treated wastewater is economically unsound because of the increased expense of providing conveyance from the wastewater treatment plant to the power plant.
4. The use of secondary treated wastewater is economically unsound because of the increased expense of additional treatment required to make it acceptable for use by HBEP.
5. The use of secondary treated wastewater is environmentally undesirable because the additional treatment required to make the wastewater usable would introduce additional environmental concerns relating to the volume and chemical constituents of wastewater disposed of to the Pacific Ocean.

C. CULTURAL RESOURCES

INTRODUCTION

Cultural resources such as artifacts, structures, or land modifications reflect the history of human development. Places that are important to Native Americans or other ethnic groups are considered valuable cultural resources. This topic reviews the structural and cultural evidence of human development in the project vicinity where cultural resources could be disturbed by excavation and construction. Federal and state laws require a project developer such as the Applicant to implement mitigation measures to minimize potential adverse impacts to significant cultural resources.

Both the Energy Commission staff and the Applicant presented evidence on this topic. (07/21/14 RT 216:9-252:5; Exs.1001, 1003, 1004, 1007, 1017, 1022, 1090, 1096, 1111, 1128, 1132, 1133, 1137, 1141, 2000, and 2003.)

SETTING

For general project description, including location of the facility and the equipment to be installed, please see the “PROJECT DESCRIPTION AND PURPOSE” section of this Decision (Section II, above).

STANDARDS OF REVIEW/LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

California Environmental Quality Act ¹(CEQA)

Under CEQA, a resource is generally considered to be historically significant if it meets the criteria for listing in the California Register of Historical Resources (CRHR). In addition to being at least 45 years old, a resource must meet at least one (and may meet more than one) of the following four criteria:

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;
 - Criterion 2, is associated with the lives of persons significant in our past;
 - Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values;
- or

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq.,(Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as “CEQA”.

- Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, §4852[c]).

In addition to historical resources, archaeological artifacts, objects, or sites can meet CEQA's definition of a unique archaeological resource, even if it does not qualify as a historical resource (Guidelines, tit. 14, §15064.5[(c)(3).) Archaeological artifacts, objects, or sites are considered unique archaeological resources if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person."

(Pub. Resources Code §21083.2(g).)

To determine whether a proposed project may have a significant effect on the cultural resources environment, we analyze the proposed project's potential to cause a substantial adverse change in the significance of historical or unique archaeological resources. The significance of an impact depends on:

- The cultural resource affected;
- The nature of the resource's historical significance;
- How the resource's historical significance is manifested physically and perceptually;
- Appraisals of those aspects of the resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- How much the impact will change those integrity appraisals.

The CEQA Guidelines define a substantial adverse change as "physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." (Guidelines, tit. 14, §15064.5(b)(1),

Laws, Ordinances, Regulations, and Standards

Cultural Resources Table 1 contains the applicable LORS against which we analyze compliance in the area of cultural resources.

**Cultural Resources Table 1
Laws, Ordinances, Regulations, and Standards**

Applicable LORS	Description
State	
Pub. Resources Code, §§5097.98(b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until s/he confers with the Native American Heritage Commission (NAHC)-identified Most Likely Descendents (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.
Pub. Resources Code, §5097.99	Prohibits the acquisition, possession, sale, or dissection with malice or wantonness of Native American remains or artifacts taken from a Native American grave or cairn.
Health and Safety Code, §7050.5	This code prohibits the disturbance or removal of human remains found outside a cemetery. It also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Civil Code, §1798.24	Provides for non-disclosure of confidential information that may otherwise lead to harm of the human subject divulging confidential information
Government Code, §6250.10—California Public Records Act	Provides for non-disclosure of records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency.
City of Huntington Beach 1996 General Plan (HB 1996), Community Development Chapter, Historic and Cultural Resources Element, Table HCR-2.	The Historic Resources Board (HRB) for the city of Huntington Beach has generated a list of local landmarks considered to be of significant importance to the local community as shown on Tables HCR-1 and HCR-2. HRB is an advisory board to the City Council on historical issues and programs.

(Ex. 2000, pp 4.3-3 – 4.3-4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The term “cultural resource” is used broadly to include the several categories of resources, such as: prehistoric and historic archaeological sites, buildings, structures, objects, and historic districts. The evidence establishes that, throughout California, significant archaeological and historic artifacts related to Native American cultures, Spanish and Mexican settlements, Chinese immigrant labor, and/or American frontier

settlements may be discovered during project construction activities. However, sensitivity for archaeological and historic resources within the HBEP project area is considered low due to extensive excavation, grading, and deposition of fill that occurred during construction and operation of the Huntington Beach Generating Station (HBGS) since the 1950's. The HBGS is located on fill materials that covered over former estuary or marsh lands associated with the Santa Ana River. (Ex. 2000, p. 4.3-1 et seq.)

Direct impacts to archaeological resources can occur as a result of surface and subsurface ground disturbance of known or unknown deposits during construction activities. Direct impacts to historic structures can occur when they are moved to make way for new construction, when vibrations or emissions from new construction impair the stability or degrade the materials of historic structures, or when new buildings are stylistically incompatible with historic structures. New construction can also cause indirect impacts to archaeological or historic resources such as soil erosion, inadvertent damage, and/or vandalism due to increased public access to the resources. (Ex. 2000, p. 4.3-49.)

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. (Ex. 2000, p. 4.3-49.)

Finally, ground disturbance has the potential to directly affect archaeological resources, unidentified at this time. The potential significance of such impacts will vary, based on the setting in which the construction activities take place, taking into account prior ground disturbance activities on the site. (Ex. 2000, p. 4.3-49.)

Methodology

We use a project area of analysis (PAA) to define the geographic area in which the HBEP has the potential to affect cultural resources. For HBEP, the PAA includes (a) the proposed project site, (b) an architectural study area set approximately one parcel beyond the proposed project site, (c) the onsite construction parking area, (d) four off-site construction parking areas, and (e) the off-site construction laydown area at the Alamitos Generating Station in Long Beach, Los Angeles County. (Ex. 2000, p. 4.3-30.)

Archival Research

Archival research included records searches at the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS). The CHRIS files revealed that 36 previous cultural resource analyses have been conducted in the

records search area; of these, twelve cultural resource studies have previously been conducted within or adjacent to the PAA. (Ex. 2000, p. 4.3-33.)

Only one of the twelve previous resource studies identified a potential cultural resource in the PAA: the Edison Plant, currently known as the HBGS. (Ex. 2000, pp. 4.3-35 - 4.3-36.).

In addition to the CHRIS records searches, Energy Commission staff conducted additional research at the California History Room of the California State Library in Sacramento as well as online sources, and examined the reports contained in the applicant's records searches to improve the historic map coverage acquired by the applicant. (Ex. 2000, p.4.3-37.)

Field Surveys

Applicant's archaeologists conducted pedestrian surveys of the proposed project site, offsite construction laydown area, and on- and offsite construction parking areas. Due to previous ground disturbance from activity in the area, the archaeologists believe that any remaining cultural resources have already been destroyed. (Ex. 2000, p. 4.3-45.)

California Native American Heritage Commission

The Governor's Executive Order B-10-11, executed on September 19, 2011, directs state agencies to engage in meaningful consultation with California Indian Tribes on matters that may affect tribal communities. The Energy Commission Siting Regulations require applicants to contact the Native American Heritage Commission (NAHC) for information on Native American sacred sites and a list of Native Americans interested in the project vicinity, then notify the Native Americans on the NAHC's list about the project and include: a copy of all correspondence with the NAHC and Native Americans, any written responses received, and a written summary of any oral responses in the AFC. (Ex. 2000, p. 4.3-38.)

The NAHC maintains records and maps of traditional resource sites and sacred lands located throughout the state. The NAHC's records did not identify the presence of traditional resource sites or sacred lands in the project area. . In November 2012, the Energy Commission sent letters to Native American groups and individuals identified by the NAHC. Follow-up phone calls were made by staff on December 4, 2012. Subsequent email and phone conversations also occurred on December 6, 7, and 12, 2012. Staff received comments from the Juaneño Band of Mission Indians, Acjachemen Nation, and Gabrielino-Tongva Tribe that tribal monitors should be required during project ground disturbing activities. A letter dated June 2, 2013 from the United Coalition to Protect Panhe stated concern that the project site is culturally sensitive and

encouraged staff to promote avoidance as mitigation for any cultural resource discoveries connected with the proposed project. (Ex. 2000, p. 4.3-39.)

To ensure that qualified Native American monitors will have access to observe ground disturbance at the HBEP site, Condition of Certification **CUL-3**² requires the project owner to include Native American participation in the Cultural Resources Monitoring and Mitigation Plan. Condition of Certification **CUL-6** requires the project owner to obtain Native American monitors from the NAHC to observe ground disturbance in areas where excavations may extend into native soils.

Construction Related Impacts

Historic Built-Environment Resources

For the HBEP, one potential built environment historical resource has been identified: the HBGS itself. This resource may meet the criteria set forth above based on its inclusion (under the name the Edison Plant) in a list of local landmarks created by the city of Huntington Beach in 1986. However, since that time, the city of Huntington Beach has commissioned other studies and reports on the historical significance of the HBGS that conclude it is not eligible for inclusion on the National Register of Historic Places, the CRHR, or any other local listing. (Ex. 2000, p. 4.3-46.)

The evidence establishes that although the HBGS is listed as a local resource, the property has not been determined to be historically significant under the Office of Historic Preservation procedures and requirements. Nor is the information to follow such procedures readily available. (Ex. 2000, pp. 4.3-46-4.3-47.)

Based on the evidence in the record, we find that the HBGS/Edison Plant is not a historical resource under CEQA. As it is not an historic resource, we further find that it complies with the local LORS regarding avoidance of impacts to historical built-environment resources.

Archaeological Resources on the Surface

The evidence establishes that there have been no archaeological resources identified on the surface of the HBEP or the laydown area located at the Alamitos Generating Station. (Ex. 2000, pp. 4.3-44 – 4.3-45, 4.3-47, 4.3-49.)

Therefore, we find that construction and operation of the proposed project would not result in direct impacts on this class of cultural resource.

² The Conditions of Certification for Cultural Resources, as well as all other sections of this Decision, are found in Appendix "A".

Buried Archaeological Resources

No positive identification of buried prehistoric or historic archaeological resources has been made at the proposed HBEP site.³ Moreover, the testimony on this topic indicated that the majority of the site was greatly disturbed by construction and operation of the HBGS, so that the likelihood of impact to buried archaeological resources is low. (07/21/14 RT 234:16-238-5; Ex. 2000, p. 4.3-50.)

Nonetheless, in order to mitigate for potential losses to any undisturbed resources, we impose Conditions of Certification **CUL-1** through **CUL-8** to ensure that unknown archaeological deposits are properly identified and treated and that project-related impacts are reduced to insignificance. These Conditions require the project owner to implement a Cultural Resources Monitoring and Mitigation Plan and to employ a Cultural Resources Specialist (CRS) to monitor construction locations where ground excavation activities occur. The Conditions also include a worker education program and procedures for halting construction in the event of an archaeological discovery.

The issues remaining to be determined are the construction and excavation areas for which a CRS is required and whether the CRS is required to be present throughout excavation. (07/21/14 RT 238:15:2-239:18.)

At the evidence establishes that the staff and Applicant have agreed that the following areas have the potential to contain undisturbed native soils and, therefore, the potential for undiscovered archaeological resources:

- Block 1 STG foundation
- Block 1, two generator step-up transformers west of gas compression building
- Block 1 gas compression building foundation
- Relocated gas metering station
- Ammonia tank spill containment basin
- Ammonia tank refilling station
- Perimeter grounding cable
- Grounding rods
- No monitoring shall be required for the following project components:
- Block 2 CCGT/HRSG foundation slab

³ The construction laydown yard at AGS does not require ground disturbance, so it is not discussed in this portion of the Decision.

- Block 2, two easternmost transformer foundations
- Block 2 STG foundation

(Ex. 2003.)

The issue remaining for use whether a full-time CRS is required on the site. As set forth above, the potential for the site to contain undisturbed remains is very low. In addition, the area involved is small, approximately 60x55 foot area of excavation, where native soils are anticipated at 7/12 feet below ground level. (07/21/14 RT 242:5-243:12.) Against that backdrop, we agree with Applicant that a full-time CRS is not necessary to monitor the excavation at the HBEP. We thus impose Condition of Certification **CUL-6** to require that the CRS be available when the first one-third of ground disturbance occurs. If no resources are found at that time, the CRS will be available on a “will call” basis. If resources are found, the CRS will be required to be present at all times during ground disturbance activities. In this way, we tailor the mitigation of the impacts to undiscovered resources to the realities of the minimal likelihood of their discovery.

Ethnographic Resources

No ethnographic resources have been identified in the PAA. The proposed project site has slight potential to contain buried ethnographic resources, although these would most likely constitute archaeological resources. While earth-moving could result in significant impacts on ethnographic resources (should any be encountered), the Conditions of Certification **CUL-1** through **CUL-8** reduce these potential impacts to a less-than-significant level.

Indirect Impacts

The evidence does not establish any indirect impacts on any cultural resources that qualify as historical resources or unique archaeological resources under CEQA. (Ex. 2000, p. 4.3-52.) We therefore find that no mitigation for indirect impacts is necessary for the HBEP.

Operational Impacts and Mitigation

During operation of the proposed project, if a leak should develop in buried pipelines within the project site, repair of the buried utility could damage previously unidentified, subsurface archaeological resources in areas unaffected by the original excavation. The measures proposed above and below for the mitigation of impacts to previously unknown archaeological resources found during construction would also mitigate impacts that occur during operation-phase repairs.

CUMULATIVE IMPACTS AND MITIGATION

Cumulative impacts correspond to a project's potential incremental effect, together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project on such resources. The evidentiary record indicates that potential cumulative impacts to cultural resources due to construction of the HBEP are not significant. (Ex. 2000, p. 4.3-20.)

The Conditions of Certification, found in Appendix "A" to this Decision, are intended to mitigate any impacts to cultural resources related to HBEP's construction activities. As a result, any incremental effect of the HBEP in conjunction with other projects will not be cumulatively considerable.

COMPLIANCE WITH LORS

We conclude that the proposed project would comply with the LORS listed in **Cultural Resources Table 1**. The evidence has not established the existence of any cultural resources in the PAA that would qualify as historical or unique archaeological resources for the purposes of CEQA. Although impacts to as-yet-identified archaeological resources that qualify as historical or unique under CEQA could occur during construction and operation of the proposed project, Conditions of Certification **CUL-1** through **CUL-8** are expected to mitigate such impacts to less-than-significant levels. These conditions establish the necessary protocols to constructively handle the issues identified in **Cultural Resources Table 1**: the treatment of human remains discoveries during project-related ground disturbance (**CUL-1 – CUL-8**), prevention of unauthorized removal of Native American remains or artifacts from a Native American grave or cairn (**CUL-1 – CUL-8**), and non-disclosure of records pertaining to ethnographic consultants or archaeological site information (**CUL-3**). Since the preponderance of evidence suggests that the Edison Plant is not an historical resource for the purposes of CEQA, we do not anticipate a conflict between demolition of the plant and listing on the local register.

NOTEWORTHY PUBLIC BENEFITS

The AFC does not identify any noteworthy public benefits concerning cultural resources (AES 2012a:1-13, 1-14). Although the proposed facility's shorter stacks would create a less obtrusive profile, staff has not identified historical resources in the PAA that the proposed project would affect visually. Therefore, staff concludes that the proposed HBEP's reduced height would not constitute a noteworthy public benefit in the area of cultural resources.

PUBLIC COMMENT

There were no public comments on cultural resources.

FINDINGS OF FACT

1. The project owner will implement a Cultural Resources Monitoring and Mitigation Plan to protect known and unknown resources, including avoidance, physical demarcation and protection, worker education, archeological monitoring, Native American monitoring, authority of monitor to halt construction, and the filing of a periodic Cultural Resources Report.
2. There is no evidence that the HBEP's incremental effect on cultural resources in conjunction with other projects in the area will be cumulatively considerable.
3. The HBGS is not a historical resource for the purpose of CEQA nor does its demolition create a conflict with local LORS.

CONCLUSIONS OF LAW

1. The Commission therefore concludes that implementation of the Conditions of Certification in Appendix "A" to this Decision will ensure that the project conforms with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the this Decision.
2. Implementation of the mitigation measures described in the evidentiary record and contained in the Conditions of Certification, below, will ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

B. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This topic summarizes the project's potential exposure to geologic hazards, as well as its potential impacts on geologic, mineralogical, and paleontological resources.

The evidence evaluates whether the project site is located in an area where geologic hazards, such as faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, or seiches, could damage project structures or injure occupants of the facility. The evidence also discusses whether project construction or operation could potentially result in adverse impacts on geologic or mineralogical resources in the area. Finally, the evidence examines whether paleontological resources, such as fossilized remains or trace remnants of prehistoric plants or animals, could be present at the site and, if so, whether the project's potential impacts on these resources will be adequately mitigated.

This topic was disputed and testimony was received at the evidentiary hearing held on August 6, 2014. (08/06/14 RT 69:12-79:4.) The following exhibits also contain evidence regarding the Geological and Paleontological Resources portion of the Decision: 1001, 1006, 1120, 1132, 1133, 1137, 2000, 2003, 4022, 4023, 4024, 4025, 4026, and 4033. (07/24/14 RT 29:13-31:25.)

SETTING

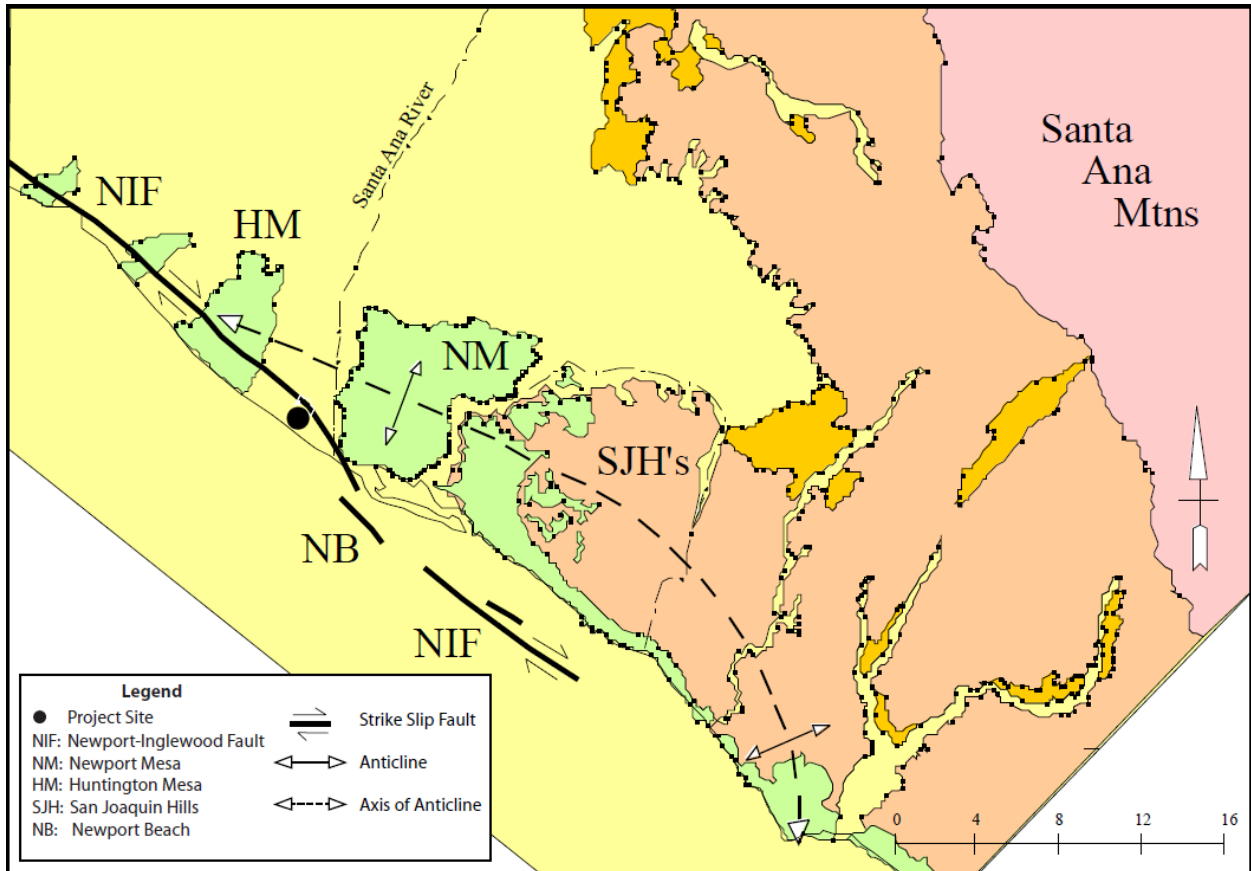
*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

The project site is located near the Pacific Ocean on a coastal plain near the boundary of the Southwest Block and Central Block, near the Newport-Inglewood fault zone. The project site is also part of the West Newport Oil Field, which itself is part of the larger Huntington Beach oil field. The entire area, home of significant oil fields, is referred to as the Newport-Inglewood Structural Trend and its associated fault zone. Also associated with the Newport-Inglewood fault is the San Joaquin Blind Thrust. The San Joaquin Blind Thrust has uplifted marine sediments forming the Newport and the Huntington Mesas. The San Joaquin Blind Thrust likely diverted the Santa Ana River from maintaining its flow through Newport Bay, causing it to be deflected around the westward plunging nose of the anticline westerly to the area around Fountain Valley. (Ex. 2000, p. 5.2-5.)

After being deflected from its course flowing through Newport Bay, the Santa Ana River cut its way through the lower, slower uplifting western limb of the anticline forming a

water gap in the area between Huntington Beach and Newport Beach. The project site is located within this gap, locally referred to as the Santa Ana Gap. **Geology and Paleontology - Figure 1** shows the location of the Santa Ana Gap. (Ex. 2000, p. 5.2-5.)

Geology and Paleontology - Figure 1
San Joaquin Hills Anticline



Source: Ex. 2000, Geology and Paleontology Figure 3.

The coastal area has undergone several episodes of marine inundation and subsequent marine regression over the past 54 million years resulting in the deposition of a thick sequence of marine and non-marine sedimentary rocks on the uplifted and eroded high-relief basement terrain. The soils near the project site are marked by these coastal alluvial deposits (gravels, sands, and silts), aeolian deposits (well sorted fine grain windblown sand), estuarine deposits (organic silts and clays) and near shore marine deposits (predominantly well sorted medium grain sand). (Ex. 2000, p. 5.2-5.)

As part of the preliminary on-site geotechnical investigation, two small diameter exploratory borings were drilled and four Cone Penetration Tests (CPT) were driven in the east central portion of the site. The borings were drilled to maximum depths of 51.5

feet below ground surface (bgs) and the CPTs were driven to final depths of approximately 75.5 feet. (Ex. 2000, p. 5.2-6.)

In reviewing the results of the borings, groundwater was observed at a depth of 14 feet bgs. The evidence shows that, due to the adjacency of the ocean and porous nature of the underlying sediments, it is likely that site soils are saturated with sea water at an elevation equal to mean sea level. Freshwater is less dense than sea water. Therefore, assuming a blanket of freshwater is “floating” on the seawater saturated soils, it is likely that the stabilized groundwater elevation is at least 2 feet above mean sea level. Fluctuations in the depth to groundwater are likely to occur due to tidal variations, seasonal precipitation, variation in surface elevations, groundwater pumping (dewatering), and projected sea level rise. (Ex. 2000, p. 5.2-6.)

One plugged oil and gas well is located on the southwest portion of the site, between HBGS Units 1 and 2 and the retention ponds. Several off-site wells are also present, including two plugged oil and gas wells located just east of the north and east fuel oil storage tanks to the north of the project. An abandoned dry hole is also present off site just north of the north fuel oil storage tank. (Ex. 2000, p. 5.2-24.)

STANDARDS OF REVIEW/APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

Method and Threshold for Determining Significance

The California Environmental Quality Act (CEQA)¹ guidelines, Appendix G, provide a checklist of questions that lead agencies typically address when assessing impacts related to geologic and mineralogical resources and effects of geologic hazards.

- Will the project, directly or indirectly, destroy either a unique paleontological resource or site, or a unique geological feature?
- Will the project expose persons or structures to geologic hazards?
- What are the project’s effects on mineral resources?

(CEQA Guidelines, tit. 14, App. G, §§V, VI, XI.)

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as “CEQA”.

To assess potential impacts on unique geologic features and effects on mineral resources, we must first determine if geologic and mineralogical resources exist in the area. In determining whether the project may impact paleontological resources, we review existing paleontological information, including records and reviewed the information obtained from the applicant's requested records searches from the San Bernardino County Museum and other institutions. (Ex. 2000, p. 5.2-7.)

The California Building Standards Code (CBSC) and California Building Code (CBC) 2013 provide geotechnical and geological investigation and design guidelines, which engineers must follow when designing a facility. As a result, the criterion used to assess the significance of a geologic hazard includes evaluating each hazard's potential impact on the design, construction, and operation of the proposed facility. Geologic hazards include faulting and seismicity, liquefaction, dynamic compaction, hydro compaction, subsidence, expansive soils, landslides, tsunamis, seiches, and others as may be dictated by site-specific conditions. (Ex. 2000, p. 5.2-7.)

Laws, Ordinances, Regulations and Standards (LORS)

Applicable laws, ordinances, regulations and standards (LORS) for both geologic hazards and resources and mineralogical and paleontological resources are listed in **Geology and Paleontology Table 1**.

**Geology and Paleontology Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
State	
California Building Code (2013)	The California Building Code (CBC 2013) includes a series of standards that are used in project investigation, design, and construction (including seismicity, grading and erosion control). The CBC has adopted provisions in the International Building Code (IBC, 2012).
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), sections 2621-2630	Mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings.
Seismic Hazards Mapping Act, PRC sections 2690–2699	Maps identify areas (zones) that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches. Requires a geotechnical report be prepared that defines and delineates any seismic hazard prior to approval of a project located in a seismic hazard zone.
CEQA Guidelines, Title 14, California Code of Regulations, Section 15000, Appendix G, Environmental Checklist Form	Asks if project would have impacts on paleontological and mineralogical resources or a unique geological feature.
Local	
City of Huntington Beach General Plan	The city of Huntington Beach addresses public safety and welfare in the city through implementation of its General Plan and compliance with applicable local regulations stated in the Huntington Beach Municipal Code. General Plan policies specific to geologic, soil, and seismic hazards are listed in the Environmental Hazards Element.
Huntington Beach Municipal Code, Chapter 17.04, “Buildings Code” and Chapter 17.05, “Grading and Excavation Code”	The city adopted the 2010 CBC as the basis for its own Building Code. Site development work in the city is required to comply with the Huntington Beach Building Code and all State requirements pertaining to geologic, soil, and seismic hazards. The Grading and Excavation Code sets forth rules and regulations to control excavation, grading, earthwork and site improvement construction, and establishes administrative requirements for issuance of permits and approvals of plans and inspection of grading and construction.
Huntington Beach Municipal Code, Section 17.04.084, “Methane District Regulations” Methane District Building Permit Requirements	The city of Huntington Beach strongly recommends not building structures over or near abandoned oil well or petroleum contaminated soil. Huntington Beach Municipal Code section 17.04.084 requires testing of and provides mitigation measures for areas proposed for construction where methane gas in soil is likely to occur.

Standards	
Society for Vertebrate Paleontology (SVP), 2010	The “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources developed by the SVP, a national organization of professional scientists. The measures were adopted in October 1995, and revised in 2010 following adoption of the Paleontological Resources Preservation Act (PRPA) of 2009.
Bureau of Land Management (BLM) Instructional Memorandum 20008-009	Provides up-to-date methodologies for assessing paleontological sensitivity and management guidelines for paleontological resources on lands managed by the Bureau of Land Management. While not required on non-BLM lands, the methodologies are useful for all paleontological studies, regardless of land ownership.

(Ex. 2000, pp. 5.2-2 – 5.2-3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Unique Paleontological Resources or Sites

The project site has been an active power plant site for several decades; it is therefore mantled with approximately five to ten feet of artificial fill material and covered by concrete or blacktop. The evidence shows that a reconnaissance-level field survey was conducted that did not disclose any native sediment at the surface. In addition, a review of several databases, as well as a literature review, disclosed that no fossils have been found within 1 mile of the project site. (Ex. 2000, pp. 5.2-9 – 5.2-10.)

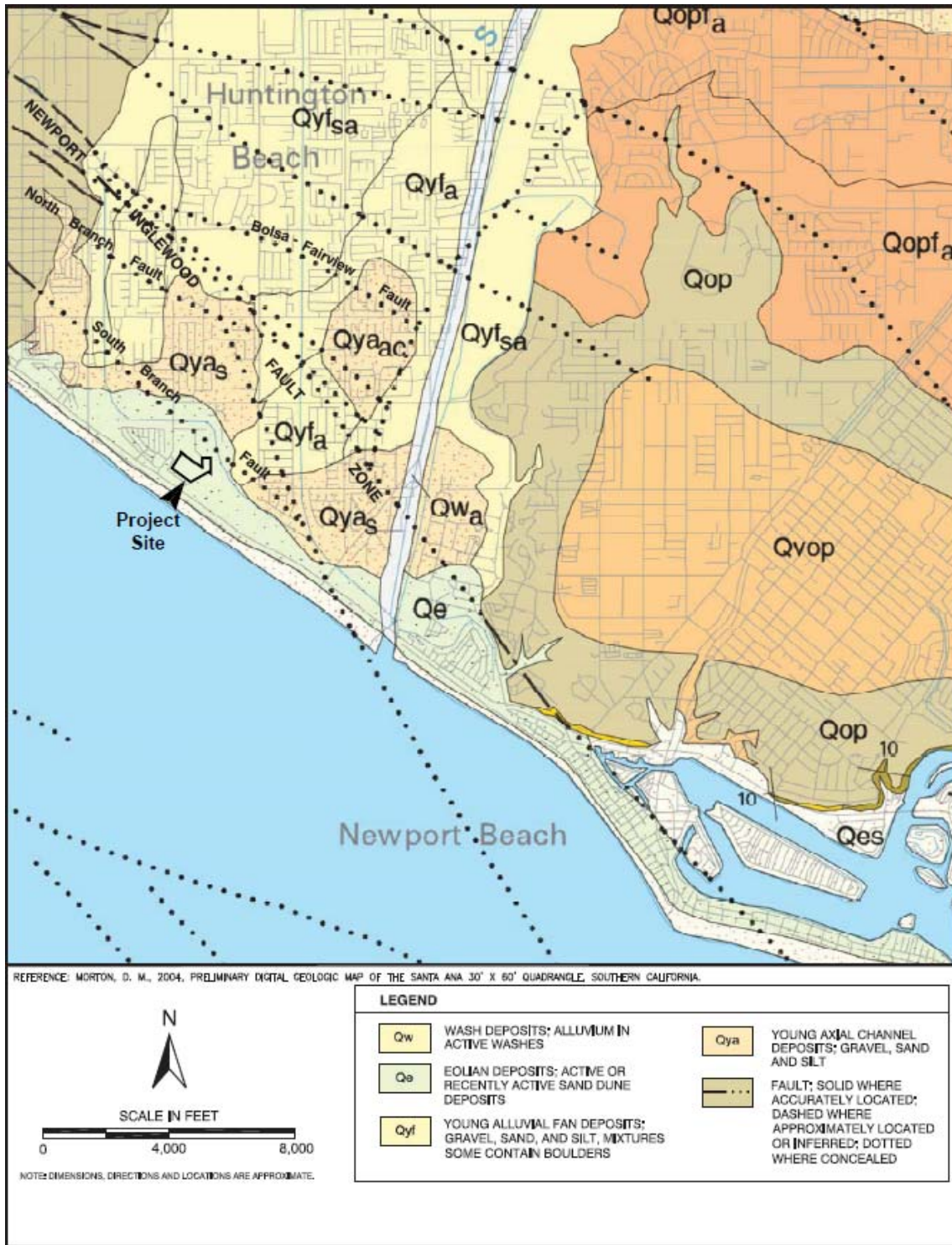
Despite the existence of fill and the presence of paving over the site, project excavation may disturb native soils that could contain fossils. Therefore, because of the potential for the project to encounter paleontological resources during excavation, we impose Conditions of Certification **PAL-1** through **PAL-8**.² These conditions require the project owner to implement several mitigation measures to reduce potential impacts to unknown subsurface resources during construction-related excavations. The mitigation measures include a worker education program in conjunction with the monitoring of earthwork activities by a qualified professional paleontologist. Earthwork will be halted whenever potential fossils or other paleontological resources are recognized by either the paleontologist or the workers. In addition, the project owner must submit a Paleontological Monitoring and Mitigation Plan for approval prior to the start of excavation. With the imposition and implementation of Conditions of Certification **PAL-1** through **PAL-8**, we find that the potential of the project to affect paleontological resources has been mitigated to a level of “less than significant”.

² The Conditions of Certification for Geological and Paleontological Resources are found in Appendix “A” to this Decision.

Unique Geological Features

Geology and Paleontology - **FIGURE 2** shows the geologic units at the surface and subsurface in the area. These geologic units occur throughout the Huntington Beach area. (Ex. 2000, p.5.2-8.)

Geology and Paleontology - Figure 2 Regional Geology



Source: Ex. 2000, Geology and Paleontology Figure 5.

Given the widespread nature of these alluvial deposits, we find that they are not unique features and do not possess any recreational, commercial, or scientific value. We therefore find the project does not have the potential to impact unique geological features.

Geologic Hazards

As detailed above, Appendix G of the CEQA Guidelines provides a checklist for evaluating whether a project site could expose persons or structures to geologic hazards based on site-specific conditions.³ The current version of the California Building Code (CBC 2013) provides geotechnical and geologic investigation and design standards, which engineers must follow when designing a facility subject to geologic hazards. (Ex. 2000, p. 5.2-11.)

To ensure that the project is properly designed to withstand regional geologic hazards, the soil profile must be investigated before project design can be finalized. **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** require the project owner to perform a site-specific geotechnical investigation consistent with the requirements of the CBC prior to final design approval. (Ex. 2000; Ex. 2003.)

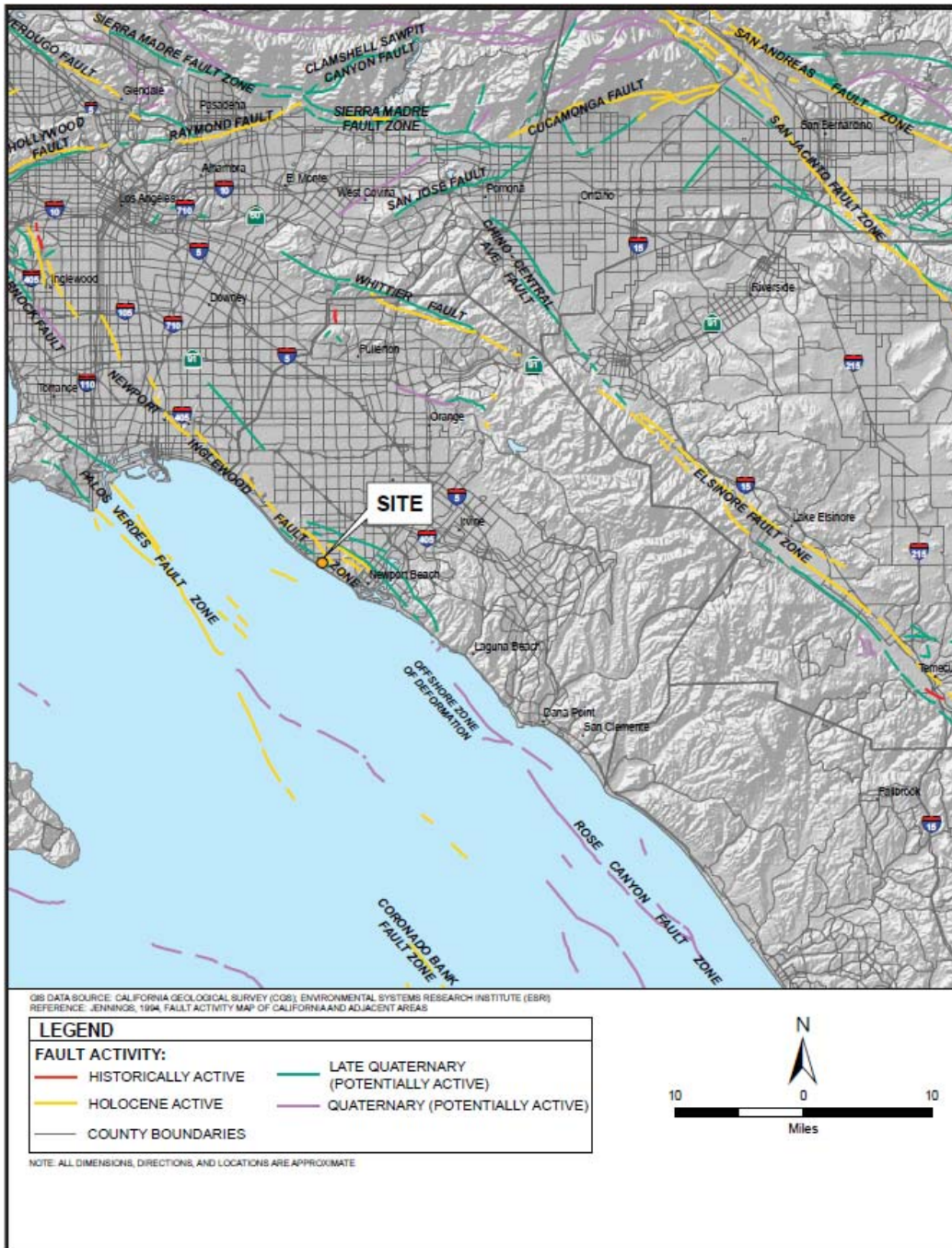
Faulting and Seismicity

The evidence provides a thorough review of the risks of active faulting and seismicity in the project area. The entire southern California area in the vicinity of the project has been described as “seismically active”. Active faults with the potential to affect the HBEP site include the San Andreas fault zone, the San Jacinto fault zone, the Elsinore fault zone, the Whittier fault zone, the Compton-Los Alamitos Fault Zone, the San Joaquin Hills Blind Thrust, the Newport-Inglewood fault zone, the Palos Verdes fault zone, the San Diego Trough fault zone and the San Clemente fault zone. Faults specific to the inner Continental Borderland include the Newport-Inglewood fault zone, the Palos Verdes fault zone, the San Diego Trough fault zone and the San Clemente fault zone. These fault zones are shown on **Geology and Paleontology - Figures 3 and 4**.

(Ex. 2000, pp. 5.2-12 – 5.2-20.)

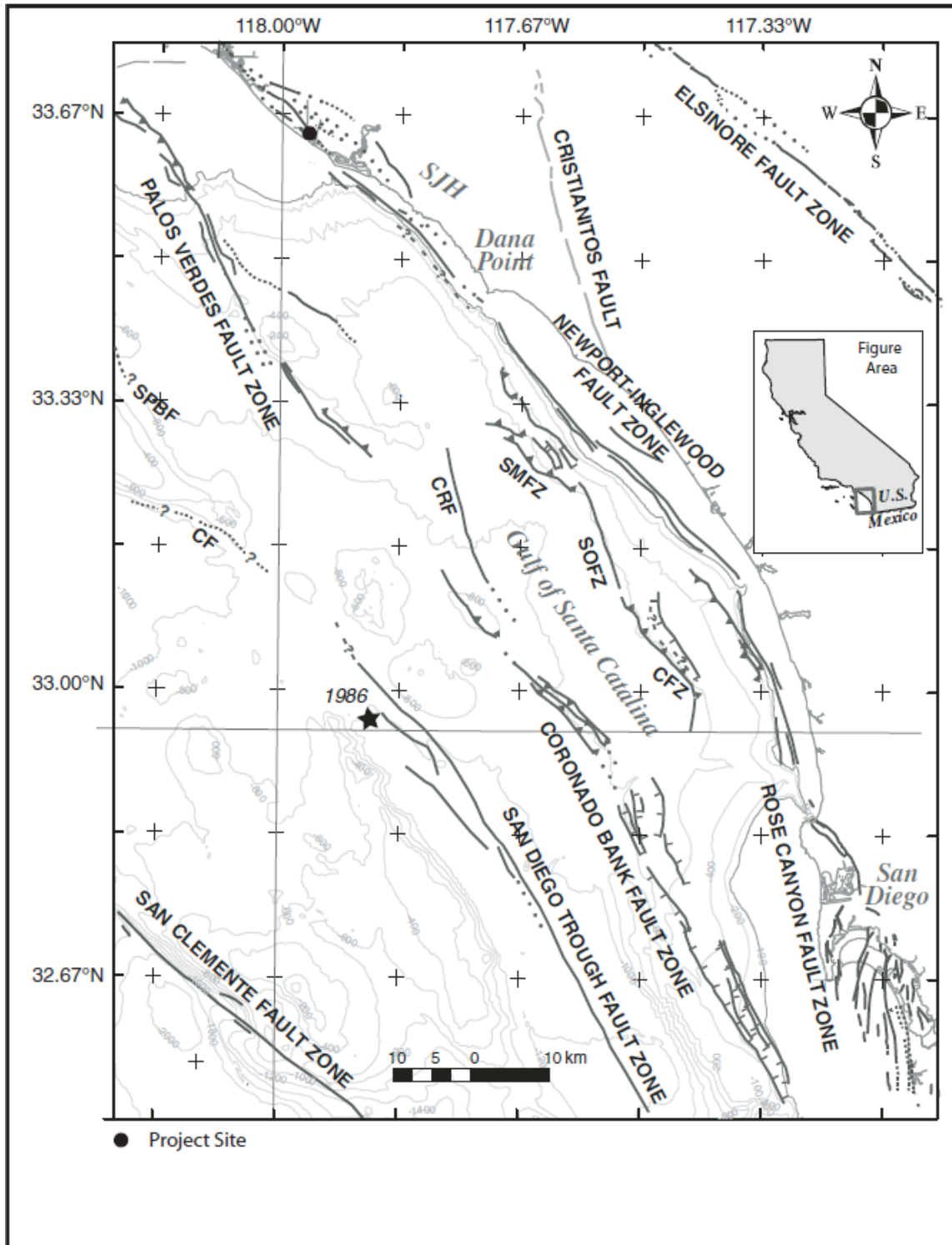
³ California Code of Regulations, tit. 14, §15000, Appendix G, Section VI.

Geology and Paleontology - Figure 3 Fault Locations



Source: Ex. 2000, Geology and Paleontology Figure 7.

**Geology and Paleontology - Figure 4
Inner Continental Borderland Faults**



Source: Ex. 2000, Geology and Paleontology Figure 8.

The Alquist-Priolo Earthquake Fault Zoning Act of 1994⁴ specifies that no structure for human occupancy may be built within an Earthquake Fault Zone until geologic investigations demonstrate that the site is free of fault traces that are likely to rupture with surface displacement. The project site is not within an Earthquake Fault Zone. (Ex. 2000, 5.2-19.)

Adjacent to the northern boundary of the project site, the trace of a concealed fault has been shown on numerous maps and labeled as the South Branch of the Newport-Inglewood fault zone. However, preliminary geotechnical studies conducted in 2002 for the proposed Poseidon facility, located northerly from the HBEP site, concluded that there is little specific evidence of the existence of the South Branch fault beneath the proposed Poseidon property and, by extension, the HBEP site. (Ex. 2000, 5.2-16.)

Shaking from seismic activity has been calculated for the project site using the USGS Earthquake Hazards application called the U.S. Seismic “DesignMaps” Web Application. The analysis is shown in **Geology and Paleontology Table 3**. (Ex. 2000, 5.2-19.)

⁴ Public Resources Code sections 2621-2630.

**Geology and Paleontology Table 3
 Planning Level 2010 CBC Seismic Design Parameters Maximum Considered
 Earthquake, ASCE 7 Standard**

Parameter	Value
Assumed Site Class	E
Structure Risk Category	III - Substantial
SS – Mapped Spectral Acceleration, Short (0.2 Second) Period	1.612 g
S1 – Mapped Spectral Acceleration, Long (1.0 Second) Period	0.598 g
Fa – Site Coefficient, Short (0.2 Second) Period	0.900
Fv – Site Coefficient, Long (1.0 Second) Period	2.400
SDS – Design Spectral Response Acceleration, Short (0.2 Second) Period	0.967 g
SD1 – Design Spectral Response Acceleration, Long (1.0 Second) Period	0.958 g
SMS – Spectral Response Acceleration, Short (0.2 Second) Period	1.451 g
SM1 – Spectral Response Acceleration, Long (1.0 Second) Period	1.436 g

(Ex. 2000, 5.2-20.)

The assumed site class for HBEP is “E”, which is applicable to soft clay soil. We assume the “Structure Risk Category” is “III”, which is based on its inherent risk to people and the need for the structure to function following a damaging event. (Ex. 2000, 5.2-19.)

Intervenor Rudman argues that potential fracking⁵ near the project should have been considered because of its impacts on seismicity. (08/06/14 RT 71:16-73:16; Ex. 4025.) Ms. Rudman is not an expert in the field of plate tectonics, engineering, or seismology. In addition, her proffered evidence, Exhibit 4025, details the impacts of fracking in Oklahoma, not southern California. Exhibit 4025 is thus of limited relevance to the impact of fracking on seismic events in a tectonically active region, such as that surrounding the HBEP site. Moreover, Ms. Rudman did not present any evidence that fracking is currently occurring nor is proposed to occur in the area of the HBEP.

⁵ Fracking, also known as hydraulic fracturing, is defined as “the process of injecting liquid at high pressure into subterranean rocks, boreholes, etc., so as to force open existing fissures and extract oil or gas.” (http://www.oxforddictionaries.com/us/definition/american_english/fracking (accessed August 13, 2014).)

On the other hand, both Energy Commission staff (Casey Weaver) and applicant's expert witness, Mr. Thomas Lae, stated that, given the high level of tectonic activity in the area, the impacts of fracking would be minor. (08/06/14 RT 72:22-73:16.) Mr. Lae also opined that seismic building standards, such as imposed by Condition of Certification **GEO-1**, coupled with **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1**, are sufficient to handle any fracking-related seismic events. (08/06/14 RT 73:11-73:16.)

We find the testimony of Messrs. Weaver and Lae to be persuasive and conclude that hydraulic fracturing does not present a significant potential impact on the seismic activity otherwise likely to affect the HBEP project. We further find that imposition and implementation of Condition of Certification **GEO-1** and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** are sufficient to ensure proper construction to withstand any seismic events that may occur as a result of hydraulic fracturing.

Condition of Certification **GEO-1**, coupled with **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1**, address the design requirements for strong ground shaking consistent with the Seismic Hazards Mapping Act and the CBC. Proper design in accordance with the **FACILITY DESIGN** Conditions, as well as with recommendations presented in the site-specific, design-level geotechnical investigation, ensure the project is built to current seismic standards and potential impacts would be mitigated to insignificant levels in accordance with current standards of engineering practice.

We therefore impose Condition of Certification **GEO-1** and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in order to mitigate the potential seismic hazards to the project. With the imposition and implementation of Condition of Certification **GEO-1** and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1**, we find that potential seismic impacts would be mitigated to a level of "less than significant".

Liquefaction

Liquefaction is a condition in which a saturated cohesionless soil may lose shear strength because of a sudden increase in pore water pressure caused by an earthquake. Groundwater depth was measured at a depth of approximately 14 feet below ground surface. The grading plan currently proposed for the HBEP demonstrates that the existing site surface is approximately eight feet above the natural ground level; as such, depth to groundwater would be only 6 feet below the natural ground level. The presence of shallow groundwater at the HBEP site raises concerns about liquefaction, settlement rates, and the need for construction dewatering. Indeed, the proposed project site is included in an area "where historic occurrence of liquefaction, or local

geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Codes Section 2693(c) [Seismic Hazards Mapping Act] would be required". (Ex. 2000, pp. 5.2-20 - 5.2-21.)

We find that the potential for subsurface conditions to be conducive to liquefaction exists because of the shallow depth to groundwater. To ensure that potential liquefaction damage at the HBEP site is properly analyzed, we impose Condition of Certification **GEO-1**, requiring the project owner to include a site-specific Soils Engineering Report, as well as and **FACILITY DESIGN** Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**, mandating that the project owner prepare a project-specific geotechnical report consistent with the requirement of the CBC. With the imposition and implementation of Condition of Certification GEO-1 and **FACILITY DESIGN** Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**, we find that the potential for liquefaction damage at the HBEP site has been mitigated to a level of "less than significant".

Landslide

Landslides occur when masses of rock, earth, or debris move down a slope, including rock falls, deep failure of slopes, and shallow debris flows. The evidence shows that the site is relatively flat and located substantial distances from steep terrain. (Ex. 2000, p. 5.2-25.)

Because of the relative flat slope of the HBEP site and its distance from steep terrain, we find that the HBEP is not subject to landslide hazards.

Seiche

Seiches are waves generated within enclosed water bodies such as bays, lakes or reservoirs caused by seismic shaking, rapid tectonic uplift, basin bottom displacement and/or land sliding. The key requirement for formation of a seiche is that the body of water be at least partially bounded, allowing the formation of the standing wave. The only nearby enclosed bodies of water that could potentially develop a seiche are the Huntington Beach Channel and the Magnolia Marsh Ecological Preserve. The evidence establishes that the likelihood of either of these bodies developing a seiche is low and any such seiche would be of small magnitude. Also, given the elevated surface of the project site, it would be isolated from the threat of inundation by a seiche. (Ex. 2000, pp. 5.2-25, 5.2-28 - 5.2-29.)

To address the potential for and mitigation of the effects of seiche-caused inundation on the HBEP site, we impose Conditions of Certification **GEO-1**, **GEN-1**, **GEN-5** and **CIVIL-1** that require the project owner to prepare a project-specific geotechnical report, per CBC 2013 requirements. With the imposition and implementation of Conditions of Certification **GEO-1**, **GEN-1**, **GEN-5** and **CIVIL-1**, we find that the potential effects of seiche-caused inundation on the HBEP site to be “less than significant”.

Tsunami

Tsunamis are large-scale seismic-sea waves caused by offshore earthquakes, submarine landslides and/or volcanic activity. Tsunamis are categorized as local, regional, or Pacific-wide, based on the potential destruction relative to the tsunami source area. Larger events may have long lead times (up to 6 hours), but the breadth of the destruction is wide. (Ex. 2000, pp. 5.2-25 – 5.2-26.)

All of California is at risk from both local and distant tsunamis. In reviewing modeling from a variety of sources on the potential for tsunamis to be generated by either earthquake or submarine slumps, the evidence indicates that the maximum flood elevations in the area of the HBEP project are about 11 feet above MSL (Mean Sea Level) - very close to the beach heights in the project area. Thus, direct inundation is not likely. However, tsunami flooding could also come from behind the beach through the drainage channel outfall and potentially overtop the flood control levees. (Ex. 2000, pp. 5.2-26 – 5.2-28.)

To address the potential for and mitigation of the effects of tsunami-caused inundation on the HBEP site, we impose Conditions of Certification **GEO-1**, **GEN-1**, **GEN-5** and **CIVIL-1** that require the project owner to prepare a project-specific geotechnical report, per CBC 2013 requirements, and include identified mitigations such as strengthening of seafront structures, providing emergency warning systems, and structural reinforcement at the site. With the imposition and implementation of Conditions of Certification **GEO-1**, **GEN-1**, **GEN-5** and **CIVIL-1**, we find that the potential effects of tsunami-caused inundation on the HBEP site to be “less than significant”.

Methane Gas

The only economic geologic resource in Huntington Beach is petroleum. The presence of petroleum brings with it the possibility of the production of methane gas, which may be found in native soils. As set forth above, the project site has a plugged oil and gas well; off-site, there are nearby wells and storage tanks. Additionally, there is an abandoned dry hole near the fuel oil storage tanks. The presence of an oil well on the site and several additional wells in the site vicinity represent a *Recognized Environmental Condition* in connection with the site. Additionally, because of the prior

production of oil in the area, the project site lies within the Methane District established by the city of Huntington Beach. (Ex. 2000, pp. 5.2-1, 5.2-24.)

Huntington Beach Municipal Code Section 17.04.085, Methane District Regulations, requires inspection and, if necessary, mitigation of abandoned oil wells and oil contaminated soil for projects within the city of Huntington Beach. The Huntington Beach municipal code strongly recommends that no structures be constructed over or near abandoned oil wells or hydrocarbon contaminated soil (e.g., from the oil storage tanks) until the abandoned wells can be proven safe and/or hydrocarbon contaminated soils have been remediated.⁶ (Ex. 2000, p. 5.2-24.)

Condition of Certification **GEO-2** requires the owner to comply with Huntington Beach Municipal Code Section 17.04.085 to mitigate any known or subsequently discovered oil and gas exploration facilities located on the project site. We impose Condition of Certification **GEO-2** to mitigate the potential impacts of oil and gas exploration that may have previously occurred on the project site. With the imposition and implementation of Condition of Certification **GEO-2**, we find that the potential hazards associated with the presence of methane from abandoned oil and gas exploration have been mitigated to a level of “less than significant”.

Other Geologic Hazards

The evidence also addresses potential hazards from lateral spreading, dynamic compaction, hydrocompaction, subsidence, expansive soils, corrosive soils, or mass wasting, and volcanic hazards. Based on data from the Desalinization Project geotechnical report, the likelihood of such geologic hazards to occur at the project site is considered low. (Ex. 2000, pp. 5.2-17 – 5.2-19.) However, the presumed low risk of these geologic hazards at the site must be confirmed in the project-specific geotechnical investigation.

With the imposition and implementation of **FACILITY DESIGN** Conditions **GEN-1**, **GEN-5** and **CIVIL-1**, we find that potential impacts related to these phenomena are reduced to levels of “less than significant”.

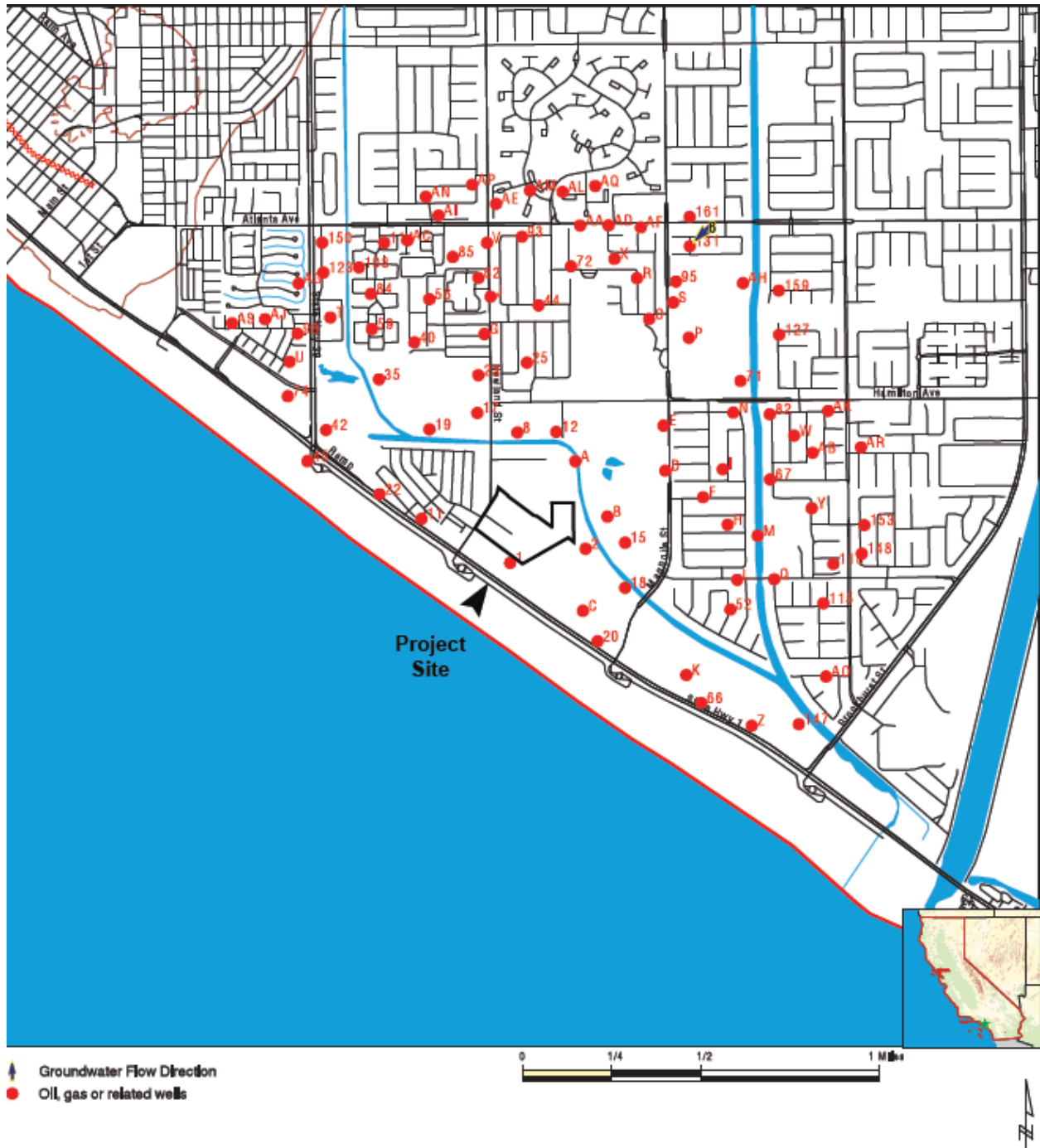
Mineralogical Resources

The Huntington Beach area has been the site of the extraction of oil and gas, sand and gravel, and peat products for many years. Large-scale oil and gas production has occurred since the 1920s and continues to the present time. The city of Huntington

⁶ For further analysis of potentially contaminated soils not related to abandoned oil and gas exploration and development, please see the **WASTE MANAGEMENT** section of this Decision.

Beach lies over several oil producing areas, including the Talbert, Sunset Beach, West Newport, and Huntington Beach oil fields. The HBEP site specifically overlies the West Newport oil field. Within this field, there are many plugged or abandoned wells located near the project site. Abandoned wells within 2 miles of the project site are shown on **Geology and Paleontology - Figure 5**. These wells have largely been abandoned due to dwindling capacity in local oil reserves and expenses incurred in extraction. (Ex. 2000, p.5.2-8.)

Geology and Paleontology - Figure 5 Inner Continental Borderland Faults



Source: Ex. 2000, Geology and Paleontology Figure 6.

In addition to oil production, the area near the proposed project site has previously been the source of peat. However, recent investigations have found that this area of Orange

County does not possess significant aggregate materials. The evidence further establishes that there are no known active mining sites near the project site. (Ex. 2000, p.5.2-8.)

The site itself has one plugged oil and gas well located on the southwest portion of the project site, with additional At the evidentiary hearing on August 6, 2014, as discussed above in the area of geological hazards and seismicity, Intervenor Rudman introduced the concept of “fracking” as affecting the viability of capped or abandoned oil wells. (08/06/14 RT 70:8-71:15.) However, Ms. Rudman did not present sufficient facts to show that fracking is likely to occur near or on the HBEP site so that approval of this project would limit oil production.

We therefore conclude that approval of this project would not have an adverse impact on oil and gas production or on other geologic resources of commercial value or on the availability of such resources. We further find that the project would not have any significant adverse direct or indirect impacts to potential mineralogical resources.

Compliance with LORS

Imposition and implementation of Condition of Certification **GEO-1**, coupled with **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1**, will insure that the engineering design is consistent with the requirements of the CBC and thus comply with that LORS.

The project site is not within an identified Earthquake Fault Zone. As such, notice under the Alquist-Priolo Earthquake Fault Zoning Act is not required. The project thus complies with the LORS relating to setbacks for human structures in such zones.

By imposing and requiring implementation of Condition of Certification **GEO-2**, mandating that the project owner meet the requirements with Huntington Beach Municipal Code Section 17.04.085, we find compliance with the local LORS of the Methane Gas District.

CUMULATIVE IMPACTS

Cumulative impacts correspond to a project’s potential incremental effect, together with other closely related past, present, and reasonably foreseeable future projects whose impacts on geologic, mineralogical, and paleontological resources may compound or increase the incremental effect of the project on such resources. (Ex. 2000, p. 5.2-23.)

Engineering design consistent with the requirements of the CBC will ensure that the project is constructed to adequately withstand any potential geologic hazards in the project vicinity. Since there are no known geologic or mineralogical resources in the

project area, the project will not result in a significant direct, indirect, or cumulative impact on such resources. (Ex. 2000, p. 5.2-23.)

As discussed above, while significant paleontological resources have not been identified within close proximity to the project site, the likelihood of encountering paleontological resources during project construction is low. Any potential impacts to paleontological resources, either at the site where sensitivity is minimal or near ocean-water pipelines where sensitivity is high, will be mitigated to insignificant levels under Conditions **PAL-1** through **PAL-8**. Because project construction is not likely to impact or disturb valuable paleontological resources at the site or along linear alignments, there is no evidence that project activities will result in cumulative impacts on regional paleontological resources. (Ex. 2000, pp. 5.2-23 – 5.2-24.)

CALIFORNIA COASTAL COMMISSION COMMENTS

The Coastal Commission submitted a report dated July 14, 2014, entitled, “Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **Land Use** section of this Decision.

The July 2014 Report recommends that we require AES to conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown expected from that dewatering. If the investigation shows potential drawdown effects to nearby environmentally sensitive habitats or wetland areas, project owner would then be required to identify and implement methods to avoid those effects. The methods to mitigate the potential effects of dewatering include installing sheet piles, slurry walls, or other similar barriers or conducting alternative dewatering methods that would avoid drawing down groundwater in these sensitive areas. The Coastal Commission also recommends that these structural mitigation methods be included on any relevant final design plans required pursuant to this Decision. (Ex. 4026, pp 13 – 14.)

We have modified Condition of Certification **GEO-1**, to include a requirement that the project owner conduct a geotechnical investigation to quantify dewatering volumes and any effects of that dewatering. With this modification, along with similar modifications to Condition of Certification **GEN-2**, **SOIL&WATER-1**, **SOIL&WATER-3**, **SOIL&WATER-4**, and **BIO-7**, we have provided additional feasible mitigation measures to avoid potential adverse dewatering impacts to adjacent habitat areas.

PUBLIC COMMENTS

There were no comments on this topic from regulatory agencies or the public.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The project site is near the Pacific Ocean on a coastal plain near the boundary of the Southwest Block and Central Block, near the Newport-Inglewood fault zone.
2. Several northwest-striking active and potentially active faults are present in the project area and throughout the Peninsular Ranges Geomorphic Province.
3. Since no active faults are known to cross the boundary of new construction at the project site, the project is not subject to the set-back requirements mandated by the Alquist-Priolo Special Studies Zone Act.
4. The primary geologic hazards that could affect the project include intense levels of earthquake-related ground shaking, liquefaction, and settlement due to expansive clays.
5. Conditions of Certification **GEN-1**, **GEN-4**, **GEN-5**, and **CIVIL-1** of the **FACILITY DESIGN** section of this Decision require the project owner to conduct a site-specific geotechnical investigation, which confirms the soil profile, including composition and depth of fill materials as well as subsurface information such as groundwater depth, before project design can be finalized.
6. Conditions of Certification **GEN-1**, **GEN-4**, **GEN-5**, and **CIVIL-1** of the **FACILITY DESIGN** section of this Decision require the project owner to design the project to current engineering standards to ensure that potential geologic hazards to the project will be adequately mitigated.
7. The evidence indicates that lateral spreading, dynamic compaction, hydrocompaction, landslides, compressible soils, expansive soils, corrosive soils, flooding, and seiches pose low or negligible project risks but this assumption must be confirmed by the site-specific geotechnical investigation referenced above in Findings 7, 8, and 9.
8. Project construction will conform to the most recently adopted version of the California Building Code, including its seismic requirements for the project locality, based on the results of the required geotechnical investigation.
9. Geologic hazards to the project, including those from seismic events, would be low, but must be addressed in the geotechnical report provided consistent with the most recently adopted version of the California Building Code.

10. Hydraulic fracturing does not present a significant potential impact on the seismic activity otherwise likely to affect the HBEP project
11. Compliance with the seismic requirements of the California Building Code effectively mitigates the danger to project structures from seismic ground shaking.
12. There is no evidence of existing or potential geologic or mineralogical resources at the project site or along the linear alignments.
13. Since the ground surface at the site is disturbed, the surface fill material is unlikely to contain significant paleontological resources within their natural context.
14. To mitigate any potential impacts to newly discovered paleontological resources during excavation and construction, the project owner will implement a Paleontological Monitoring and Mitigation Plan, including a Worker Environmental Awareness Program, and employ an on-site Paleontological Resource Specialist with authority to halt construction activities when paleontological resources are identified.
15. There is no evidence that project construction or operation will result in cumulative impacts to geologic, mineralogical, or paleontological resources.

CONCLUSIONS OF LAW

1. The Conditions of Certification imposed in the **FACILITY DESIGN** section of this Decision and in this section, as found in Appendix "A" to this Decision, ensure that project activities will not cause significant adverse direct, indirect, or cumulative impacts to geologic, mineralogical, or paleontological resources.
2. Compliance with the Conditions of Certification imposed in the **FACILITY DESIGN** section of this Decision and imposed in this section, as found in Appendix "A" to this Decision, will ensure that the HBEP conforms to all applicable laws, ordinances, regulations, and standards related to geologic, mineralogical, and paleontological resources as described in the evidentiary record.

VI. LOCAL IMPACT ASSESSMENT

In the following sections of this Decision, we review whether the proposed Huntington Beach Energy Project (HBEP) will result in significant local impacts on nearby population centers, including an excessive burden on community services; unmitigated noise; increased traffic congestion; and/or adverse visual effects. These potential impacts are discussed under the technical topics of **LAND USE, SOCIOECONOMICS, NOISE, TRAFFIC AND TRANSPORTATION, and VISUAL RESOURCES.**

A. LAND USE

INTRODUCTION

This land use analysis addresses project compatibility with existing or reasonably foreseeable¹ land uses; consistency with applicable laws, ordinances, regulations and standards of the city of Huntington Beach, the city of Long Beach, and the state; and potential project related direct, indirect, and cumulative environmental effects. (Ex. 2000, p. 4.5-2.)

All parties provided land use analyses, contained in the following exhibits: 1001, 1087, 1090, 1121, 1132, 1133, 1137, 2000, 2003, and 4013. (07/21/14 RT 29:13-31:25; 08/06/14 RT 24:22-27:15.)

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

The Assessor's Parcel Numbers (APN) for the HBEP site are 114-150-82 and 114-150-96. HBEP would utilize a 28.6 acre portion of APN 114-150-96. (Ex. 2000, p. 4.5-3.)

Existing land uses immediately adjacent to and nearby the proposed HBEP site within Huntington Beach include:

- North: The area immediately adjacent to the project site includes the Southern California Edison 230 kV Switchyard and several empty fuel oil storage tanks. Between Edison Drive and the Huntington Beach Channel are an animal hospital, auto wrecking, and a recycling center. Beyond the channel uses transition from mini-storage and warehouses to residential neighborhoods with parks and schools.

¹ Whether a project is reasonably foreseeable (i.e., a "probable future project") for purposes of cumulative impact analysis depends on the nature of the resource in question, the location of the project, and the type of project. (Cal. Code Regs., tit. 14, §15130(b)(2)).

- South: The HBEP shares a property boundary with the Wetlands and Wildlife Care Center. The Center separates the HBEP site from Pacific Coast Highway. Huntington Beach State Park and the Pacific Ocean are across the highway
- East: The Huntington Beach Channel (a facility operated by the Orange County Flood Control District) runs to the east of the project site. Across the channel to the east is another tank farm. To the northeast is the Ascon/Nesi Landfill within the Magnolia Pacific Specific Plan area. To the southeast of the project site is the Huntington Beach Wetland Preserve / Magnolia Marsh Restoration Project area, a designated Environmentally Sensitive Habitat Area (ESHA). To the east of Magnolia Street is an established low density residential neighborhood. The Orange County Sanitation District is between Brookhurst Street and the Santa Ana River.
- West: Across Newland Street are the Huntington-By-The-Sea Mobile Home and RV Park and Cabrillo Mobile Home Park. Northwest of the project site is a partially completed new subdivision, Pacific Shores with bungalow and townhome units currently for sale. The Downtown Specific Plan and Beach and Edinger Corridors Specific Plan areas are west beyond more coastal conservation areas.

(Ex. 2000, pp. 4.5-5 – 4.5-6.)

The following are educational, park, recreation, church, and hospital land uses within one mile of the project site:

- Huntington State Beach;
- Ralph Bauer Public Park;
- Edison Community Park;
- Edison High School;
- Kettler Elementary School;
- Eader Park and Library;
- Gisler Park;
- The Church of Jesus Christ of Latter-day Saints;
- Brethren Christian Junior and Senior High School; and
- Seeley Park.

(Ex. 2000, p. 4.5-6.)

The State of California maintains ownership and jurisdiction of the Huntington Beach State Park. The remainder of the study area is within the city limits of Huntington Beach. (Ex. 2000, p. 4.5-6.)

The evidence shows that neither the project site nor the surrounding area contain land identified as Important Farmlands. (Ex. 2000, p. 4.5-6.)

General Plan Land Use and Zoning Designations

Project Site

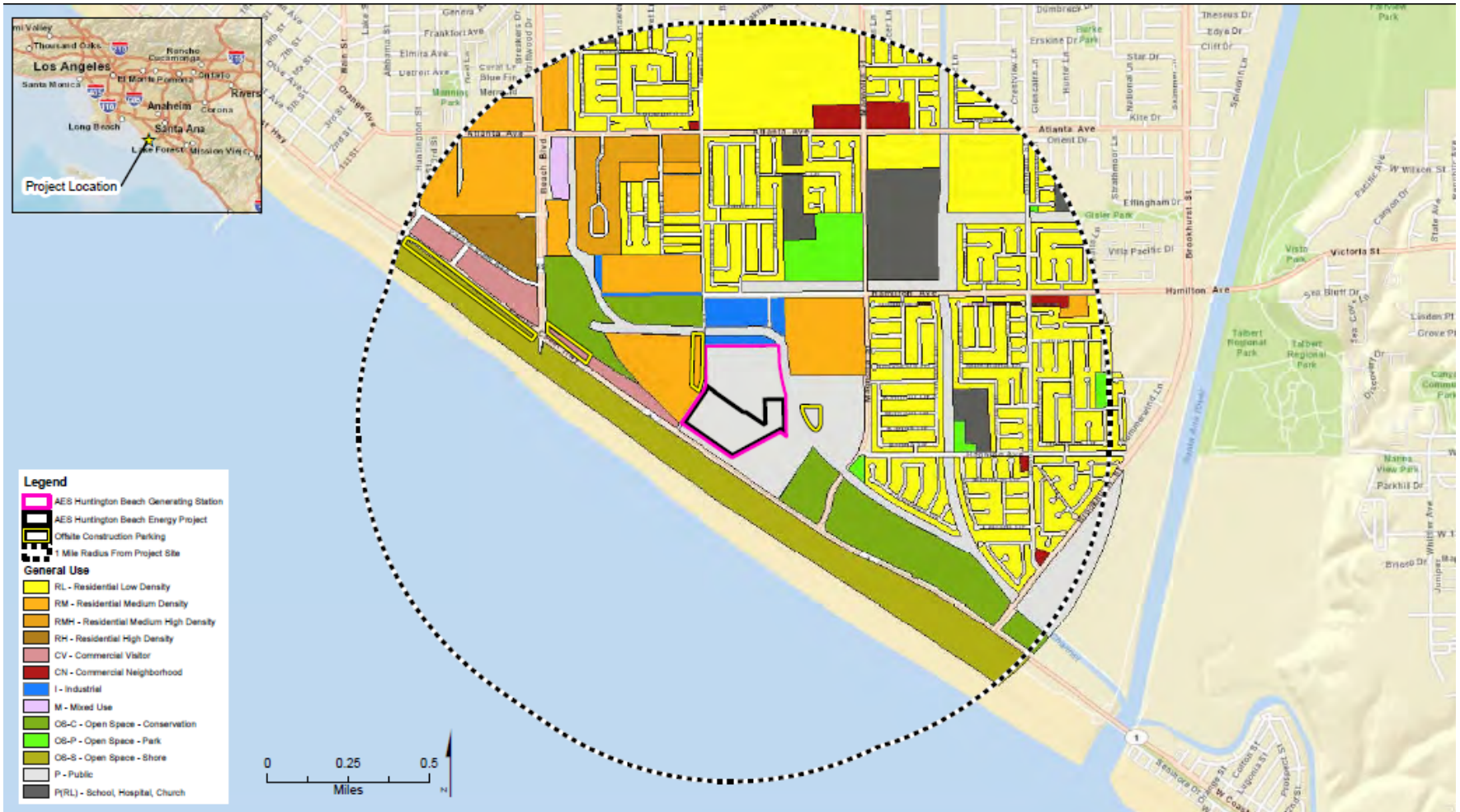
Land Use Figure 1 (General Plan Land Use Designations Map) and **Land Use Figure 2** (Zoning and Subdivision Ordinance Map) illustrate the land use and zoning designations of the proposed power plant site and lands within one mile of the HBEP. The HBEP site is designated by the Huntington Beach General Plan as Public (P). Typical permitted uses of land within the Public designation include governmental administrative and related facilities, such as public utilities, schools, public parking lots, infrastructure, religious and similar uses (Ex. 2000, p. 4.5-7.)

The General Plan Land Use Element also includes a Community District and Subarea Schedule. The Community District and Subarea Schedule describes the intended functional role of each of the city's principal subareas and references the applicable permitted uses, densities, and pertinent overlays. The HBEP site is within Subarea 4G "Edison Plant"; land use categories within Subarea 4G include Public (P) and Conservation (OS-C). Within each subarea, buildings, sites, and infrastructure improvements are designed to be compatible in scale, mass, character, and architecture with existing buildings. (Ex. 2000, p. 4.5-7.)

The HBEP site is zoned Public-Semi-public (PS), and is included in the Coastal Zone Overlay District (CZ), as well as the Oil Production Overlay District (O)². Uses allowed in the PS district include major and minor utilities. "Major utilities" include generating plants, electrical substations, above-ground electrical transmission lines, and switching buildings. Major utilities require a conditional use permit in order to locate in the PS zone. Development within the CZ overlay district requires a Coastal Development Permit. (Ex. 2000, p. 4.5-8.)

² The O Overlay District creates separate conditions for oil operations. Because the project does not concern oil operations, the O overlay district is not discussed further.

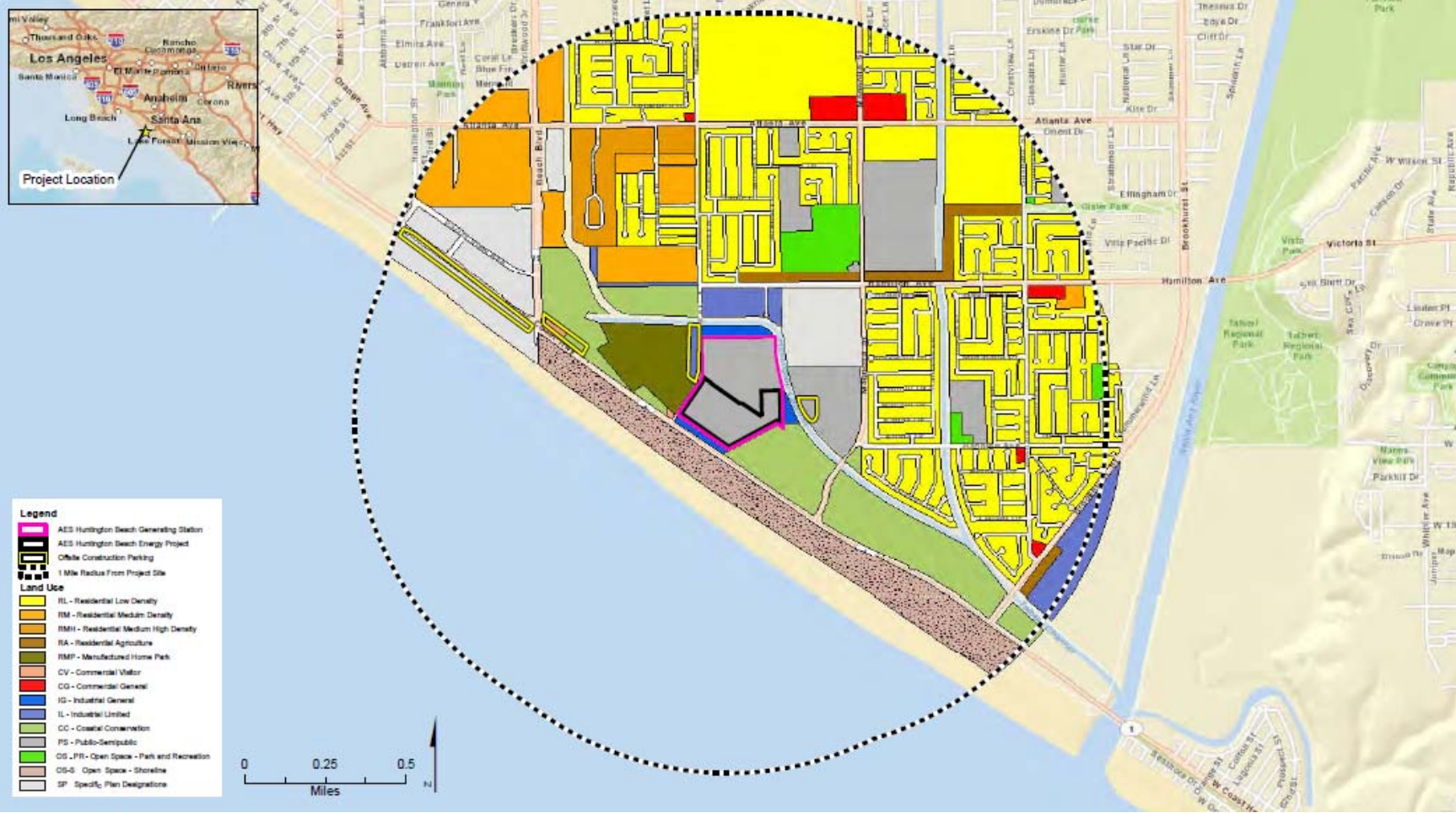
Land Use Figure 1 General Plan Land Use Designations



Source: Ex. 2000, Land Use Figure 1

LAND USE
6.1-4

Land Use Figure 2 Zoning and Subdivision Ordinance



Source: Ex. 2000, Land Use Figure 2

LAND USE
6.1-5

Offsite Parking Areas:

General Plan land use designations for the four temporary HBEP offsite construction/demolition parking areas are as follows:

- Newland Street – Residential Medium Density (RM-15);
- Pacific Coast Highway and Beach Boulevard – Commercial Visitor (CV-F2);
- City of Huntington Beach shore parking – Open Space Shoreline (OS-S); and
- Plains All American Tank Farm – Public (PS).

Zoning for the four potential temporary offsite construction/demolition parking areas are as follows:

- Newland Street – Industrial Limited (IL);
- Pacific Coast Highway and Beach Boulevard – Commercial Visitor (CV) and Coastal Conservation (CC);
- City of Huntington Beach shore parking – Downtown Specific Plan (SP-5); and
- Plains All American Tank Farm – Public-Semi-public (PS).

Construction Lay-down Facilities

The construction laydown area would be located on 16 acres of vacant land at the AES Alamitos Generating Station (AGS), located in the city of Long Beach. The Long Beach General Plan thus controls the permitted uses of the AGS. The AGS site bears a land use designation under the Long Beach General Plan as Mixed Use; it is within Subarea 19 of the Southeast Area Development and Improvement Plan specific plan. Subarea 19 allows for industrial uses, such as the AGS. The use of the vacant land would be ancillary to the permitted industrial use of the AGS. (Ex. 2000, p.4.5-22.)

STANDARDS OF REVIEW/LAW, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The California Environmental Quality Act (CEQA)³:

According to CEQA, a project results in significant land use impacts if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses.
- Physically divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction, over the project. This includes, but is not limited to, a General Plan, community or specific plan, local coastal program, airport land use compatibility plan, or zoning ordinance.
- Create individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts.

(CEQA Guidelines, tit. 14, App. G, §§ II, X.)

Laws, Ordinances, Regulations, and Standards (LORS)

Land Use Table 1 lists the state and local land use LORS applicable to the proposed project. Because of HBEP includes off-site facilities, it would require consistency with the applicable laws, ordinances, regulations, and standards pertaining to land use planning of two cities: the city of Huntington Beach and the city of Long Beach. The

³ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We may refer to the statute and the Guidelines collectively as “CEQA”.

project site does not involve federally managed lands, therefore, there are no identified applicable federal land use related LORS. (Ex. 2000, pp. 4.5-2.)

**Land Use Table 1
Applicable Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
State	
<p>Warren-Alquist Act, Public Resources Code § 25500 et seq.</p> <p>California Coastal Act, Public Resources Code §30000, et seq.</p>	<p>The Coastal Act establishes a comprehensive approach to govern land use planning along the entire California coast. The Coastal Act also sets forth general policies (Public Resources Code §30200 et seq.) that govern the California Coastal Commission’s review of permit applications and local plans. In the case of energy facilities, Section 30600 of the Coastal Act states: (a) Except as provided in subdivision (e), and in addition to obtaining any other permit required by law from any local government or from any state, regional, or local agency, any person, as defined in Section 21066, wishing to perform or undertake any development in the coastal zone, other than a facility subject to Section 25500, shall obtain a coastal development permit. Section 25500 states that the Energy Commission has exclusive power to certify sites for power generation facilities 50 megawatts or greater and related facilities anywhere in the state.</p>
<p>The Warren-Alquist Act, Public Resources Code §25529</p>	<p>Requires public access to coastal resources as a condition of certification of a facility proposed in the Coastal Zone as follows:</p> <p>“When a facility is proposed to be located in the coastal zone or any other area with recreational, scenic, or historic value, the commission shall require, as a condition of certification of any facility contained in the application, that an area be established for public use, as determined by the commission. Lands within such area shall be acquired and maintained by the applicant and shall be available for public access and use, subject to restrictions required for security and public safety. The applicant may dedicate such public use zone to any local agency agreeing to operate or maintain it for the benefit of the public. If no local agency agrees to operate or maintain the public use zone for the benefit of the public, the applicant may dedicate such zone to the state. The commission shall also require that any facility to be located along the coast or shoreline of any major body of water be set back from the shoreline to permit reasonable public use and to protect scenic and aesthetic values.”</p>

Applicable LORS	Description
California Code of Regulations, Title 20, Ch. 5, Art. 6, App. B(g)(3)(C)	An Energy Commission siting regulation that ensures a project will be located on a single legal parcel if the proposed site consists of more than one legal parcel. The merger or lot line adjustment need not occur prior to a decision on the Application but must be completed prior to the start of construction.
Local	
City of Huntington Beach General Plan	The General Plan for the city of Huntington Beach, adopted May 13, 1996, provides the framework for management and utilization of the city's physical, economic and human resources. The General Plan establishes the location, types, intensity and distribution of land uses throughout the city, including areas within the coastal zone. The General Plan is organized into the following Chapters: Community Development; Infrastructure and Community Services; and Natural Resources; and Hazards. In addition, the city has adopted a Coastal Element that serves as the city's Local Coastal Program, and was certified by the California Coastal Commission in March 1985.
Huntington Beach Zoning and Subdivision Code , Huntington Beach Municipal Code, Titles 20-25	The Zoning Ordinance establishes specific zone districts and land use regulations for properties within the city.
City of Huntington Beach Urban Design Guidelines, Resolution No. 2000-87.	The Urban Design Guidelines implement the Urban Design Element of the General Plan. The Guidelines provide guidance for various types of uses, as well as specific comments regarding lighting, landscaping, and other features of specific sites within the community.
City of Long Beach General Plan Land Use Element	HBEP would include a 16-acre lay down site at AES Alamitos Generating Station in the city of Long Beach. The city of Long Beach General Plan Land Use Element addresses the long-range use and development of land within the city.
City of Long Beach Zoning Regulations, Long Beach Municipal Code Title 21	Regulates land use and development within the city in conformance with the General Plan.

(Ex. 2000, pp. 4.5-2 – 4.5-3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

CEQA Impact and Mitigation

This section analyzes the potential project impacts, using the CEQA significance criteria identified above. Where potential impacts are found, mitigation of those impacts is also discussed.

Conversion of Farmland

The proposed HBEP site does not contain, and would therefore not convert, any farmland with FMMP designations of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance to non-agricultural use. (Ex. 2000, p. 4.5-9.)

We therefore hold that the proposed HBEP would have no impact with respect to farmland conversion.

Williamson Act Contracted Land

The California Land Conservation Act, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses. (Gov. Code §§ 51200-51297.4.) The proposed HBEP is not located on land that is under a Williamson Act contract. (Ex. 2000, p. 4.5-10.)

As a result, we find that approval of the HBEP would not conflict with any Williamson Act contracts.

Timberland and Forests

The proposed project site is not zoned for forest land, timberland, or for timberland production. In addition, there is no land zoned for such purposes within one mile of the project site. (Ex. 2000, p. 4.5-10.)

Therefore, we conclude there would be no conflict with, or cause for, rezoning of forest land or timberland and, as a result, there would be no impact to forest land or timberland.

Physical Disruption or Division of an Established Community

The proposed HBEP would be located within the boundaries of an existing power plant that has been in its current location since the late 1950s. Access to the proposed project would be through existing rights-of-way on Newland Street and the Pacific Coast Highway. The proposed project is located on lands designated and zoned for public utility uses, including electrical generating facilities. There would not be a need to relocate any residences as a result of the HBEP. (Ex. 2000, p. 4.5-10.)

Therefore, we find the HBEP would not physically divide or disrupt any community within Huntington Beach. In addition, the proposed project would not involve the displacement of any existing development or result in new development that would physically divide an existing community.

Conflict with Any Applicable Habitat or Natural Community Conservation Plan

The HBEP is not located within any Habitat Conservation Plan or Natural Community Conservation Plan. (Ex. 2000, pp. 4.5-10 – 4.5-11.)

We therefore find that the HBEP would not conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan.

Compliance with Laws, Ordinances, Regulations, and Standards (LORS)

As part of the licensing process, the Energy Commission must determine whether a proposed facility complies with all applicable state, regional, and local LORS (Pub. Res. Code § 25523(d)(1).) This review of LORS is broader than, but also includes part of our required analysis under CEQA: does the proposed project conflict with any applicable land use plan, policy, or regulation?

When determining LORS compliance, we give “due deference” to an agency’s assessment of whether a proposed project is consistent with LORS under the agency’s jurisdiction. (Cal. Code Regs., tit. 20, § 1714.5.)

Consistency with California Coastal Act.

The HBEP site is within in the Coastal Zone and therefore subject to the Coastal Act. (Public Resources Code § 30000 et. seq.) Although the city of Huntington Beach has a certified Local Coastal Program (LCP), the proposed HBEP site is within the retained jurisdiction of the Coastal Commission. The Coastal Commission’s permitting authority is in turn subject to the Energy Commission’s jurisdiction over power plants. (Pub. Res. Code, §§ 25500, 30600.)

Were the Coastal Commission to exercise its permitting authority, it would review the project against the policies of the city of Huntington Beach’s LCP, general plan, and zoning ordinance, as well as the Coastal Act. The Energy Commission, when exercising its jurisdiction, conducts a similar analysis and solicits and considers the views of the agencies that would otherwise have jurisdiction over a proposed project, such as the Coastal Commission.

Coastal Commission Report

The Coastal Commission submitted a report entitled, “Coastal Commission’s 30413(d) Report for the Proposed AES Southland, LLC, HBEP AFC” (Coastal Commission Report). (Ex. 4026.) At the August 6, 2014, evidentiary hearing, we asked the parties to provide discussion and analysis on the role of the Coastal Commission in this proceeding and how, if no report were required under section 30413(d), we should treat the Coastal Commission Report. (08/06/2014 RT 102:21-103:23.)

The Energy Commission has two separate, but related, processes regarding power plant siting. First, there is a notice of intention (“NOI”) process that makes a preliminary determination of suitability for new power plant sites and related facilities. (Pub. Res. §§ 25502, 25516.6.) In NOI proceedings, Coastal Commission involvement is required. (Pub. Res. Code §30413, subd. (d).)

Second, the Commission has an Application for Certification (“AFC”) proceeding, for facilities on sites previously certified through the NOI process or for power plants exempt from the NOI process, such as natural-gas fired facilities. (Pub. Res. Code §25519, et seq) In AFC proceedings, such as the HBEP, Coastal Commission involvement is permissible, but not mandated. (Pub. Res. Code § 30413(e).)

Applicant urges that the Coastal Commission was not required to participate in the proceeding because this is an AFC, not an NOI. (AES Southland Development LLC’s Opening Brief after Evidentiary Hearings (TN202959), pp. 1-9.) Staff argues that, whether mandatory or permissive, the Coastal Commission Report should be given “due deference” pursuant to the April 14, 2005 Memorandum of Understanding between the Energy Commission and the Coastal Commission. (Energy Commission Staff’s Opening Brief (TN202952), pp. 5-8.) Applicant appears to agree with this position. (AES Southland Development LLC’s Reply Brief after Evidentiary Hearings (TN202980), p. 3.)

Intervenor Monica Rudman invites us to reopen the evidentiary record to incorporate the Coastal Commission Report as her rebuttal testimony. (Monica Rudman’s Rebuttal to Opening Briefs (TN 202979), pp. 2-3.) The Coastal Commission Report is already part of the evidentiary record and we thus deny Ms. Rudman’s motion to reopen the evidentiary record.

We concur with Energy Commission staff’s position and treat the Coastal Commission Report as the comments and recommendations of an interested agency on matters within the jurisdiction and expertise of that agency. (Cal. Code Regs., tit. 14, § 1744, subd. (e).) We thus look at each individual comment made by the Coastal Commission and determine whether the recommendations made are supported by evidence in the record. (*Id.* at p. 8-13 (discussing the recommendation of the Coastal Commission in several substantive areas of this Decision).) Please see the discussion of the Coastal Commission Report in the following sections of this Decision: **FACILITY DESIGN, BIOLOGICAL RESOURCES, SOIL AND WATER RESOURCES, GEOLOGICAL AND PALEONTOLOGICAL RESOURCES**, and **TRAFFIC AND TRANSPORTATION**.

Coastal-Dependent Development

The HBEP would be located on the same property as the existing HBGS power plant, and all of its associated infrastructure would be on-site at the existing HBGS. Public

Resources Code section 30101 defines “Coastal-dependent development or use” as “any development or use which requires a site on, or adjacent to, the sea to be able to function at all.” Locating the HBEP and its associated facilities/features on-site at the HBGS allows the HBEP to utilize the plant’s infrastructure (natural gas supply lines and electricity transmission lines), thereby avoiding off-site construction of new linear facilities. Constructing the HBEP on this site would avoid the need to develop in areas of Huntington Beach unaccustomed or unsuited to this type of industrial development. In addition, by shutting down the existing HBGS, the proposed HBEP would enhance the marine environment by reducing the use of seawater for once-through cooling.

Coastal-Dependent Industrial Facilities

Public Resources Code section 30260 provides, in part: “Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. . .”

The HBEP, proposed inside the existing boundaries of the HBGS site, is consistent with the Coastal Act policy that prefers on-site expansion of existing power plants to development of new power plants in undeveloped areas of the Coastal Zone. The HBGS property is zoned for public utility use and has been previously developed in its entirety for industrial uses. Construction of the HBEP on the site of an existing industrial property with access to existing power infrastructure, and with limited adjacent sensitive uses, has greater relative merit to development of a power plant at an alternative site. Therefore, the HBEP is consistent with Section 30260 of the Coastal Act.

Public Access Policies

Public Resources Code section 30211 provides: “Development shall not interfere with the public’s right of access to the sea where acquired through the use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.”

The Coastal Act section 30212 (a) provides: “Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby; or (3) agriculture would be adversely affected...”

Here, the Pacific Coast Highway, which is between HBGS and the Huntington Beach State Beach, already provides adequate access to the sea. As HBEP will occupy a portion of the long-standing HBGS industrial facility, whose fence lines will not change in a way to deny access to the shoreline, the proposed project is consistent with Coastal Act access policies.

Public Use Area

The Energy Commission must require the establishment of an area for public use as a condition of certification of a facility proposed in the Coastal Zone. (Pub. Res. §25529.)

The HBEP would be located entirely within the site of the existing Huntington Beach Generation Station and no new off-site facilities would be constructed. The Huntington State Beach is located to the southwest of the project site across the Pacific Coast Highway, which provides two miles of existing public access to the coast. An additional 3.5 miles of city beach with public access continues north of the state beach. (Ex. 2000, p. 4.5-1 .)

Therefore, we find that reasonable access for public use of the nearby coastal areas currently exists and no additional lands would need to be acquired by the applicant.

The Coastal Commission Report asserts that public access will be adversely impacted by the use of beach parking for construction worker use. (Ex. 4026, pp. 2, 6-8.) The recommendation is more fully analyzed in the **TRAFFIC AND TRANSPORTATION** section of this Decision.

We thus find that the HBEP is consistent with the Coastal Act requirements.

Environmentally Sensitive Habitat Areas

Public Resources Code section 30240 (b) provides: “Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.”

The Magnolia Marsh is adjacent to the HBEP site, and there are several recreational resources within one mile of the HBEP site. (Ex. 2000, p. 4.5-6.) The **BIOLOGICAL RESOURCES** section of this Decision provides a detailed analysis the HBEP’s compliance with this Coastal Act requirement. The **VISUAL RESOURCES** section addresses the HBEP’s visual impacts on surrounding land uses (including recreational resources), and how the proposed HBEP would comply with this section of the Coastal Act.

From a land use perspective, construction and operation of the HBEP would not significantly impact environmentally sensitive habitat areas and parks, including the Magnolia Marsh and the recreational facilities surrounding the HBGS site, because the HBEP would be entirely within the fenced perimeter of the HBGS, which is an existing power plant facility.

We therefore find that the HBEP has been sited and designed to avoid impacts to sensitive habitat and recreation areas.

City of Huntington Beach LORS

General Plan

State law requires each county and city to prepare and adopt a comprehensive and long-range general plan for its physical development (Gov. Code § 65200.) The general plan must include elements such as land use, circulation, housing, open-space, conservation, safety, and noise. (Gov. Code §65302.) In Huntington Beach, the elements of the General Plan have been further organized into statements of goals, objectives, policies, and implementation programs. (Ex. 2000, 4.5-13.)

The evidence establishes that the Huntington Beach General Plan adopted in 1996 (1996 General Plan) controls overarching land use policy for the HBEP site. The land use element of the 1996 General Plan designates the HBEP site as Public, which includes public utilities. The 1996 General Plan recognizes that the HBEP site has had a power plant on it the late 1950s, generally referring to it as the Edison Plant. (Ex. 2000, p. 4.5-13.)

Several land use elements, goals, and objectives relate to HBEP, including:

- Goal LU-2 seeks to ensure that development is adequately served by transportation and utility infrastructure, and public services.
- Goal LU 7 recognizes the value of diversity in land uses and provides for the accommodation of existing uses and new development consistent with the Land Use and Density Schedules. Policy 7.1.1 allows for the continuation of existing uses at their present locations.
- Goal LU-13 seeks to achieve the development of a mix of governmental service, institutional, educational and religious uses that support the needs of Huntington Beach's residents. Policy 13.1.1 allows for the continuation of existing uses at their present locations, including the continuation of existing and development of new uses that support the needs of existing and future residents.
- Table LU-4 in the Community Development Chapter identifies the "Edison Plant" on the Community District and Subarea Schedule. The site characteristic is listed as "Permitted Use," and the "Standards and Principles" section provides as follows: Category: Public ("P") and Conservation ("OS-C"): Wetlands Conservation, Utility Uses. Under the characteristic "Design and Development," the General Plan provides that it shall be in accordance with Policy LU 13.1.8, which states as follows: "Ensure that the city's public buildings, sites, and infrastructure improvements are designed to be compatible in scale, mass, character and architecture with existing buildings and pertinent design characteristics prescribed

by this General Plan for the district or neighborhood in which they are located, and work with non-city public agencies to encourage compliance.”

(Ex. 2000, pp. 4.5-13 – 4.5-14.)

The project would develop and operate new power generators within the site of an existing electrical generating facility. This reuse of the existing facility would provide electrical service both locally and regionally, as well as provide employment to local residents. We thus find that the HBEP would be consistent with the Huntington Beach General Plan.

Coastal Element/Local Coastal Program

The proposed project is located in the Coastal Zone, and is subject to the Coastal Element of the General Plan. The Coastal Element also is part of the city’s certified Local Coastal Program (LCP). The LCP consists of a Land Use Plan (Coastal Element) and an Implementation Program. The Implementation Program consists of the city’s Zoning Code, zoning district maps, and six specific plans. The existing HBGS site is recognized in the Coastal Element as an important coastal-dependent facility within the Coastal Zone. The HBEP is dependent on the existing infrastructure serving the HBGS, but would not be dependent on the use of the coast itself or ocean water. The Coastal Element identifies several issues relating to energy facilities. The emphasis in these provisions is on compatibility with surrounding uses and neighborhood characteristics, particularly as it relates to impacts on the aesthetic qualities of the coastal environment and minimalization of impacts to biological resources. (Ex. 2000, p. 4.5-15.)

Development of the HBEP on the current site of the HBGS would avoid potential impacts due to the development of new water, gas and sewer lines, a new switchyard and transmission lines and would avoid development of an undeveloped site in the coastal area. The proposed HBEP would also eliminate the need for once-through cooling with ocean water, avoiding the impacts to local wildlife and water quality such processes entail.⁴

Accordingly, we find the HBEP to be consistent with the Huntington Beach Coastal Element and LCP.

Zoning Ordinance

The HBEP site is zoned Public–Semipublic (PS), and is included in the Coastal Zone Overlay District (CZ), as well as the Oil Production Overlay District (O). The Huntington

⁴ Please refer to the **VISUAL RESOURCES** section of this Decision for a discussion of the project’s consistency with LORS relevant to the project’s visual impact. For a discussion of the project’s impacts on the wetlands adjacent to the site, please refer to the **BIOLOGICAL RESOURCES** section of this Decision.

Beach Zoning and Subdivision Ordinance defines a power plant as an Energy Facility (Section 203.06) and is classified as a Major Utility use within the Public and Semipublic Use Classifications (Section 204.08). Major Utility uses are permitted in the Public – Semipublic District upon the issuance of a Conditional Use Permit by the city of Huntington Beach (Section 241.02). Within the CZ overlay district, any development requires the issuance of a Coastal Development Permit by the city of Huntington Beach (Section 245.10). But for the Energy Commission’s exclusive authority to license the project, siting the HBEP at the proposed location would require the following land use actions by the city of Huntington Beach:

- A Variance to exceed the maximum allowable structure height within the PS zone.
- A Conditional Use Permit to allow development of a Major Utility use within the PS zone.
- A Coastal Development Permit to allow development within the CZ overlay district.

(Ex. 2000, p. 4.15-17.)

Variance

Under the zoning and subdivision ordinance in the city of Huntington Beach, structures in the zoning area of the HBEP are limited to 50 feet. The proposed HBEP would utilize stacks of approximately 120 feet in height in order to meet air quality permitting standards of the South Coast Air Quality Management District. In order for the HBEP to locate in the area, it would thus need a variance. (Ex. 2000, pp. 4.5-17 – 4.5-18.)

To grant a variance, we must make the following findings:

1. No special privilege will be granted by the approval of a variance.
2. Special circumstances exist that would deprive a property of privileges enjoyed by other properties in the vicinity if the variance were not granted.
3. The granting of the variance is necessary to preserve the enjoyment of one or more substantial property rights.
4. The granting of the variance will not be materially detrimental to the public welfare or injurious to property in the same zone and is consistent with the General Plan.

(Huntington Beach Municipal Code section 241.10 (B).)

The Huntington Beach City Council adopted its Resolution No. 2014-18 on April 7, 2014. While recognizing the exclusive permitting jurisdiction of the Energy Commission, the City Council nonetheless stated that, if it had jurisdiction over the HBEP, it would

grant the necessary variance. The approval of the variance relied on the submission of architectural and landscaping plans for screening.⁵ (Ex. 1134.)

We give due deference to the determination by the city of Huntington Beach of its own ordinances. (Cal. Code Regs., tit. 14, §1744(e).) The evidence contained in Resolution No. 2014-18 is sufficient to support the necessary findings for a variance related to the overheight of the structures proposed by the HBEP. The City Council cited to the long history of the power plant being on the site of the HBEP, as well as the significant reduction in height from the current HBGS. These factors allowed them to conclude that denying a variance would result in a loss of a substantial property right, especially when coupled with the General Plan and zoning designations on the site authorizing the continued existence of a power plant.

We therefore conclude that a variance could properly issue for the HBEP.

Conditional Use Permit

A conditional use permit (CUP) may be granted only where:

1. The establishment, maintenance, and operation of the use will not be detrimental to the general welfare or to neighboring property values.
2. The granting of the CUP will not adversely affect the General Plan.
3. The proposed use will comply with the provisions of the planning and zoning codes.

(Huntington Beach Municipal Code section 241.10 (A).)

The evidence shows that a conditional use permit could be issued for the HBEP. There would not be detrimental effects from the continued use of the project site for power generation as it would use existing transmission and other linear facilities. The General Plan designation and zoning code already authorize use of the site for electrical generation. (Ex. 2000, pp. 4.5-20 - 4.5-21.)

We therefore find that a conditional use permit could be issued for the HBEP.

⁵ An assessment of applicable city policies regarding screening and design improvements and the proposed architectural improvement plan is included in the VISUAL RESOURCES section of this Decision.

Coastal Development Permit Findings:

A coastal development permit may be granted where:

- 1. The proposed project is consistent with the General Plan, including the Local Coastal Program;
- 2. The project is consistent with the CZ Overlay District, the base zoning district, and other provisions of the Huntington Beach Municipal Code.
- 3. The proposed development can be provided with infrastructure consistent with the Local Coastal Program; and
- 4. The development will meet the public access and public recreation policies of the California Coastal Act.

(Huntington Beach Municipal Code §245.30.)

As described above, the HBEP would be built on lands designated in the Huntington Beach General Plan as Public (P). The Coastal Element identifies the existing land use of the site as a regionally serving electrical generating plant, in which Coastal Element policy provides for the use to continue. The base zoning is PS; the site is within the CZ Overlay district. The HBEP would reuse existing onsite potable water, natural gas, storm water, process wastewater and sanitary pipelines, and electrical transmission facilities.

Finally, as outlined above, the HBEP meets the requirements of public access and public recreation policies contained of the California Coastal Act.

We therefore find that the HBEP could properly receive a coastal development permit.

Because the project would qualify for the issuance of a variance, a conditional use permit, and a coastal development permit, we find that the HBEP is consistent with the Huntington Beach zoning code.

Southeast Coastal Redevelopment Plan

The proposed HBEP is within the project area of the Southeast Coastal Redevelopment Plan. As required by Assembly Bill (AB) 1X 26, the city's redevelopment agency was dissolved in early 2012, with the city being designated as the successor agency and the Huntington Beach Housing Authority as the successor agency for housing-related items. Under AB 1X 26, the redevelopment agency can only make payments that are on the approved Enforceable Obligation Payment Schedule (EOPS) and the Recognized Obligation Payment Schedule (ROPS). Improvements to the HBEP site are not included on the EOPS or ROPS. While no redevelopment funds would be available for the city to contribute to screening, design, and environmental improvements at the site, the city of Huntington Beach and the applicant have developed an architectural improvement plan

that would improve the visual characteristics of the proposed project. An assessment of applicable city policies regarding screening and design improvements and the proposed architectural improvement plan is included in the **VISUAL RESOURCES** section of the FSA.

City of Long Beach LORS

Staging for HBEP construction would include the use of sixteen acres of vacant land at the AES Alamitos Generation Station (AGS) in the city of Long Beach for off-site construction lay down. AGS has a general plan designation of “Mixed Use District” and is located in Subarea 19 of the South East Area Development and Improvement Plan (SEADIP) specific plan. The zoning for the laydown area allows for and is currently developed with industrial uses. The activities related to HBEP construction at AGS would be limited to outdoor component storage only. No construction or assembly of equipment would take place at AGS. The offsite construction lay down area will be ancillary to the existing industrial use at AGS which is an allowable use within Subarea 19.⁶ (Ex. 2000, p. 4.5-22.)

We therefore find that use of the AGS site for HBEP construction laydown is consistent with the LORS of the Long Beach General Plan, SEADIP, and zoning code. We further hold that there is no conflict between a land use plan and the use of the AGS site for the HBEP construction laydown yard.

Based on our prior findings of the HBEP’s consistency with the Huntington Beach General Plan, Huntington Beach Coastal Plan, Huntington Beach zoning code, Long Beach General Plan, Long Beach zoning code, and related land use LORS, we find that the HBEP would not conflict with any applicable land use plans, policies, or regulations. The HBEP therefore does not present a significant impact to land use.

Land Use Compatibility

Land use compatibility refers to the physical compatibility of planned and existing land uses. Administrative or conditional use permitting requirements and project reviews under CEQA are in place to evaluate the compatibility of projects that are not a permitted use or that have elements that may adversely impact public safety, the environment, or that could interfere with or unduly restrict existing and/or future permitted uses. As noted in the discussion above, development of the proposed project and its associated features/facilities are compatible with existing surrounding land uses.

⁶ For a detailed discussion of the heavy haul routes and equipment staging process see the TRAFFIC AND TRANSPORTATION section of this Decision.

The proposed project would not result in any physical land use incompatibilities with the existing surrounding land uses in the following areas: **AIR QUALITY, NOISE AND VIBRATION, PUBLIC HEALTH, HAZARDOUS MATERIALS MANAGEMENT, TRAFFIC AND TRANSPORTATION, AND VISUAL RESOURCES**. Therefore, we conclude that the proposed project would not result in any physical land use incompatibilities with the existing surrounding land uses.

CUMMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs. §15065(a)(3)).

There are several large-scale planned and approved projects in the immediate vicinity of the proposed HBEP, summarize in **Land Use Table 4**.

**Land Use Table 4
Cumulative Projects**

Project Title	Location	Project Description	Status of Project
Demolition of retired HBGS generating units	HBGS facility, 21730 Newland St, Huntington Beach	Units 3 & 4 of existing HBGS are slated for demolition in 2016.	Pending current project approval.
Poseidon Desalination Plant	HBGS facility, 21730 Newland St, Huntington Beach	Seawater intake pretreatment facilities	Approved by city in 2006. Permits are currently being secured. Waiting for Coastal Commission action. Construction estimated from Summer 2014 to Summer 2017.
Newland Street Residential (Pacific Shores)	West of Newland St, south of Lamond Dr, north of Hamilton, Huntington Beach	204 multi-family residential units and 2 acre park	Completed
Ascon Landfill Site	Ascon Landfill, Southwest corner of Magnolia St and Hamilton Ave, Huntington Beach	Industrial and oil field waste removal from defunct landfill	On-going project
The Strand	155 5th Street, Huntington Beach	Hotel, retail, restaurants, and parking	Completed and opened May 16, 2009
Pierside Pavilion Expansion	2000 Pacific Coast Hwy, Huntington Beach	Expansion of the existing Pierside Pavilion development	Approved by Huntington Beach City Council Sept. 2012

Project Title	Location	Project Description	Status of Project
Pacific City	21002 Pacific Coast Highway, Huntington Beach	31-acre site broken into 3 parcels. One for 516 residential apartments and two for commercial, retail and hotel (250-room, 8-story)	Entitlements approved 2004. Pending building permits.
Hilton Waterfront Beach Resort Expansion	21100 Pacific Coast Hwy, Huntington Beach	Expansion of existing resort, including a nine-story tower providing a total of 156 new guestrooms	Approved by Planning Commission in March 2012. Construction to start in 2014, six month construction period
Newland Street Widening	Newland Street, Huntington Beach	Street widening	Completed
P2-92 Sludge Dewatering and Odor Control	Brookhurst St and PCH, and Huntington State Beach and Santa Ana River	Construction of facilities to replace existing sludge dewatering system and associated odor control ventilation system in Plant 2.	No planned date for construction

(Ex. 2000, p. 4.5-27.)

The proposed project would not make a significant contribution to regional impacts related to new development and growth. The project is planned to serve the existing and anticipated electrical needs of the growing population in the project area by connecting to the existing electric system and other utility infrastructure. The land use effects of the proposed project in combination with past, present, and reasonably foreseeable projects in the area would not be cumulatively considerable. Therefore, cumulative land use impacts of the proposed HBEP would be less than significant.

PUBLIC COMMENT

No public comments were received on the topic of land use.

FINDINGS OF FACT

Based on the evidence, the Commission makes the following findings:

1. The HBEP is not subject to a Williamson Act contract.
2. The project will not result in conversion of farmland to non-agricultural uses.
3. The HBEP, a repurposing of an existing industrial use, will not physically divide or disrupt an established community.
4. The project will not conflict with a habitat or conservation plan.
5. The project will be built on private lands.

6. The project will not contribute to a significant cumulative impact to land use inconsistencies within the area surrounding the project site.
7. The construction site has a Huntington Beach General Plan designation of Public.
8. The project site in the city of Huntington Beach has a zoning designation of PS and is within the Coastal Zone Overlay District.
9. The project would require a variance, a conditional use permit, and a coastal development permit but for the exclusive licensing jurisdiction of the California Energy Commission.
10. The findings in support of a variance under the Huntington Beach Municipal Code can be made.
11. The findings in support of a conditional use permit under the Huntington Beach Municipal Code can be made.
12. The findings to support the granting of a coastal development permit under the Huntington Beach Municipal Code can be made.
13. The construction laydown yard in the city of Long Beach has a General Plan designation of Mixed Use.
14. The construction laydown yard in the city of Long Beach is within the South East Area Development and Improvement Plan.
15. The HBEP is compatible with surrounding land uses and will not result in any unmitigated public health or other environmental impacts to sensitive receptors.

CONCLUSIONS OF LAW

1. The record contains an adequate analysis of the land use laws, ordinances, regulations, and standards that are relevant to the project and establishes that the project will not create any unmitigated, significantly adverse land use effects as defined under the California Environmental Quality Act.
2. With the making of the necessary findings for a variance, conditional use permit, and coastal development permit, the HBEP is consistent with the land use policies, plans, and regulations of the city of Huntington Beach.
3. The construction laydown yard in the city of Long Beach is consistent with the land use policies, plans, and regulations of the city of Long Beach.
4. The HBEP complies with the provisions in Chapter 3 of the Coastal Act.

B. TRAFFIC AND TRANSPORTATION

INTRODUCTION

This section addresses the extent to which the HBEP will affect the local transportation network. The record contains 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 project and associated facilities; (4) the frequency of trips and probable routes associated with the delivery of hazardous materials; and (5) the potential effect of project operations on local airport flight traffic.

Project impacts were evaluated according to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. As more fully discussed below, we have considered whether HBEP will:

- Conflict with adopted policies, plans, or programs;
- Cause a substantial increase in traffic when compared with the existing traffic load and capacity of the street system;
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature or incompatible uses; or
- Result in inadequate parking capacity or a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks or in inadequate emergency access. (CEQA Guidelines, Appendix G.)

In addition, we have reviewed the HBEP's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to traffic and transportation.

The evidence was undisputed. (07/24/14 RT 19:15-19:22; Exs. 1001, 1017, 1037, 1046, 1087, 1090, 1112, 1132, 1133, 1137, 2000.)

SETTING

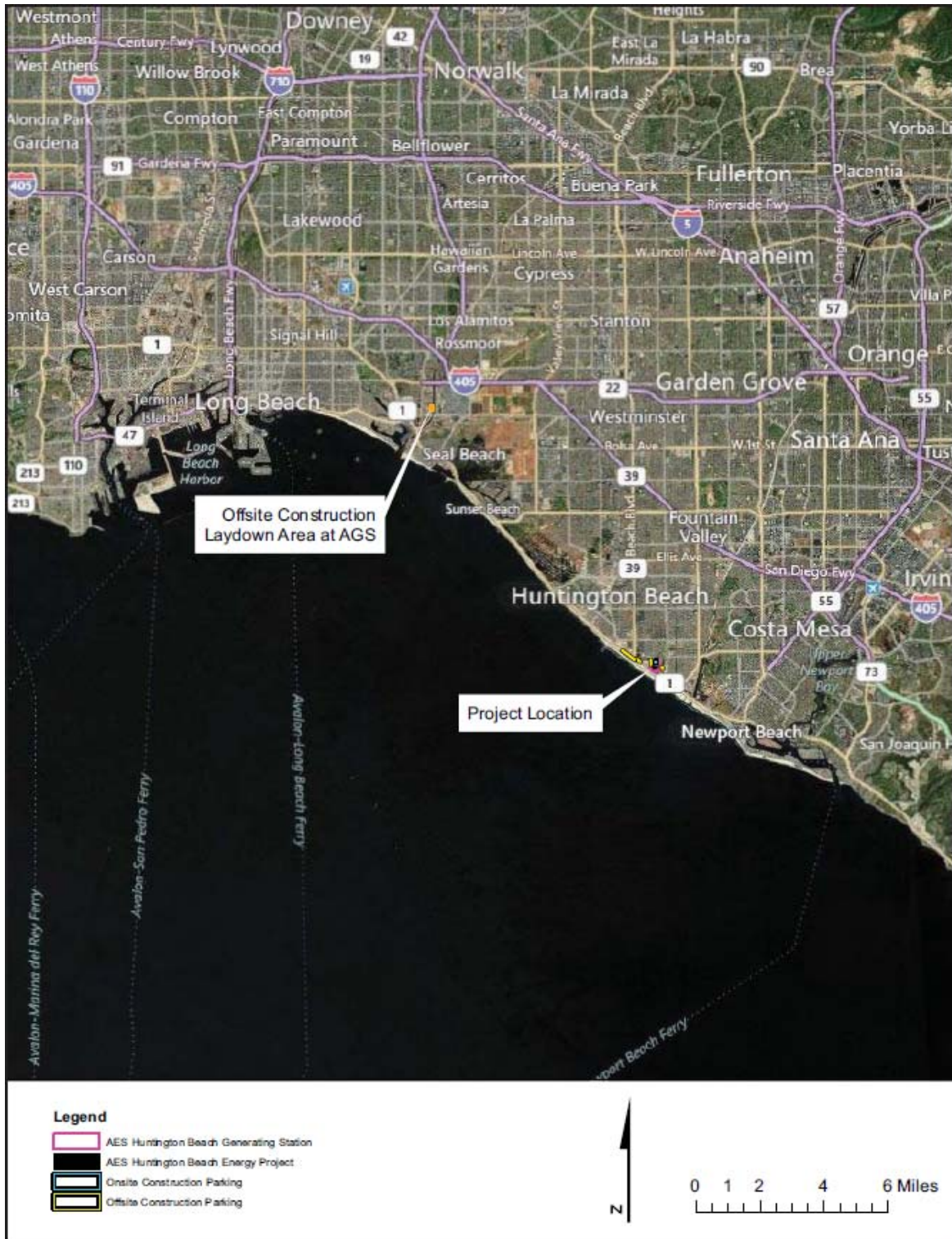
*For general project description, including location of the facility and the equipment to be installed, please see the "**PROJECT DESCRIPTION AND PURPOSE**" section of this Decision (Section II, above).*

The proposed HBEP site is located within the incorporated city of Huntington Beach at the northeast corner of the intersection of Pacific Coast Highway (PCH, State Highway 1) and Newland Street. The site is currently developed with an operating electrical generation facility, the Huntington Beach Generating Stations (HBGS). During construction, the project also includes off-site locations for both equipment laydown and construction workforce parking. (Ex. 2000, p. 4.10-2.)

HBEP Site

The HBEP site is located in the coastal zone of Huntington Beach within western Orange County. The area is largely built out with a range of residential, commercial and industrial land uses. See the **LAND USE** section of this Decision for a discussion of the surrounding land uses. The city of Huntington Beach roadway system is a predominantly grid network with roadways connecting north to I-405 (Huntington Beach Freeway) and south to PCH. See **Traffic and Transportation Figure 1** for a regional map of roadways and surrounding cities. (Ex. 2000, p. 4.10-2.)

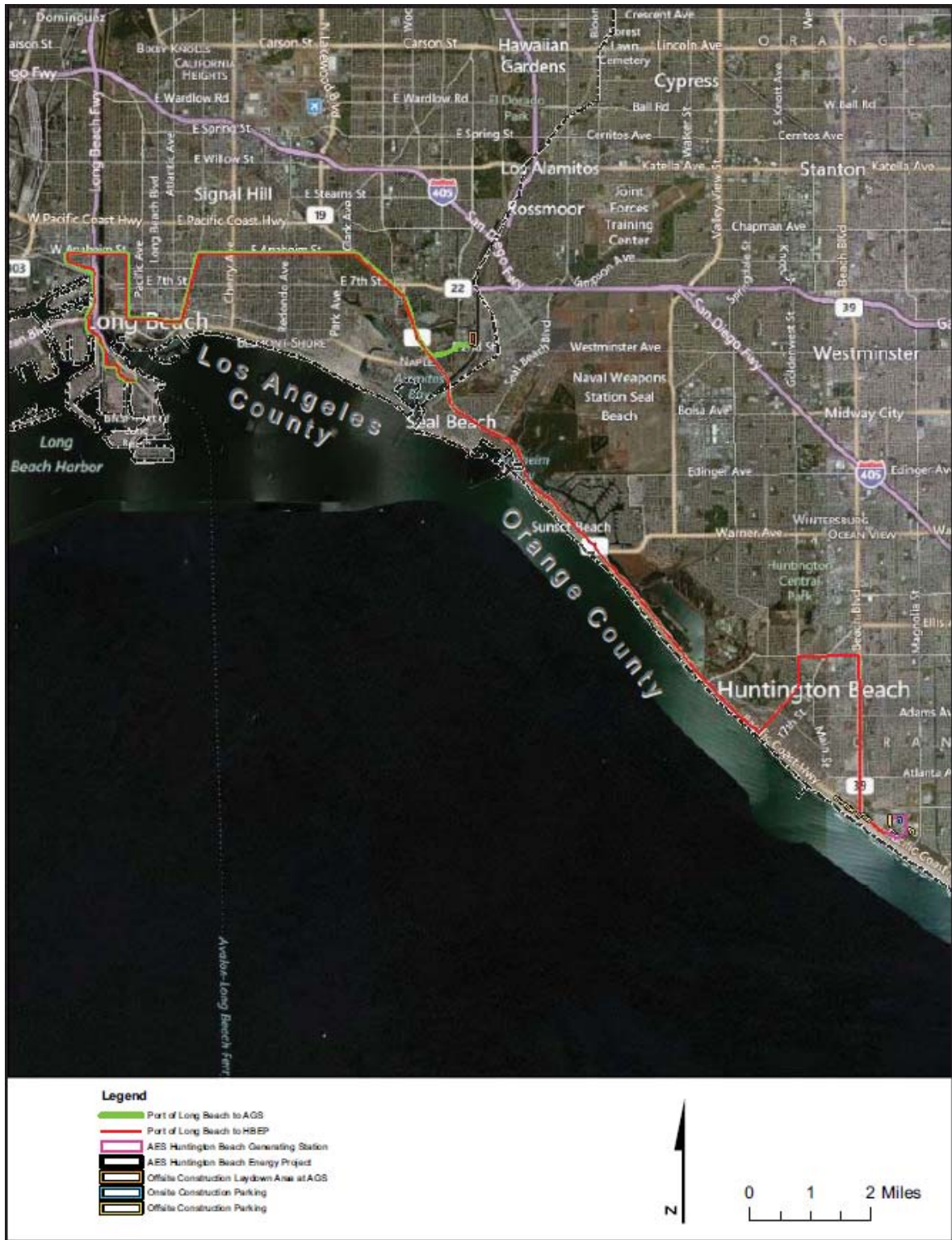
Traffic and Transportation Figure 1 Regional Transportation Setting



Source: Ex. 2000, Traffic and Transportation Figure 1

Construction of the HBEP would require the delivery of large components by way of heavy/ oversized trucks from the Port of Long Beach to the project site. The use of heavy/oversized trucks would be subject to the permitting requirements of the local cities and counties listed in the LORS table in **Traffic and Transportation Table 1**. The proposed route from the Port of Long Beach to the HBEP site is shown in **Traffic and Transportation Figure 2**; the roadways that would be affected by the proposed route are listed in **Traffic and Transportation Table 2** .(Ex. 2000, pp. 4.10-2, 4.10-6.)

Traffic and Transportation Figure 2 HBEP Heavy Haul Route



Source: Ex. 2000, Traffic and Transportation Figure 3

Construction Laydown

In addition to deliveries from the Port of Long Beach to the HBEP site, large and heavy components, such as combustion turbine generators, components of the HRSG, transformers, and other oversize and heavy components, will be transported by ship or rail to the Port of Long Beach. From the Port of Long Beach, this equipment will be stored at a laydown yard located on a 16-acre undeveloped portion of the existing AES Alamitos Generating Station (AGS). AGS is approximately 12 miles from the project site. Transportation of the components from AGS requiring the use of heavy/oversized trucks will be subject to the permitting requirements of the local cities and counties listed in the LORS table in **Traffic and Transportation Table 1**. The proposed route from the Port of Long Beach to AGS and the route from AGS to the HBEP site is included in **Traffic and Transportation Figure 2**; the roadways that would be affected by the proposed routes are listed in **Traffic and Transportation Table 2**. (Ex. 1001, §5.12.1.2; Ex. 2000, pp. 4.10-2, 4.10-6.)

Existing Regional and Local Transportation Facilities

The following roadways compose the study area and will be used by construction and demolition workers, HBEP operational employees, as well as by delivery trucks for construction materials and are shown on **Traffic and Transportation Figure 2**. (Ex. 2000, p. 4.10-5.)

Pacific Coast Highway (PCH, State Highway 1)

The California Department of Transportation (Caltrans) has jurisdiction over PCH; it is thus subject to state design standards. The Orange County Transportation Authority (OCTA) designates PCH as a Smart Street Arterial. Smart arterials are six to eight lane roadways of enhanced capacity due to the implementation of signal synchronization, bus turnouts and other traffic improving techniques. Smart streets carrying capacities can range from 60,000 to 79,000 vehicles per day. PCH provides inter-regional access connecting the city of Huntington Beach to other coastal communities. (Exs. 1001, §5.12.1.1; 2000, p. 4.10-5.)

Atlanta Avenue

Atlanta Avenue is a four-lane, east-west primary arterial that connections downtown Huntington Beach in to the west to Brookhurst Street in the east. Traffic volumes along Atlanta Avenue average 10,000 to 18,000 vehicles per day. (Ex. 1001, §5.12.1.1.7.)

Adams Avenue

Adams Avenue is a six-lane east-west major arterial. Traffic volumes along Adams Avenue average from 18,000 up to 38,000 vehicles per day. (Ex. 1001, §5.12.1.1.8.)

Beach Boulevard (State Route 39)

Beach Boulevard is the other Smart Street Arterial located within the city. Beach Boulevard is a six to eight lane arterial and is the major north south roadway in the city connecting PCH to I-405 (Huntington Beach Freeway). (Ex. 2000, p. 4.10-5.)

Brookhurst Street

Brookhurst is a north/south Major Arterial which connects PCH through the city of Fountain Valley. Brookhurst is a six lane divided roadway with a carrying capacity of up to 50,000 vehicles per day. (Ex. 2000, p. 4.10-5.)

Magnolia Street

Magnolia is a north/south Primary Arterial which is a four lane divided roadway connecting PCH north through the city of Huntington Beach to the city of Fountain Valley. Maximum daily traffic volume is 35,000 vehicles per day. Magnolia Street is the first Primary Arterial south of the project site directly adjacent to the Magnolia Marsh. (Ex. 2000, p. 4.10-5.)

Newland Street

Newland Street is a Secondary Arterial, bordering the project site to the north. Newland runs north/south from PCH to I-405 and as a secondary arterial has a daily maximum carrying capacity of 25,000 vehicles. (Ex. 2000, p. 4.10-5.)

Other Transportation Systems

Freight and Passenger Rail

A Union Pacific Railroad rail line is located in the city parallel to Gothard Street and runs north/ south from the northern city limits to just north of Garfield Avenue. Several spur lines provide access to manufacturing uses and lumber yards. There are currently no passenger rail lines within the city limits.

Bus Service

The Orange County Transportation Authority (OCTA) provides public transportation in the city. Within the city limits, OCTA operates 16 bus lines providing local and regional service. To encourage ridership, two park and ride facilities are located within the city. The facilities are located at the Goldenwest Transit Center at Gothard Street and Center Avenue and at the McDonnell Douglas Corporation at Bolsa Avenue and Bolsa Chica Street.

Bicycle and Pedestrian Facilities

The city of Huntington Beach provides a comprehensive network of Class II (on-street, striped) bicycle lanes throughout the city. PCH includes Class II and Class I (off road, paved) bicycle lanes connecting the state and city beaches. The roadways in the project

area provide paved pedestrian sidewalks which provide access to the Huntington Beach bike trail and beach access along PCH.

Airports/Helipads

The nearest public airport is John Wayne/Orange County Airport which is approximately six miles east of the project site. There are six private or public helipads within seven miles of the project site. The nearest helipads are operated by the city of Huntington Beach at the civic center and the police department which are 2.5 and 3.5 miles away respectively.

Construction Workforce Parking

A maximum of 330 parking spaces would be required for construction and demolition workforce parking. These spaces would be provided in four off-site locations and one on-site area. Two of the off-site parking areas would be located in the city of Huntington Beach public parking lots south of the intersection of Beach Boulevard and PCH, directly abutting the beach to the south and resort hotels to the north. One off-site parking area would be located on an unpaved dirt lot directly west of the project site along Newland Street; this area would abut an existing mobile home park. The final off-site parking area would be located on a portion of the existing but non-operational Plain America tank farm located directly east of the project site. The on-site parking area would be located on the northern portion of the project site. All of the proposed parking areas are shown in **Traffic and Transportation Figure 3** (Ex. 1001, §§ 5.12.1.2, 5.12.2.6; Ex. 2000, pp. 4.10-2, 4.10-11 – 4.10-12.)

Operation Workforce Parking

During operations, HBEP would require an average workforce of 33, in three operating shifts, 24 hours per day, seven days per week. Parking for these employees would be accommodated on site. (Ex. 2000, p. 4.10-14.)

STANDARDS OF REVIEW/LAW, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The California Environmental Quality Act (CEQA)¹

Significance criteria used in this document for evaluating environmental impacts are based on the CEQA Guidelines, the CEQA Environmental Checklist for Transportation/Traffic, and applicable LORS used by other governmental agencies. Specifically, staff analyzed whether the proposed project would result in the following:

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We may refer to the statute and the Guidelines collectively as “CEQA”.

1. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
2. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
3. Conflict with an applicable congestion management program, including, but not limited to, level of service standards (LOS) and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
5. Result in inadequate emergency access;
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities;
7. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk;
8. Produce a thermal plume in an area where flight paths are expected to occur below 1,000 feet from the ground²; or
9. Have individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts.

(Ex. 2000, pp. 4.10-4 – 4.10-5.)

Laws, Ordinances, Regulations, and Standards (LORS)

Traffic and Transportation Table 1 provides a general description of adopted federal, state, and local LORS pertaining to traffic and transportation that apply to this project.

² The FAA recommends that pilots avoid overflight of plume-generating industrial sites below 1,000 feet AGL (FAA 2006).

**Traffic and Transportation Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
Federal	
Title 49, Code of Federal Regulations, Parts 171-177	Requires proper handling and storage of hazardous materials during transportation.
Title 14, Code of Federal Regulations, Section 77.13 (2)(i)	This regulation requires notification of the Federal Aviation Administration (FAA) of construction structures with a height greater than 200 feet from grade or greater than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.
State	
California Vehicle Code, Sections 13369, 15275, 15278	Requires licensing of drivers and the classification of license for the operation of particular types of vehicles. A commercial driver's license is required to operate commercial vehicles. An endorsement issued by the Department of Motor Vehicles (DMV) is required to drive any commercial vehicle identified in Section 15278.
California Vehicle Code, Sections 31303-31309	Requires transportation of hazardous materials to be on the state or interstate highway that offers the shortest overall transit time possible.
California Vehicle Code, Sections 31600-31620	Regulates the transportation of explosive materials.
California Vehicle Code, Sections 32100-32109	Requires shippers of inhalation hazards in bulk packaging to comply with rigorous equipment standards, inspection requirements, and route restrictions.
State	
California Vehicle Code, Sections 34000-34100	Establishes special requirements for vehicles having a cargo tank and for hazardous waste transport vehicles and containers, as defined in Section 25167.4 of the Health and Safety Code.
California Vehicle Code, Section 35550-35551	Provides weight guidelines and restrictions vehicles traveling on freeways and highways.
California Vehicle Code, Section 35780	Requires a single-trip transportation permit to transport oversized or excessive loads over state highways.
California Streets and Highways Code, Sections 660, 670, 672, 1450, 1460, 1470, 1480 et seq., 1850-1852	Requires encroachment permits for projects involving excavation in state and county highways and city streets.
California Health and Safety Code, Section 25160	Addresses the safe transport of hazardous materials.
California Department of Transportation CA Manual of Uniform Traffic Control Devices (MUTCD) Part 6 (Traffic Manual)	Provides traffic control guidance and standards for continuity of function (movement of traffic, pedestrians, bicyclists, transit operations), and access to property/utilities when the normal function of a roadway is suspended.
Local	
City of Huntington Beach General Plan, Infrastructure and Community Services Chapter III, Circulation Element	The Circulation Element is a required chapter of the General Plan which evaluates the transportation needs of the city and provides a transportation plan to meet those needs.
2011 Orange County Congestion Management Plan (CMP)	A required transportation planning document for urbanized areas with populations of 50,000. The CMP goals are to support regional mobility and air quality objectives by reducing traffic congestion.

Applicable LORS	Description
City of Seal Beach Municipal Code Section 8.10.135, "Movement of Oversize Vehicles"	Requires an oversize vehicle permit for vehicles, mobile equipment or loads which exceed the requirements of the Vehicle Code
City of Long Beach Municipal Code Chapter 10.41"Use of Streets by Overweight Vehicles"	
Orange County Code, Title 6, Division 4, Article 7 "Size, Weight and Load"	
Los Angeles County Code, Chapters 15.48 "Weight Limits", 16.22 "Moving Permits"	
City of Huntington Beach Municipal Code, Chapter 10.32 "Movement of Overloads"	

(Ex. 2000, pp. 4.10-3 – 4.10-4.)

**Traffic and Transportation Table 2
Heavy/ Oversized Truck Route, Affected Roadways**

County	City	Roadway
Los Angeles	Long Beach	Harbor Plaza*
		Pico Avenue*
		10 th Street*
		9 th Street*
		Santa Fe Avenue*
		W. Anaheim Street
		Magnolia Avenue
		Ocean Boulevard
		Alamitos Avenue
		Anaheim Street
		Pacific Coast Highway
		2 nd Street
		N. Studebaker Road
Orange	City of Seal Beach	Pacific Coast Highway
	City of Huntington Beach	Pacific Coast Highway
		Goldenwest Street
		Garfield Avenue
		Beach Blvd
		Newland Street

*Port of Long Beach Delivery Option
(Ex. 2000, p. 4.10-6.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The direct and indirect impacts of the proposed HBEP on traffic and transportation system are discussed in this section and based on an analysis comparing pre-HBEP and post-HBEP conditions. We analyze the HBEP's impacts for two separate future

scenarios: the peak construction month (when construction activity and employment would be maximized) and the first year of full operation.

Construction-Related Impacts:

Total Construction Traffic

To quantify the existing baseline traffic conditions, state highways, roadways, and intersections in the study area were analyzed in the AFC to determine their operating conditions. Based on the traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the volume/capacity (V/C) ratios and levels of service (LOS) have been determined for each intersection. (Ex. 2000, p. 4.10-7.)

LOS is a qualitative measure describing operational conditions within a traffic stream to describe and quantify the congestion level on a particular roadway or intersection and generally describes these conditions in terms of such factors as speed or vehicle movement. **Traffic and Transportation Table 3** summarizes roadway LOS for associated V/C ratios.

**Traffic and Transportation Table 3
Level of Service Criteria for Roadways and Intersections**

Level of Service	Volume/Capacity (v/c)	Delay per Vehicle (seconds)	Description
A	≤10	≤ 10	Free flow; insignificant delays
B	>10 and ≤ 20	>10 and ≤ 20	Stable operation; minimal delays
C	>20 and ≤ 35	> 20 and ≤ 35	Stable operation; acceptable delays
D	>35 and ≤ 55	>35 and ≤ 55	Approaching unstable flow; queues develop rapidly but no excessive delays
E	>55 and ≤ 80	> 55 and ≤ 80	Unstable operation; significant delays
F	>80	> 80	Forced flow; jammed conditions

(Ex. 2000, p. 4.10-7.)

Current Roadway Segment Conditions

Applicable LOS

LOS standards for the roadways and intersections near the HBEP are established by and under the jurisdiction of two different agencies: the Orange County Transportation Authority (OCTA) and the city of Huntington Beach. We use these LOS standards to evaluate potential HBEP-generated traffic impacts. The following is a list of the applicable LOS standards:

- Orange County Congestion Management Program (CMP): The CMP, which is under the jurisdiction of OCTA, establishes that the lowest acceptable performance standard for CMP intersections is LOS E. Seven CMP intersections are located within the city of Huntington Beach, but the HBEP would affect only: Beach Boulevard at PCH.

- City of Huntington Beach Circulation Element: The Circulation Element, a required portion of the city General Plan, evaluates the long-term transportation needs of the city and provides a plan to accommodate those needs. The major Circulation Element Policy, CE2.1.1, requires the minimum level of service standard for city intersections during peak hours is LOS D. The AM peak hour is 7:00 a.m.-9:00 a.m.; the PM peak hour is 4:00 p.m. – 6:00 p.m.

(Ex. 2000, pp. 4.10-8, 4.10-10.)

Traffic and Transportation Table 4 shows the current LOS at each of the affected intersections near the project site for the A.M. and P.M. peak hours. (Ex. 2000, pp. 4.10-10 - 4.10-11.)

**Traffic and Transportation Table 4
Existing LOS for A.M. Peak Hour and P.M. Peak Hour**

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Beach Boulevard and Highway 1	40	D	57	E
Newland Street and Highway 1	9	A	8	A
Newland Street and Hamilton Avenue	10	A	14	B
Brookhurst Street and Highway 1	37	D	121	F
Magnolia Street and Highway 1	13	B	15	B

(Ex. 2000, p. 4.10-10 – 4.10-11.)

Total Construction Traffic

The HBEP construction period is proposed to begin in the first quarter of 2015 commencing with the demolition of units 1 and 2 of the existing HBGS. The estimated completion of construction is the third quarter of 2022. The maximum number of workers is estimated to be 331 workers during peak the construction period. (Ex. 2000, p. 4.10-10.)

Construction-related traffic would include both private vehicles for employees, as well as equipment deliveries and construction-related truck trips. Equipment deliveries and construction truck traffic were estimated using a passenger car equivalent (PCE) factor of 1.5 cars per truck. The total workforce and truck trips generated during peak construction would be 734 daily one-way trips (662 worker trips added to 72 PCE truck trips). Approximately 672 of these one-way trips would occur during peak hours: 336 during the morning and evening peak hours. **Traffic and Transportation Table 5** summarizes all peak construction traffic generated by the HBEP. (Ex. 2000, p. 4.10-10.)

As summarized in the **Traffic and Transportation Table 5** below, 10 truck trips would occur in the AM peak hour and 10 in the PM peak hour. The remaining truck trips would occur during typical construction work hours throughout the remainder of the day. (Ex. 2000, p. 4.10-9.)

**Traffic and Transportation Table 5
One-Way Trips during Construction Period**

Vehicle Type	Average Daily Trips (ADT)	AM Peak Hour Trips		PM Peak Hour Trips	
		In	Out	In	Out
-	-	In	Out	In	Out
Delivery/ Haul Trucks¹	48	3	3	3	3
PCE (1.5)²	72	5	5	5	5
Workers	662	331	-	-	331
Total Construction Traffic In PCE	734	336	5	5	336

¹Worker traffic during the peak construction period. These figures assume the worst-case traffic scenario of one worker per car.

²Passenger Car Equivalent (PCE) is a ratio of 1.5 passenger cars for each truck.

(Ex. 2000, p. 4.10-10.)

As identified in **Traffic and Transportation Table 4**, two intersections have been identified as currently operating below LOS D during the PM peak hour: Beach Boulevard/ PCH and Brookhurst Street/ PCH. **Traffic and Transportation Table 6** and **Table 7** compare the existing AM and PM peak hour LOS with traffic volumes expected during the peak construction period. (Ex. 2000, p. 4.10-11.)

**Traffic and Transportation Table 6
Affected Intersections: AM Peak Hour Trips and LOS during Peak Construction**

Intersection	AM Peak Hour			
	Existing		With Project	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Beach Boulevard and Highway 1	40	D	45	D
Newland Street and Highway 1	9	A	16	B
Newland Street and Hamilton Avenue	10	A	11	B
Brookhurst Street and Highway 1	37	D	37	D
Magnolia Street and Highway 1	13	B	13	B

(Ex. 2000, p. 4.10-10.)

Traffic and Transportation Table 7
Affected Intersections: PM Peak Hour Trips and LOS during Peak Construction

Intersection	PM Peak Hour			
	Existing		With Project	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Beach Boulevard and Highway 1	57	E	61	E
Newland Street and Highway 1	8	A	8	A
Newland Street and Hamilton Avenue	14	B	22	C
Brookhurst Street and Highway 1	121	F	122	F
Magnolia Street and Highway 1	15	B	15	B

(Ex. 2000, p. 4.10-11.)

The project would result in a 7 percent increase in traffic at the Beach Blvd./Hwy 1 intersection and a less than 1 percent increase in traffic at the Brookhurst St./PCH intersection. While the temporary increase in traffic due to construction operations is minimal, two of the affected intersections presently operate below adopted LOS thresholds. To avoid worsening the LOS at these intersections, we impose Condition of Certification **TRANS-3** which would require the project owner to develop a Traffic and Control Plan (TCP). The TCP would require the project owner to monitor affected intersections and provide alternate routes and, if necessary, avoid the intersections operating below the acceptable levels of service to mitigate project impacts to local roadways during construction. (Ex. 2000, p. 4.10-11.) With the imposition and implementation of Condition of Certification **TRANS-3**, we find that potential impacts of the HBEP on existing intersections with unacceptable levels of service are mitigated to a level of “less than significant”.

Heavy/Oversized Loads

The HBEP would include the delivery of large components of the facility via heavy/ oversized deliveries. The deliveries would come from either the Port of Long Beach or via rail to an existing rail line on Anaheim Street to the AES Alamitos site, all of which are located within the city of Long Beach. The oversized vehicles are expected to be a maximum of 15’6” tall, 20 feet wide and 135 feet long and would require pilot vehicles escorted by California Highway Patrol (CHP) personnel. A map of the planned truck route is shown in **Traffic and Transportation Figure 2**. A list of the potentially affected roadways for the heavy/ oversized truck route is listed in **Traffic and Transportation Table 2**. (Exs. 1001, § ;2000, p. 4.10-6.)

The applicant anticipates approximately 112 oversized trips would be required for the project. Three trips would be planned on any given night occurring between the hours of 10 p.m. and 4 a.m. These heavy haul load trips are thus outside the AM and PM peak hour analysis. The proposed route would follow adopted truck routes in the region. We therefore find that there are no significant impacts to existing levels of service (LOS) from oversized or overweight truck trips.

Caltrans and each city and county located along the proposed truck shown on **Traffic and Transportation Figure 2** has its own LORS detailing the requirements to transport heavy or oversized loads through their respective jurisdictions, including the need to apply for and obtain a permit. Due to the presence of existing military, aeronautical and other large-scale industrial activities in the region, these agencies have experience routinely permitting oversized deliveries of comparable size as those proposed as part of HBEP. The project owner would be responsible for applying for all necessary permits from each jurisdiction along the proposed travel route. These permits may include the need for the project owner to establish and notify residents, businesses, emergency providers, and hospitals of any necessary road closures, temporary no parking zones, and alternative traffic routes along the truck route. (Ex. 2000, p. 4.10-6.)

Oversized or overweight trucks with unlicensed drivers could present significant hazards to the general public and/or damage roadways. To ensure that trucks comply with weight, size, and route limitations set by Caltrans and the cities and counties along the proposed route shown on **Traffic and Transportation Figure 3**, we impose Condition of Certification **TRANS-1**³ to require the project owner to obtain roadway permits for vehicle sizes and weights, driver licensing, and truck routes. However, even properly sized and licensed trucks could damage roadways, creating significant public hazards. Therefore, we also impose Condition of Certification **TRANS-2**, requiring that the project owner to repair and restore all roads damaged during construction activities. (Ex. 2000, p. 4.10-9.) With the imposition and implementation of Conditions of Certification **TRANS-1** and **TRANS-2**, we find that the potential impacts associated with oversized or overweight trucks are mitigated to a level of “less than significant”.

Condition of Certification **TRANS-3** requires the project owner, among other things, to obtain all necessary permits from affected jurisdictions for the transportation of heavy/ oversized equipment associated with the HBEP project. (Ex. 2000, p. 4.10-6.) We therefore impose Condition of Certification **TRANS-3** to avoid potential impacts to local roadways from the transportation of heavy and oversized equipment associated with the HBEP project. With the imposition and implementation of Condition of Certification **TRANS-3**, we find that potential impacts related to transportation of heavy and oversized equipment associated with the HBEP project to be mitigated.

³ All Traffic and Transportation Conditions of Certification are found in Appendix “A” to this Decision.

Linear Facilities

The HBEP would utilize a site already developed with an electrical generating facility. No new off-site linears would be required that will affect the transportation roadway system in the project area. (Ex. 2000, p. 4.10-11.) Accordingly, we find there would be no traffic impacts associated with the construction of off-site linears as part of the project.

Construction Workforce Parking

HBEP construction would require 331 workers on-site during the peak construction period. Areas proposed to provide this parking are listed in **Traffic and Transportation Table 7**; the listed facilities provide over 1,000 parking spaces that would be more than adequate for the highest number of workers anticipated for HBEP construction. **Traffic and Transportation Figure 3** is a map of the locations of the on- and off-site parking areas. In addition, **Traffic and Transportation Figure 4** shows the proposed route for shuttles from the off-site parking areas to the project site, with 13 round trips from the city of Huntington Beach parking area, 13 round trips from the parking area at the corner of PCH and Beach Boulevard, and 10 trips from the Plains All American Tank Farm. (Ex. 2000, pp. 4.10-11 – 4.10-12.)

**Traffic and Transportation Table 7
HBEP Construction Parking Areas**

Parking Area Location	Parking Area size	Number of Spaces (approximately)
On-site at HBEP	1.5-acres	130
Plains All American Tank Farm, adjacent to HBEP	1.9-acres	170
Graded area West of HBEP site on Newland Street	3-acres	300
Graded area NE corner of PCH and Beach Blvd.	2.5-acres	215
Huntington Beach City Parking Area SW corner of PCH and Beach Blvd.	N/A	225
Total Number of Spaces		1,040

(Ex. 2000, p. 4.10-12.)

Based on the off-site parking proposal, the amount of construction parking spaces is more than adequate to park the construction workforce during the peak construction period. Condition of Certification **TRANS-3** requires the project owner to prepare a traffic control plan (TCP); part of the TCP requires that the parking facilities analyzed above are available for construction workers. (Ex. 2000, p. 4.10-12.)

We therefore impose Condition of Certification **TRANS-3** to ensure all construction workers parking is in place as designated in this analysis. Upon imposition and

implementation of Condition of Certification **TRANS-3**, we find that construction workforce parking impacts would be less than significant.

Transportation of Hazardous Materials and Waste

During construction, no acutely hazardous materials would be used or stored onsite. The low-level hazardous materials planned for use during construction include gasoline, diesel fuel, oil, lubricants, cleaners, solvents, adhesives, and paint materials. Transportation of these materials would pose less than significant hazards to the public. (Ex. 2000, p. 4.10-12.)

Please refer to the **HAZARDOUS MATERIALS MANAGEMENT** section for a detailed description of hazardous waste associated with the project and proposed conditions of certification for the HBEP. (Ex. 2000, p. 4.10-12.)

Aviation Impacts

The HBEP site is approximately 6 miles west of the nearest public airport. There would be no aviation impacts anticipated as part of the construction of HBEP. (Ex. 2000, p. 4.10-12.)

However, when any proposed construction feature would be 200 feet or taller above ground level, the FAA must be notified. (Code Fed. Regs, tit., Part 77.) (Ex. 2000, p. 4.10-12.) To ensure project compliance with FAA regulations, we impose Condition of Certification **TRANS-6**, which would, among other things, require the project owner to submit a Form 7460-1 "Notice of Proposed Construction or Alteration" to the FAA for any construction equipment (e.g. cranes) that may exceed the height restrictions. Upon imposition and implementation of Condition of Certification **TRANS-6**, we find that impacts caused by construction features 200 feet or taller above ground level would be mitigated to a level of "less than significant".

HBEP Construction Impacts Conclusion

With implementation of the conditions of certification discussed above, we find that construction-related traffic of the HBEP would result in less than significant impacts to the traffic and transportation system in the project vicinity.

Operational Impacts and Mitigation

Workforce Traffic

The construction of HBEP Block 1 is expected to be completed in the fourth quarter of 2018 and Block 2 to be completed by the second quarter of 2020. The facility would be staffed by 33 permanent workers in three rotating shifts. (Ex. 2000, p. 4.10-12.)

The existing electrical generating facility at the HBEP site is currently in operation and employs 33 workers. The current and proposed operations workforce is summarized in **Traffic and Transportation Table 8**.

**Traffic and Transportation Table 8
Existing Huntington Beach Generating Station Plant Operation Workforce**

Classification	Current HBGS	Proposed HBEP
Plant Manager	1	1
Operations Leader	1	1
Maintenance Leader	2	1
Environmental Engineer	1	1
Maintenance Planner	1	1
Power Plant Operators	16	20
Controls Specialty	5	5
Mechanic	4	2
Admin	2	1
Total	33	33

*HBGS: Huntington Beach Generating Station which is the existing electrical generating facility in operation at the project site.

(Ex. 2000, p. 4.10-12.)

Upon full operation of the HBEP and following the demolition of all existing electrical generating facilities, there would be no net increase in workforce traffic as part of HBEP. The applicant anticipates the trip distribution for operations to be: approximately 33 percent from the city of Long Beach and communities northwest of the site, 33 percent from the city of Garden Grove and communities north of the site, and 33 percent from the city of Irvine and communities southeast of the site. Therefore, we find there would be a minimal increase in traffic and operations traffic would have a less than significant impact on overall LOS at studied intersections workers may use to access the project site. (Ex. 2000, p. 4.10-13.)

Truck Traffic and Hazardous Materials Delivery

Upon operation, the HBEP would require 10 to 12 hazardous materials truck trips per month. These materials may include ammonia, cleaning solvents, diesel fuel, lubricants and other materials associated with HBEP operation. During project operation, Vehicle Code Section 32100.5, which addresses the transportation of hazardous materials posing an inhalation hazards, would regulate the transportation of aqueous ammonia and mandate the use of adopted travel routes and to avoid heavily populated or congested areas. The HBEP would use the same route for deliveries of aqueous ammonia as for regular truck deliveries: via I-405 to Beach Blvd./State Route 39 (SR39) to PCH to Newland to the HBEP project site. The approximately six-mile long route is characterized predominantly by commercial and retail uses, with some hotels, single family and multi-family residential uses along Beach Blvd., south of Adams Ave. nearer the coast. Beach Boulevard/SR39 is the most direct route from I-405 to the project site

and is an adopted truck route by both Caltrans and the city of Huntington Beach. (Ex. 2000, p. 4.10-14.)

Because delivery of aqueous ammonia may be hazardous to the public if a spill were to occur, we impose Condition of Certification **TRANS-5** to ensure that the project owner contracts with licensed hazardous materials and waste hauler companies that comply with all applicable regulations and obtain the proper permits and/or licenses from Caltrans and all affected jurisdictions. Upon imposition and implementation of Condition of Certification **TRANS-5**, we find that potential impacts caused by improper handling of aqueous ammonia during delivery would be mitigated to a level of “less than significant”.

For more information on hazardous materials used during project operation and applicable regulations, see the **HAZARDOUS MATERIALS MANAGEMENT** section of this Staff Assessment.

Parking

As indicated earlier, operations of the HBEP would employ a total of 33 operations staff. The plant would be operated in three rotating shifts and staffed 24 hours a day, seven days a week. As shown in Figure 2.1-1, ‘General Arrangement/ Site Plan,’ in the AFC, workforce parking would be provided adjacent to the administration/ maintenance building and would provide sufficient on-site parking. (Ex. 2000, p. 4.10-14.)

Please see the **LAND USE** section for additional information regarding parking and site plan configurations.

Emergency Access

The site is directly accessed via Newland Avenue which would not present any obstructions or design challenges for emergency vehicles to access the site. Staff has recommended Condition of Certification **TRANS-3** which includes a requirement that the Traffic Control Plan demonstrates and ensures sufficient access. On-site circulation of emergency vehicles would be subject to site plan review by the city of Huntington Beach Fire Department per conditions of certification in the **WORKER SAFETY AND FIRE PROTECTION** section of this Decision.

Airport Operations and Hazards

FAA notification is required for any proposed structure that would be 200 feet or taller above ground level (AGL). (14 CFR, Part 77.) The tallest structures would be the power block stacks which would be 120 feet tall AGL. These stacks would be shorter than the 200-foot height threshold, thus not falling within the notification requirements of the FAA.

Thermal Plumes

The HBEP gas turbines and air cooled condensers (ACC) have the potential to generate thermal plumes during worst case conditions. These conditions would be full operation of HBEP during calm or very low wind meteorological conditions. High velocity thermal plumes have the potential to affect aviation safety and the FAA has amended the Aeronautical Information Publication to establish thermal plumes as flight hazards. Aircraft flying through thermal plumes may experience significant air disturbances, such as turbulence and vertical shear. (Ex. 2000, p. 4.10-15.)

Near the HBEP, there is a potential for low flying aircraft to be affected by the thermal plumes. Helicopters and small aircraft are routinely observed flying along Huntington Beach and areas near the project site. (Ex. 2000, p. 4.10-15.)

Energy Commission staff uses a 4.3 meters per second (m/s) vertical velocity threshold for determining whether a plume may pose a hazard to aircraft. This velocity generally defines the point at which general aviation aircraft begin to experience more than light turbulence. Exhaust plumes with high vertical velocities may damage aircraft airframes or cause turbulence resulting in loss of aircraft control and maneuverability. (Ex. 2000, pp. 4.10-15, 4.10-34, App. TT-1.)

Traffic and Transportation Table 9 shows the vertical plume velocity for the ACC AGL. The ACC exhaust plumes drop below 4.3 m/s between 1000 and 1100 feet AGL. (Ex. 2000, pp. 4.10-15, 4.10-34, App. TT-1.)

**Traffic and Transportation Table 9
HBEP ACC Vertical Plume Velocities (m/s)**

Height Above Ground Level (Feet)	Block 1 ACC			Block 2ACC		
	32°F	65.8°F	110°F	32°F	65.8°F	110°F
400	5.14	5.21	5.19	5.08	5.58	5.59
500	5.25	5.27	5.26	5.20	5.43	5.48
600	5.07	5.08	5.08	5.03	5.17	5.24
700	4.87	4.87	4.87	4.82	4.93	5.00
800	4.67	4.67	4.67	4.63	4.72	4.78
900	4.50	4.49	4.50	4.46	4.53	4.60
1,000	4.34	4.34	4.34	4.30	4.37	4.44
1,100	4.20	4.20	4.20	4.17	4.23	4.29
1,200	4.08	4.08	4.08	4.05	4.10	4.16
1,300	3.97	3.97	3.97	3.94	3.99	4.05
1,400	3.87	3.87	3.87	3.84	3.88	3.95
1,500	3.78	3.77	3.78	3.75	3.79	3.85
1,600	3.70	3.69	3.69	3.66	3.71	3.77
1,700	3.62	3.61	3.62	3.59	3.63	3.69
1,800	3.55	3.54	3.55	3.52	3.56	3.62
1,900	3.48	3.48	3.48	3.45	3.49	3.55
2,000	3.42	3.42	3.42	3.39	3.43	3.49

(Ex. 2000, p. 4.10-33, App. TT-1.)

Traffic and Transportation Table 10 shows the average plume velocity for the gas turbine.

**Traffic and Transportation Table 10
HBEP Turbine Plume Size and Vertical Plume Velocities**

Height Above Ground Level (Feet)	Plume Diameter (m) ^a	Plume Velocity (m/s) ^b		
		N=1	N=2	N=3
300	14.913	8.78	Not Merged	Not Merged
400	24.667	6.96	Not Merged	Not Merged
500	34.421	6.11	Not Merged	Not Merged
600	44.174	5.57	Not Merged	Not Merged
700	53.928	5.19	Not Merged	Not Merged
800	63.682	4.90	Not Merged	Not Merged
900	73.436	4.66	5.54	Not Merged
1000	83.189	4.47	5.31	Not Merged
1100	92.943	4.30	5.11	Not Merged
1200	102.697	4.16	4.94	Not Merged
1300	112.450	4.03	4.79	Not Merged
1400	122.204	3.92	4.66	Not Merged
1500	131.958	3.82	4.54	Not Merged
1600	141.712	3.73	4.44	Not Merged
1700	151.465	3.65	4.34	4.80
1800	161.219	3.57	4.25	4.70
1900	170.973	3.50	4.16	4.61
2000	180.726	3.44	4.09	4.52
2100	190.480	3.38	4.02	4.44
2200	200.234	3.32	3.95	4.37
2300	209.988	3.27	3.89	4.30
2400	219.741	3.22	3.83	4.24
2500	229.495	3.17	3.77	4.18
2600	239.249	3.13	3.72	4.12
2700	249.002	3.09	3.67	4.06
2800	258.756	3.05	3.63	4.01
2900	268.510	3.01	3.58	3.96
3000	278.264	2.98	3.54	3.92

Notes:

a – The separation between stacks is approximately 36.6 meters for two stacks and 73.2 meters for all stacks and the plumes will begin to merge when the plume diameter is the same as the separation and is assumed to be fully merged when the plume diameter is twice the stack separation.

b – Not Merged means not fully merged.

(Ex. 2000, p. 4.10-35, App. TT-1.)

Because each power block of HBEP has three turbines in a linear configuration, we must analyze the possible effects of the plumes merging. The gas turbine plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 1,100 feet for the single turbine plume. In the case of two plumes fully merging, the average velocity is calculated to drop below 4.3 m/s at the height of 1,740 feet. We use the two plumes fully merging for this analysis because it is very unlikely that all three plumes can merge fully because of the stack separation and because of the need for dead calm wind conditions for the entire portion of the atmosphere from stack exit up to the point where the vertical velocity drops to 4.3 m/s to be present. Thus, the average velocity drops below 4.3 m/s at the height of 1,740 feet. This would generate a potential impact to aircraft if they were to fly over the HBEP at low altitude. (Ex. 2000, pp. 4.10-15, 4.10-35- 4.10-36.)

To mitigate this potential impact, we impose Condition of Certification **TRANS-7** which would require notification in accordance with FAA regulations to advise pilots of the potential overflight hazard associated with thermal plumes generated by the HBEP and the need to avoid overflight below 1,740 feet AGL. Notification requirements may include issuance of a Notice to Airmen (NOTAM), revision to local sectional charts, and addition of a new remark to the Automated Surface Observing System (ASOS). Upon implementation of Condition of Certification **TRANS-7**, the potential impacts to aviation would be less than significant. Based on the small number of aircraft likely to fly over the HBEP and the presence of available flight paths to avoid the thermal plumes, pilots would have the ability to safely avoid the HBEP thermal plumes.

HBEP Operation Impacts Conclusion

With imposition and implementation of the Conditions of Certification discussed above, we find that impacts to ground and air transportation from operation of the HBEP would be less than significant.

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects; (2) other current projects; and (3) probable future projects (California Code of Regulations, tit. 14, § 15130.)

To analyze the cumulative effect of the project with reasonably foreseeable projects, Section 15130(b) of the CEQA Guidelines allows a lead agency to analyze cumulative impacts by either:

1. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
2. A summary of projections contained in an adopted local, regional or statewide plan or related planning document that describes or evaluates conditions contributing to the cumulative effect.

We have reviewed known past, current, and probable future projects near the proposed HBEP project, including development in the cities of Huntington Beach, Seal Beach, and Newport Beach. Trips generated by these projects occur within the transportation network used by HBEP and may combine with HBEP trips to result in cumulative impacts to the level-of-service (LOS) of nearby highways, roadways, and intersections. These roadways are identified in **Traffic and Transportation Figure 2**. The cumulative projects are listed in **Traffic and Transportation Table 11** below.

Projects identified in the cumulative projects list have either been required to make road improvements to mitigate the traffic impacts associated with their project or to pay fees to the city of Huntington Beach in accordance with Chapter 17.65 of the Municipal Code "Fair Share Traffic Impact Fee". Payment of these fees would ensure the direct impacts to affected roadways would be addressed as part of the city's Capital Improvement Program or the road improvements required as part of the cumulative projects identified in **Traffic and Transportation Table 11** would directly reduce the potential impacts to within acceptable city LOS standards.

As discussed above, we have determined that, with imposition and implementation of the Conditions of Certification **TRANS-1** through **TRANS-4**, all traffic related direct impacts would be less than significant. The project's incremental effects would not be cumulatively considerable.

**Traffic and Transportation Table 11
Development Considered in the Cumulative Condition¹**

Project Number	Project	Distance from Project Site	Project Description	Status of Project
1	Archstone Residential Project	6 miles N	Multifamily residential development of up to 510 units	Pending under City Review
2	Ascon Landfill Site	Within 1 mile N	Industrial and oil field waste removal from landfill	On-going/ monitor
3	Beach and Ellis- Mixed Use Development	3.5 miles N	274 unit apartment complex, including 8,500 sq ft of commercial property and 48,000 sq ft of open space.	Under Review The tentative map for this project is in process.
4	Beach Walk	2 miles N	Development of 173 multi-family apartment units within a 4-story building	Approved March 2012 Building permits in plancheck
5	Beach and Warner Mixed Use Project	4.75 miles N	Development of up to 279 residential units, 31,200 sq ft of retail space, and 6,000 sq ft of restaurant space, on 9.4 acres.	EIR certified 12/19/11 City in Litigation filed 1/23/12
6	Brightwater	6 miles NW	105.3 acre residential subdivision, including 349 single-family residences	Approved under construction
7	Edinger Wal-Mart	6 miles N	Development of a Wal-Mart in the existing, 100,000 sq ft vacant building	Under environmental review
8	Former Lamb School Site	3 miles NE	Construction of a Planned Unit Development (PUD) consisting of 81 detached single-family homes on 11.65 acres	No action taken by Planning Commission in Sept. 2012, No planned date for construction.
9	Former Wardlow School Site	2.15 miles NE	Construction of a PUD consisting of 49 detached single-family homes on 8.35 acres	No action taken by Planning Commission in Sept. 2012, no action taken. No planned date for construction.
10	Harmony Cove	6.75 miles NW	Development of a 23-boat slip marina, an eating and drinking establishment, and ancillary uses to the marina, on 2.28 acres	No action taken by Planning Commission in Oct. 2012, no action taken. No planned date for construction.
11	Hilton Waterfront Beach Resort Expansion	1 mile W	Expansion of existing resort, including a nine-story tower providing a total of 156 new guestrooms.	Approved by Planning Commission in March 2012. No planned date for construction.
12	Huntington Beach Lofts	6.15 miles N	Planned 385 residential units located on 3.8 acres	Planning Commission approved Sept 2012. No planned date for construction.
13	The Boardwalk	6 miles N	487 dwelling units and 14,500 sq ft commercial area on 12.5 acres	Planning Commission approved Feb. 2011. No planned date for construction.

Project Number	Project	Distance from Project Site	Project Description	Status of Project
15	Parkside Estates	5.75 miles NW	50-acre parcel with 111-single family residences planned	Approved by Coastal Commission Oct 2012. No planned date for construction.
16	Pierside Pavilion Expansion	1.5 miles NW	Expansion of the existing Pierside Pavilion development	Approved by City Council Sept. 2012. No planned date for construction.
17	Beach Boulevard/Edinger Corridors Specific Plan	Varies	Enhancement and maximizing of economic opportunities along Beach Blvd and Edinger Ave	Completed
18	Bella Terra Costco	6 miles N	Development of a Costco store on the former location of Mervyns and Montgomery Wards stores	Completed
19	Pacific Shores Residential Project	0.5 miles NW	204 multi-family residential units and 2 acre park	Completed
20	The Strand	1.6 NW	Hotel, retail, restaurants, and parking	Completed
21	Pacific City	1.3 miles NW	31-acre site broken into 3 parcels. One for 516 residential condos and two for commercial, retail and hotel	Entitlements approved 2004, permits pending
22	The Ridge	5.8 miles NW	5-acre site, looking to change current land use designations from Open Space-Park to Residential Low-Density to develop 22-single family residences	Project entitlements approved 2004, project amendment pending
23	The Villa at Bella Terra	6 miles N	Plans for 538 residential units, over 400,000 sq ft of commercial uses, and a hotel	Pending
24	Beach Boulevard and Warner Avenue Intersection and Improvement Program (IIP)	5 miles NW of project site	Widening Capacity Improvements- Beach Boulevard and Warner Avenue.	Project is for PS&E (plans, specifications, and estimates), environmental studies and right-of-way engineering only.
25	Brookhurst Street and Adams Avenue IIP	2.5 miles NE of project site	Widening Capacity Improvements- Brookhurst Street & Adams Avenue	Project is for PS&E and environmental studies and right-of-way engineering only
26	Alamitos Energy Center	15 miles NW of project site	Replacement of existing electrical generating facility with a new 1,995 MW natural gas-fired facility.	Under review by California Energy Commission

COMPLIANCE WITH LORS

Traffic and Transportation Table 12 provides an assessment of the HBEP's compliance with applicable laws, ordinances, and regulations (LORS) pertaining to traffic and transportation.

**Traffic and Transportation Table 12
Project Compliance with Adopted Traffic and Transportation LORS**

Applicable LORS	Description	Consistency
Federal		
Title 49, Code of Federal Regulations, Parts 171-177	Requires proper handling and storage of hazardous materials during transportation.	<p><u>Consistent.</u> The project owner would conform to this law by requiring shippers of hazardous materials to use the required markings on their transportation vehicles. Also, TRANS-5 ensures compliance by requiring the project owner to contract with licensed hazardous material and waste hauler companies.</p>
Title 14, Code of Federal Regulations, Section 77.13 (2)(i)	This regulation requires the project owner to notify the Federal Aviation Administration (FAA) of construction structures with a height greater than 200 feet from grade or greater than an imaginary surface extending outward and upward at a slope of 100 to 1 from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.	<p><u>Consistent.</u> The HBEP would not include structures 200 feet tall or higher and does not exceed the 100 to 1 slope threshold of an operating airport and therefore does not require the project owner to file FAA Form 7460-1, Notice of Proposed Construction or Alteration. However, construction of the HBEP may involve cranes exceeding 200 feet in height. For project compliance with FAA regulations, staff is proposing Condition of Certification TRANS-6, which would require the project owner to submit a Form 7460-1 "Notice of Proposed Construction or Alteration" for construction equipment that would exceed 200 feet.</p>
State		
California Vehicle Code, Sections 13369, 15275, 15278	Requires licensing of drivers and the classification of license for the operation of particular types of vehicles. A commercial driver's license is required to operate commercial vehicles. An endorsement issued by the Department of Motor Vehicles (DMV) is required to drive any commercial vehicle identified in	<p><u>Consistent.</u> The project owner would require that contractors and employers be properly licensed and endorsed when operating such vehicles. TRANS-1, which requires proper driver licensing, ensures compliance.</p>

Applicable LORS	Description	Consistency
	Section 15278.	
State		
California Vehicle Code, Sections 31303-31309	Requires transportation of hazardous materials to be on the state or interstate route that offers the shortest overall transit time possible.	<u>Consistent.</u> The project owner would require shippers of hazardous materials to use the shortest route possible to and from the project site. The proposed routes are consistent with this requirement. Also, TRANS-5 (see above for explanation) ensures compliance.
California Vehicle Code, Sections 31600-31620	Regulates the transportation of explosive materials.	<u>Consistent.</u> The HBEP would not use explosive materials as defined in Section 12000 of the Health and Safety Code.
California Vehicle Code, Sections 32100-32109	Requires shippers of inhalation hazards in bulk packaging comply with rigorous equipment standards, inspection requirements, and route restrictions.	<u>Consistent.</u> The project owner would require shippers of inhalation hazards (including ammonia) to comply with all route restrictions, equipment standards, and inspection requirements. Also, TRANS-5 (see above for explanation) requires compliance.
California Vehicle Code, Sections 34000-34100	Establishes special requirements for vehicles having a cargo tank and for hazardous waste transport vehicles and containers, as defined in Section 25167.4 of the Health and Safety Code.	<u>Consistent.</u> The project owner would require shippers of hazardous materials to maintain their hazardous material transport vehicles in a manner that would enable the vehicles to pass California Highway Patrol inspections. Also, TRANS-5 (see above for explanation) requires compliance.
California Vehicle Code, Section 35550	Regulates weight guidelines and restrictions upon vehicles traveling on freeways and highways. A single axle load shall not exceed 20,000 pounds, the load on any one wheel or wheels supporting one end of an axle are limited to 10,500 pounds, and the front steering axle load is limited to 12,500 pounds.	<u>Consistent.</u> The project owner would ensure compliance with weight restrictions and would require heavy haulers to obtain necessary permits prior to delivery of any heavy haul load. Also, TRANS-1 (which requires the project owner to comply with limitations on vehicle sizes and weights, driver licensing, and truck routes) requires compliance.

Applicable LORS	Description	Consistency
State		
California Vehicle Code, Section 35551	Defines the maximum overall gross weight as 80,000 pounds and mandates that the gross weight of each set of tandem axles not exceed 34,000 pounds.	<u>Consistent.</u> The project owner would require compliance with weight restrictions and would require heavy haulers to obtain necessary permits prior to delivery of any heavy haul load. Also, TRANS-1 (see above for explanation) requires compliance.
California Vehicle Code, Section 35780	Requires a single-trip transportation permit to transport oversized or excessive loads over state highways.	Consistent. The project owner would comply with this code by requiring that heavy haulers obtain a Single-Trip Transportation Permit for oversized loads. Also, TRANS-1 (see above for explanation) requires compliance.
California Streets and Highways Code, Sections 660, 670, 672, 1450, 1460, 1470, 1480 et seq., 1850-1852	Requires encroachment permits for projects involving excavation in state and county highways and city streets.	<u>Consistent.</u> The project owner would comply by acquiring the necessary permits and approval from Caltrans, the City of Huntington Beach and county of Orange with regard to encroachment into public rights-of-way, as required by TRANS-4 .
California Health and Safety Code, Section 25160	Addresses the safe transport of hazardous materials	<u>Consistent.</u> The project owner would comply by requiring that shippers of hazardous wastes are properly licensed by the Department of Toxic Substances Control (DTSC), and that hazardous waste transport vehicles are in compliance with DTSC requirements. TRANS-1 and TRANS-5 (see above for explanation) require compliance.
California Department of Transportation CA MUTCD Part 6 (Traffic Manual)	Provides traffic control guidance and standards for continuity of function (movement of traffic, pedestrians, bicyclists, transit operations), and access to property/utilities when the normal function of a roadway is suspended.	<u>Consistent.</u> TRANS-3 requires the project owner to prepare and implement a Traffic Control Plan.
Local		
City of Huntington Beach General Plan, Chapter III Circulation Element	Policy CE2.1.1.Requires development projects to provide associated road improvements necessary to achieve a level of service of “D” at all intersections except for those intersections identified in the General Plan as already operating below LOS D during peak hours.	<u>Consistent.</u> As shown in Traffic and Transportation Tables 5 and 6 , the applicant has identified two of the affected intersections currently operate below LOS D, Beach Blvd/ PCH and Brookhurst St/ PCH. TRANS-3 would require the applicant to prepare a Traffic Control Plan which would monitor the affected

Applicable LORS	Description	Consistency
		intersections and use alternate routes in the construction traffic.
City of Huntington Beach Municipal Code Chapter 17.65 Fair Share Traffic Impact Fee	Enables the city to implement transportation impact fee programs. Requires payment of fees that constitute the proposed project's fair share contribution towards construction costs of intersections and traffic signals or future city approved alternatives. The fee shall be assessed in accordance with the Fair Share Traffic Impact Fee Ordinance.	<u>Consistent.</u> The city of Huntington Beach reviewed the project and determined this fee would not be applicable (HB City 2013a).
City of Huntington Beach Municipal Code, Chapter 10.32, Movement of Overloads.	Requires an oversize vehicle permit issued by the city of Huntington Beach director of public works for operation of vehicles that exceed weight or measurement requirements of the Vehicle Code.	<u>Consistent.</u> TRANS-5 would require the applicant to obtain the necessary permits associated with the heavy haul plan and provide copies of the permit to the CPM.
County of Orange Code of Ordinances. Title 6 Highways, Bridges, Rights-of-Way, Division 4 Traffic Ordinances, Article 7 Size, Weight, and Load	Requires an oversize vehicle permit issued by the director of public works for operation of vehicles that exceed weight or measurement requirements of the Vehicle Code within Orange County.	<u>Consistent.</u> TRANS-5 see above explanation.
City of Seal Beach, Municipal Code Section 8.10.135 Movement of Oversize Vehicles.	Requires an oversize vehicle permit issued by the director of public works for operation of vehicles that exceed weight or measurement requirements of the Vehicle Code within the city of Seal Beach.	<u>Consistent.</u> TRANS-5 see above explanation.
City of Long Beach Municipal Code Chapter 10.41 Use of streets by Overweight Vehicles.	Requires an oversize vehicle permit issued by the director of public works for operation of vehicles that exceed weight or measurement requirements of the Vehicle Code within Los Angeles County.	<u>Consistent.</u> TRANS-5 see above explanation.
Los Angeles County Code, Chapter 16.22 Moving Permits,	Requires an oversize vehicle permit issued by the director of public works for operation of vehicles that exceed weight or measurement requirements of the Vehicle Code within Los Angeles County.	<u>Consistent.</u> TRANS-5 see above explanation.

(Ex. 2000, p.4.10-19 – 4.10-22.)

We therefore find that the project, with the imposition and implementation of the Conditions of Certification, is consistent with the LORS for traffic.

CALIFORNIA COASTAL COMMISSION COMMENTS

The Coastal Commission submitted a report dated July 14, 2014, entitled, “ Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC”

(July 2014 Report). (Ex. 4026.) For the Commission's detailed analysis of the July 2014 Report, please see the **Land Use** section of this Decision.

The Coastal Commission would delete the use of the Huntington Beach City Parking area from the locations available for construction workforce parking, contending that use for the HBEP would impede public access. (Ex. 4026, pp. 4, 7, 35-36.)

We disagree and decline to make the suggested change. Restrictions are already in place that mandate that the city beach parking facility not be used on the weekends or on major summer holidays. Accordingly, we conclude that this limitation on usage properly balances the need for construction parking with continued public access.

RESPONSE TO PUBLIC COMMENTS

The city of Huntington Beach submitted comments on the Traffic and Transportation analysis. (TN 202629) We find that the city's comments are adequately addressed in the body of this document.

FINDINGS OF FACT

1. Construction of the HBEP will add traffic to local roadways during the construction period.
2. Construction traffic will not reduce the Level of Service (LOS) at any area intersection nor impact LOS on area roadways, except for Beach Boulevard/ Pacific Coast Highway (PCH) and Brookhurst Street/ PCH.
3. Beach Boulevard/ PCH and Brookhurst Street/ PCH are currently operating at LOS "E" and LOS "F", respectively, but will temporarily experience additional, minimal delay during construction.
4. The project owner will provide a Traffic Control Plan to mitigate any LOS impacts in the project area.
5. The Traffic Control Plan will ensure that the HBEP does not significantly degrade the LOS on local streets or roadways.
6. The Traffic Control Plan will ensure the implementation of project-related traffic safety measures for the public as well as for construction workers and drivers of construction-related vehicles.
7. The project owner will provide a Railroad Crossing Safety Plan for all phases of project construction.
8. The project owner will provide a Parking and Staging Plan for all phases of construction to ensure that all project-related parking remains on-site or in designated off-site parking areas.

9. The project owner will comply with Caltrans and all other relevant jurisdictional requirements for any encroachment into public rights-of-way during construction.
10. The project owner will comply with Caltrans and all other relevant jurisdictional requirements for oversized vehicles.
11. There is no evidence that HBEP traffic will result in adverse impacts on designated Congestion Management Plan roadways in Orange County.
12. The project owner will repair any damage to roadways affected by construction activity.
13. There is no evidence that HBEP operations will have any impact on study area roadways or intersection LOS.
14. The nearest public airport is John Wayne/Orange County Airport, which is approximately six miles east of the project site.
15. There are six private or public helipads within seven miles of the project site.
16. The nearest helipads are operated by the city of Huntington Beach at the civic center and the police department which are 2.5 and 3.5 miles away respectively from the proposed HBEP site.
17. Aircraft routinely fly over the existing HBGS/proposed HBEP site.
18. Adverse impacts could potentially occur to low-flying aircraft from turbulence caused by plume velocities in the airspace above the site; however, plume velocities above the site can be avoided by aircraft observing the recommended pattern altitudes of 1,500 AGL for small aircraft and 2,000 feet AGL for larger aircraft.
19. The project owner will consult with the Federal Aviation Administration (FAA) to ensure that a Notice to Airmen (NOTAM) is provided to pilots to avoid flying over the HBEP site and to update all airspace charts to indicate that project plume hazards could exist.
20. There is no evidence that the HBEP will result in long-term significant direct, indirect, or cumulative traffic and transportation impacts.

CONCLUSIONS OF LAW

1. The Huntington Beach Energy Project, as mitigated, will comply with all applicable laws, ordinances, regulations, and standards as indicated in the evidentiary record
2. The Huntington Beach Energy Project will not result in a significant adverse traffic impact on the local and regional road/highway network.

C. SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

INTRODUCTION

This portion of the Decision contains the evaluation of the project's induced changes on existing population, employment patterns, and community services during construction and operation, and includes a discussion of the estimated beneficial economic impacts of the construction and operation of the proposed project. We analyze the demographic characteristics of population centers near the project site. This information serves two purposes. First, it forms the basis for an environmental justice screening analysis to determine whether the project will result in disproportionate impacts upon minority and/or low-income populations and, if so, whether mitigation is required. Second, it allows us to evaluate whether the project will induce population growth and the demand for housing, as well as whether project activities will cause impacts upon local schools or recreational, medical, and police services. The evidence also examines the project's economic attributes such as local expenditures, property and sales tax revenues, and school impact fees.

The topic of socioeconomics and environmental justice was undisputed. (7/21/14 RT 19-15-19:22.) Evidence on socioeconomics and environmental justice can be found in Exhibits 1001, 1017, 1037, 1041, 1087, 1090, 1117, 1132, 1133, and 2000. (7/21/14 RT 29:13-31:11.)

SETTING

*For a detailed discussion of the project setting, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision.*

For the purposes of assessing project impact on employment, we define the “local workforce” during project construction as residing within a two-hour commute of the project. This includes the Santa Ana-Anaheim-Irvine Metropolitan Statistical Area (MSA) (Orange County), Los Angeles-Long Beach-Glendale Metropolitan Census County Division (Los Angeles County), and Riverside-San Bernardino-Ontario MSA (Riverside and San Bernardino counties). The “local workforce” during project operation is defined as residing within a one-hour commute of the project. (Ex. 2000, p. 4.8-2.)

To analyze the HBEP potential project impacts on population and housing, the study area is the city of Huntington Beach and nearby cities of Costa Mesa, Fountain Valley, and Newport Beach. The city of Huntington Beach is the study area for impacts to police services and parks. The Huntington Beach Elementary City School District and Huntington Beach Union High School District are the study areas for impacts to education. The study area for indirect and induced economic impacts is defined as Orange County. (Ex. 2000, p. 4.8-2.)

In order to address potential environmental justice impacts, we use a six-mile buffer zone surrounding the project site. The six-mile buffer is based on air quality modeling, which shows that project-related impacts from pollutants decrease to less than significant within six miles of the emission site. The population within the six-mile buffer lives primarily in the Orange County

cities of Huntington Beach, Costa Mesa, Fountain Valley, and Newport Beach, and to a much lesser extent, in the cities of Westminster and Santa Ana. (Ex. 2000, pp. 4.8-2, 4.8-4.)

STANDARDS OF REVIEW/LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The California Environmental Quality Act (CEQA)¹:

CEQA requires that we identify the significant environmental effects of the project but does not promulgate specific thresholds for significance. (Guidelines, tit. 14, §15126.) A significant impact is defined by CEQA as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (CEQA Guidelines, tit. 14, §15382). In general, “[e]conomic and social changes resulting from the project shall not be treated as significant effects on the environment.” (Guidelines, tit. 14, §15064, subd. (e).) However, section 15064 then continues that when “a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant.” (Guidelines, tit. 14, §15064, subd. (e).)

In the context of socioeconomics, we examine the impact of the project on population and housing, recreation, and public services and facilities.

Regarding population and housing, a significant impact would occur if the project would (a) induce substantial population growth in an area, either directly or indirectly; or (b) displace substantial numbers of existing housing units or people, necessitating the construction of replacement housing elsewhere. (Guidelines, App. G, §XIII.)

When considering recreation, a significant impact would occur if the project would (a) increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or (b) require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. (Guidelines, App. G, §XV.)

Finally, a significant impact would occur on public services and facilities if the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. The physical changes would be required in order to maintain acceptable service ratios, response times or other

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq., (Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We may refer to the statute and the Guidelines collectively as “CEQA”.

performance objectives for any of the public services: police protection, schools, parks, or other public facilities. (Guidelines, App. G, §XIV.)

For emergency medical services, capacities, and response times, please see the **WORKER SAFETY AND FIRE PROTECTION** section of this Decision.

Laws, Ordinances, Regulations, and Standards

In addition to environmental analysis under CEQA, we determine whether the HBEP will comply with all applicable laws, ordinances, regulations, and standards (LORS). **Socioeconomics Table 1** contains the LORS applicable to the proposed project.

**Socioeconomics Table 1
Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable Law	Description
State	
California Education Code, Section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, Sections 65996-65997	Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.
Local	
Huntington Beach Municipal Code	
Chapter 17.67	Library development impact fees
Chapter 17.75	Police facilities development impact fees
Chapter 17.76	Parkland acquisition and park facilities development impact fees

(Ex. 2000, p. 4.8-1.)

Environmental Justice

State law defines “environmental justice” as “the 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.” (Gov. Code, § 65040.12, subd. (e).) The California Resources Agency, of which the Energy Commission is a part, has stated, “All Departments, Boards, Commissions, Conservancies and Special Programs of the Resources Agency must consider environmental justice in their decision-making process if their actions have an impact on the environment, environmental laws, or policies.”²

SUMMARY AND DISCUSSION OF THE EVIDENCE

Environmental Justice

The purpose of an environmental justice screening analysis is to determine whether low-income or minority populations exist within the area potentially affected by the project. In making this assessment, we are guided by *Environmental Justice: Guidance Under the National*

² The Commission takes official notice of the policies of the California Resources Agency. (Cal. Evid. §452, subd. (b).) This document can be found at: http://resources.ca.gov/environmental_justice_policy_20031030.pdf (as of July 29, 2014.)

Environmental Policy Act (Council on Environmental Quality (CEQ) 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses* (US EPA 1998). (Ex. 2000, p. 4.8-3.) If we identify the presence of an environmental justice population, we then evaluate whether the project has potential disproportionate impacts on the environmental justice population within thirteen technical areas.³ If we find there is not an environmental justice population, based on either the presence of minority or low-income populations within the six-mile buffer, we need not analyze whether the impacts from the project are disproportionately borne by environmental justice communities.

Minority Populations:

We look at information from the 2010 U.S. Census data to determine the number of minority populations. Minority individuals are defined as members of the following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. An environmental justice population is identified when the minority population of the potentially affected area is greater than fifty percent or the minority population percentage is meaningfully greater than the minority population in the general population or other appropriate unit of geographical analysis. (Ex. 2000, pp. 4.8-2 – 4.8-4.)

Socioeconomics Figure 1 shows the total population within the six-mile buffer of the project site was 367,721 persons, with a minority population of 141,559 persons, or about 39 percent of the total population. **Socioeconomics Figure 2** shows the cities in and around the six-mile buffer. (Ex. 2000, p. 4.8-4.) **Socioeconomics Table 2** compares minority populations in the project buffer and with those in the neighboring cities and Orange County.

Socioeconomics Table 2
Minority Populations within the Project Area

Area	Total Population	Not Hispanic or Latino: White alone	Minority	Percent Minority
Six-Mile Buffer of Project Site (Socioeconomics Figure 1)	367,721	226,162	141,559	38.50
Costa Mesa (city)	109,960	56,993	52,967	48.17
Fountain Valley (city)	55,313	27,234	28,079	50.76
Huntington Beach (city)	189,992	127,640	62,352	32.82
Newport Beach (city)	85,186	70,142	15,044	17.66
Santa Ana (city)	324,528	29,950	294,578	90.77
Westminster (city)	89,701	22,972	66,729	74.39
Project Area CCDs*- Total	612,276	349,324	262,952	42.95
--North Coast CCD	366,151	197,280	168,871	46.12
--Central Coast CCD	246,125	152,044	94,081	38.22
Orange County	3,010,232	1,328,499	1,681,733	55.87
California	37,253,956	14,956,253	22,297,703	59.85

Notes: minority population 50 percent or greater. *CCD - Census County Division.

(Ex. 2000, pp. 4.8-4 – 4.8-5.)

³ The thirteen technical areas are Air Quality, Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Socioeconomics, Soils and Surface Water Resources, Water Supply, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Cultural Resources, and Waste Management.

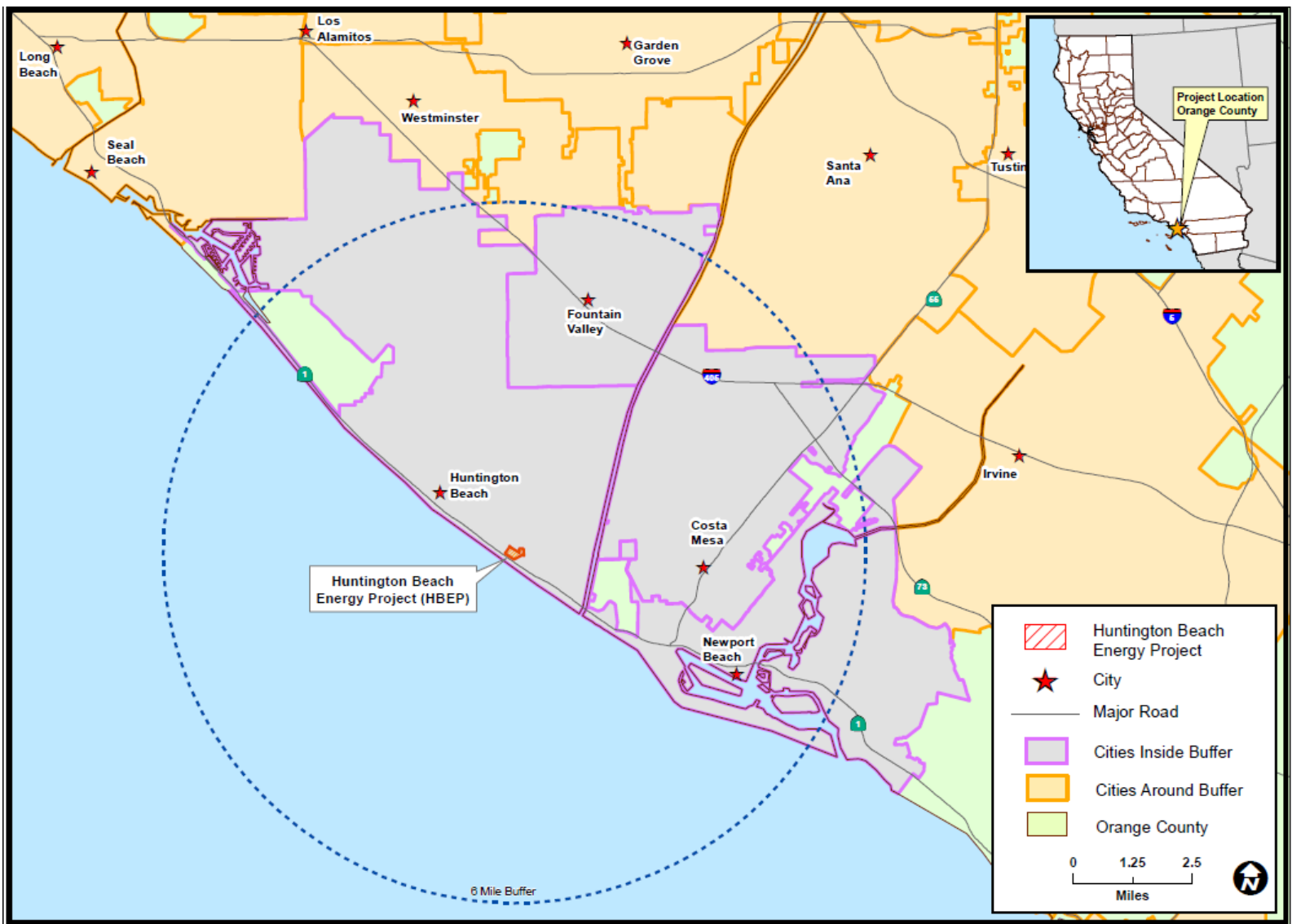
Socioeconomics Figure 1

Census 2010 Minority Population by Census Block - Six Mile Buffer



Source: Ex. 2000, Socioeconomics Figure 1

Socioeconomics Figure 2 Cities In and Around the Six Mile Buffer



Source: Ex. 2000, Socioeconomics Figure 2

We find that the minority population in the six-mile buffer is not meaningfully greater than the minority populations in the comparison geographies and therefore does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act*. We therefore do not need to analyze whether there are disproportionate impacts on minority communities.

Low Income Populations:

Detailed information on social, economic, and housing information is found in the U.S. Census Bureau's American Community Survey (ACS). (Ex. 2000, pp. 4.8-2 – 4.8-4.) The poverty status of households and individuals is determined based on a set of income thresholds, set by the U.S. Census Bureau, that vary by family size and composition. If the total income of the family is less than the family's threshold, that family and every individual in it is considered in poverty. The official poverty thresholds do not vary by geography (e.g. state, county, etc.), but are updated annually to allow for changes in the cost of living. The population for whom poverty status is determined does not include institutionalized people, people in military quarters, people in college dormitories, and unrelated individuals under 15 years old. (Ex. 2000, p. 4.8-5.)

Neither *Environmental Justice: Guidance Under the National Environmental Policy Act* (CEQ 1997) nor *Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses* (US EPA 1998) provides guidance on the analysis to be used to determine when below poverty level populations are also environmental justice populations. **Socioeconomics Table 3** presents poverty data for the area in a six-mile buffer of the project site compared to other nearby cities and Orange County. (Ex. 2000, pp. 4.8-5 – 4.8-6.)

Socioeconomics Table 3
Poverty Data within the Project Area

Area	Total			Income in the past 12 months below poverty level			Percent below poverty level		
	Estimate*	MOE ⁴	CV ⁵	Estimate	MOE	CV	Estimate	MOE	CV
Cities Used to Determine Poverty Status- Total	437,448	±424	0.06	41,234	±4,446	3.61	9.60	±0.56	3.61
--Costa Mesa	108,776	±256	0.14	15,360	±1,527	6.04	14.10	±1.4	6.04
--Fountain Valley	55,360	±158	0.17	3,688	±648	10.68	6.70	±1.2	10.89
--Huntington Beach	190,448	±260	0.08	15,802	±1,550	5.96	8.30	±0.8	5.86
--Newport Beach	84,864	±148	0.11	6,384	±910	8.67	8.00	±1.0	8.92
Comparison Geographies									
Santa Ana (city)	319,512	±704	0.13	66,246	±3,290	3.02	20.70	±1.0	2.94
Westminster (city)	89,387	±316	0.21	13,644	±1,493	6.65	15.30	±1.7	6.75
Project Area CCDs** - Total	604,411	±1,748	0.18	69,533	±3,216	2.81	11.50	±0.53	2.80
--North Coast CCD	365,969	±1,293	0.21	36,797	±2,402	3.97	10.10	±0.7	4.21
--Central Coast CCD	238,442	±1,176	0.30	32,736	±2,139	3.97	13.7	±0.9	3.99
Orange County	2,985,156	±1,694	0.03	349,220	±7,939	1.38	1011.70	±0.3	1.56
California	36,575,460	±3,416	0.01	5,590,100	±38,396	0.42	15.30	±0.1	0.40

Note: * Population for whom poverty status is determined. **CCD – Census County Division.

(Ex. 2000, p. 4.8-6.)

Roughly ten percent of the population within six miles of the project site lives below the poverty level. Of the cities used to determine the poverty status within the six-mile buffer, the city of Costa Mesa stands out with 14 percent of the population living below the poverty level, compared with the three other cities' (Fountain Valley, Huntington Beach, and Newport Beach) more moderate 7 to 8 percent below-poverty-level population. By contrast, the city of Santa Ana had 20.7 percent population below the poverty level. Other comparison geographies had percentages ranging from 12 percent for the project area CCDs to California's 15 percent. (Ex. 2000, p. 4.8-6.)

Based on the foregoing, we conclude that the below-poverty-level population in the six-mile buffer is not meaningfully greater than the below-poverty-level population in the comparison geographies and does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act*. We therefore do not need to analyze whether there are disproportionate impacts on low-income communities.

⁴ Margin of Error, the variability between a sample and the actual expected outcomes. (Ex. 2000, p. 4.8-3.)

⁵ Coefficient of variation, the standardized indicator of the reliability of an estimate. The US Census Bureau considers the use of estimates with a CV of more than 15 percent a cause for caution when interpreting patterns in the data. (*Id.*)

Induce Substantial Population Growth

As set forth above, CEQA requires that we determine whether the HBEP will “induce substantial population growth” by requiring workers to move into the study area because of project construction and operation, thereby encouraging construction of new homes or extension of roads or other infrastructure. To determine whether the project would induce population growth, we review the availability of the local workforce and the population within the region. “Local workforce” for project construction is generally defined as those workers residing within a two-hour commute of the project site. This area includes the Santa Ana-Anaheim-Irvine Metropolitan Statistical Area (MSA⁶) (Orange County), Los Angeles-Long Beach-Glendale Metropolitan Division (Los Angeles County), and Riverside-San Bernardino-Ontario MSA (Riverside and San Bernardino counties). Workers residing in these MSAs with greater than a two-hour commute would be considered non-local and would likely seek lodging closer to the project site during construction. When analyzing impacts related to project operation, “local workforce” are those workers residing within a one-hour commute of the project. (Ex. 2000, pp. 4.8-7 – 4.8-8.)

Construction and demolition of the HBEP would require an average of 192 workers over a period of 7.5 years. The construction and demolition workforce would peak during months 82 and 83 with 236 workers. (Ex. 2000, p. 4.8-9.)

Socioeconomics Table 4 shows the historical and projected populations for the cities within the six-mile buffer plus Orange County for reference. The city of Huntington Beach is projected to grow about eight percent between 2010 and 2035, compared with a more sizable growth of fourteen percent for Orange County. Population growth within the study area is projected to be concentrated in the cities of Huntington Beach and Fountain Valley.

⁶ An MSA contains a core urban area population of 50,000 or more, consists of one or more counties, and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

**Socioeconomics Table 4
Historical and Projected Populations**

Population	Cities within the Project Study Area					Orange County
	Total	Costa Mesa	Fountain Valley	Huntington Beach	Newport Beach	
2000 ¹	423,328	108,724	54,978	189,594	70,032	2,846,289
2010 ²	440,451	109,960	55,313	189,992	85,186	3,010,232
2020 ³	460,500	113,700	58,300	199,800	88,700	3,266,000 ³ 3,198,279 ⁴
2035 ³	469,300	114,000	59,500	205,500	90,300	3,421,000 ³ 3,311,811 ⁴
2040 ⁴	-	-	-	-	-	3,321,037 ⁴
2050 ⁴	-	-	-	-	-	3,324,920 ⁴
Projected Population Change 2010-2035						
Number	28,849	4,040	4,187	15,508	5,114	410,768*
Percent	6.15	3.67	7.57	8.16	6.00	13.65

Note: - Data not available. *Calculated using the highest 2035 population projection.

(Ex. 2000, p. 4.8-8.)

The primary trades required for the project's demolition and construction as boilermakers, carpenters, electricians, ironworkers, laborers, millwrights, operators, and pipefitters. Demolition and construction activities are estimated to begin in the first quarter of 2015 with the demolition of the existing peaker (Unit 5), fuel tank area, and the stacks from Units 3 and 4. The construction of block 1 would follow beginning in the third quarter of 2016 and the construction of block 2 would begin in the third quarter of 2018. Units 1 and 2 are scheduled for demolition beginning in the fourth quarter of 2020 and construction would conclude with the construction of buildings 33 and 34 (control and maintenance) beginning in the third quarter of 2021 and wrapping up in the third quarter of 2022. The demolition and construction schedule overlaps a few months between each phase of construction during the 7.5-year demolition and construction period for the HBEP. The demolition of Units 3 and 4 is authorized under the Energy Commission's decision for the 00-AFC-13C proceeding and is not part of the HBEP. However, the demolition of Units 3 and 4 are considered in the HBEP cumulative setting. In preparation for construction of block 2, demolition of Units 3 and 4 is estimated to begin in the first quarter of 2016, with completion in the first quarter of 2018. (Ex. 2000, pp. 4.8-8 – 4.8-9.)

Socioeconomics Table 5 shows the total labor by skill for the Los Angeles-Long Beach-Glendale Metropolitan Division and Santa Ana-Anaheim-Irvine and Riverside-San Bernardino-Ontario MSAs would be more than adequate to provide construction labor for the project. **Socioeconomics Table 6** shows the project labor needs for each of the phases of construction compared with the total labor supply in the study area.

Socioeconomics Table 5
Total Labor by Skill in the Study Area: Santa Ana-Anaheim-Irvine MSA, Los Angeles-Long Beach-Glendale Metropolitan Division, Riverside-San Bernardino-Ontario MSA

Craft	Santa Ana-Anaheim-Irvine MSA (Orange County)				Los Angeles-Long Beach-Glendale Metropolitan Division (Los Angeles County)				Riverside-San Bernardino-Ontario MSA (Riverside & San Bernardino Counties)			
	Total Workforce (2010)	Total Projected Workforce (2020)	Growth from 2010		Total Workforce (2010)	Total Projected Workforce (2020)	Growth from 2010		Total Workforce (2010)	Total Projected Workforce (2020)	Growth from 2010	
			Number	Percent			Number	Percent			Number	Percent
Piling Crew	2,400 ¹	2,690	290	12.1	3,310 ¹	4,030	720	21.8	2,510 ¹	3,030	520	20.7
Carpenter	12,410	12,320	-90	-0.7	15,530	17,960	2,430	15.6	10,140	10,450	310	3.1
Laborer	11,900	12,700	790	6.6	23,160	27,810	4,650	20.1	11,870	13,380	1,510	12.7
Teamster	3,540 ²	3,880	340	9.6	16,510 ²	20,280	3,770	22.8	7,810 ²	9,660	1,850	23.7
Electrician	4,880	5,150	270	5.5	10,310	11,360	1,050	10.2	4,000	4,520	520	13.0
Ironworker	380	390	10	2.6	1,130	1,270	140	12.4	700	670	-30	-4.3
Millwright	12,800 ³	14,390	1,590	12.4	300	270	-30	-10.0	140	140	0	0.0
Boilermaker	59,590 ⁴	61,660	2,080	3.5	240	280	40	16.7	52,650 ⁴	57,040	4,390	8.3
Plumber	3,770 ⁵	4,000	220	5.8	8,180 ⁵	9,230	1,050	12.8	3,160 ⁵	3,570	410	13.0
Pipefitter	3,770 ⁵	4,000	220	5.8	8,180 ⁵	9,230	1,050	12.8	3,160 ⁵	3,570	410	13.0
Insulation Worker	250 ⁶	270	20	8.0	93,060 ⁴	108,580	15,520	16.7	52,650 ⁴	57,040	4,390	8.3
Operating Engineer	2,400 ¹	2,690	290	12.1	3,310 ¹	4,030	720	21.8	2,510 ¹	3,030	520	20.7
Oiler/ Mechanic	12,800 ³	14,390	1,590	12.4	34,450 ³	39,640	5,190	15.1	11,260 ³	13,030	1,770	15.7
Cement Finisher	1,760	1,930	170	9.7	2,420	3,020	600	24.8	2,420	2,570	150	6.2
Masons	1,760	1,930	170	9.7	2,420	3,020	600	24.8	2,420	2,570	150	6.2
Roofers	59,590 ⁴	61,660	2,080	3.5	93,060 ⁴	108,580	15,520	0.0	1,700	1,310	-390	-22.9
Sheet Metal Worker	950	960	10	1.1	2,230	2,320	90	4.0	1,440	1,580	140	9.7
Sprinkler Fitters	3,770 ⁵	4,000	220	5.8	8,180 ⁵	9,230	1,050	12.8	3,160 ⁵	3,570	410	13.0
Painters	6,430	6,550	110	1.7	9,360	10,740	1,380	14.7	4,320	4,570	250	5.8
Sheetrockers	3,810 ⁸	3,910	100	2.6	3,690 ⁸	4,680	990	26.8	2,270 ⁸	2,510	240	10.6

Notes: ¹ Operating engineers and other construction equipment; ² Industrial Truck and Tractor Operators; ³ Industrial Machinery Mechanics and ³ Maintenance and Repair Workers, General and Maintenance Workers, Machinery; ⁴ Construction trades workers; ⁵ Plumbers, Pipefitters, and Steamfitters; ⁶ Insulation Workers, Floor, Ceiling, and Wall; ⁷ Insulation workers, mechanical.; ⁷ Helpers-Roofers; ⁸ Drywall and Ceiling Tile Installers; I & C - Control Room craft not included as data is not available.

**Socioeconomics Table 6
Total Labor by Skill in the Study Area MSAs/MD versus Project Labor Needs**

Study Area MSAs					HBEP Construction Workforce Needs- Peak Month by Phase						
Craft	Total Workforce (2010)	Total Projected Workforce (2020)	Growth from 2010		Craft	Demo Peaker & Tank Area	Construct Block 1	Construct Block 2	Demo Units 1 & 2	Construct Bldg 33 & 34 Control Bldg & Maintenance	
			Number	Percent							Demolition/ Construction Period*
			Number	Percent	Peak Month*	June 2015	April 2017	Aug & Sept 2021	March 2023	July 2022	
Piling Crew	8,220	9,750	1,530	18.6	Piling Crew	0	10	10	0	0	
Carpenter	38,080	40,730	2,650	7.0	Carpenter	0	20	25	20	8	
Laborer	46,930	53,890	6,960	14.8	Laborer	30	25	30	8	10	
Teamster	27,860	33,820	5,960	21.4	Teamster	8	8	8	0	4	
Electrician	19,190	21,030	1,840	9.6	Electrician	0	18	25	3	10	
Ironworker	2,210	2,330	120	5.4	Ironworker	0	25	12	3	8	
Millwright	13,240	14,800	1,560	11.8	Millwright	0	8	6	4	0	
Boilermaker	112,480	118,980	6,500	5.8	Boilermaker	4	20	15	0	0	
Plumber	15,110	16,800	1,690	11.2	Plumber	0	10	14	0	4	
Pipefitter	15,110	16,800	1,690	11.2	Pipefitter	0	12	12	2	6	
Insulation Worker	145,960	165,890	19,930	13.7	Insulation Worker	2	8	8	3	4	
Operating Engineer	8,220	9,750	1,530	18.6	Operating Engineer	3	15	15	2	4	
Oiler/ Mechanic	58,510	67,060	8,550	14.6	Oiler/ Mechanic	2	4	4	0	4	
Cement Finisher	6,600	7,520	920	13.9	Cement Finisher	0	10	12	0	6	
Masons	6,600	7,520	920	13.9	Masons	0	0	0	0	4	
Roofers	154,350	171,550	17,200	11.1	Roofers	0	6	8	0	0	
Sheet Metal Worker	4,620	4,860	240	5.2	Sheet Metal Worker	0	8	8	0	6	
Sprinkler Fitters	15,110	16,800	1,690	11.2	Sprinkler Fitters	0	8	8	0	5	
Painters	20,110	21,860	1,750	8.7	Painters	0	6	6	0	6	
Sheetrockers	9,770	11,100	1,330	13.6	Sheetrockers	0	0	0	0	6	
I & C-Control Room	-	-	-	-	I & C-Control Room	0	0	0	0	8	
					Total	Craft	47	205	216	45	75
						Supervision	4	25	20	5	4
						Workforce	51	230	236	50	79
Notes: - Data not available. *Dates, duration, and peak month based on Table 5.10.B-R1 (HBEP 2013e).											

(Ex. 2000, p. 4.8-11.)

The evidence shows that the majority of construction workers are expected to commute daily to the project site and a small workforce, about ten percent (24 workers at peak construction), would likely come from outside of the local commute area. (Ex. 2000, p. 4.8-12.)

HBEP would require 33 full-time employees during project operation: one plant manager, one operations leader, one maintenance leader, one environmental engineer, one maintenance planner, twenty power plant operators, five controls specialty workers, two mechanics and one administrative worker. **Socioeconomics Table 7** presents the occupational employment projections by occupation type for the Santa Ana-Anaheim-Irvine MSA. Based on these employment projections, there would be sufficient labor to supply project operational staffing needs. (Ex. 2000, p. 4.8-12.)

Socioeconomics Table 7
2010 to 2020 Occupational Employment Projections:
Santa Ana-Anaheim-Irvine MSA

Occupational Title	Average Annual Workforce		Employment Change		Project Operations Staff	
	2010	2020	Number	Percent		
Industrial Production Managers	2,300	2,380	80	3.5	Plant Manager	1
General and Operations Managers	25,280	25,540	260	1.0	Operations Leader	1
General and Operations Managers	25,280	25,540	260	1.0	Maintenance Leader	1
Supervisors of Installation, Maintenance, and Repair Workers	3,670	3,990	320	8.7	Environmental Engineer	1
Environmental Engineers	450	580	140	31.1	Maintenance Planner	1
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	8,090	8,650	560	6.9	Power Plant Operator	20
Plant and System Operators	920	990	70	7.6	Controls Specialty	5
Control and Valve Installers and Repairers, Except Mechanical Door	530	570	40	7.5	Mechanic	2
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	8,090	8,650	560	6.9		
Industrial Machinery Mechanics	1,470	1,730	260	17.7		
Secretaries and Administrative Assistants	42,440	47,140	4,690	11.1	Admin	1
Office Clerks, General	31,770	36,420	4,660	14.7		

(Ex. 2000, p. 4.8-12.)

We conclude that the majority of permanent workers would be hired locally and conservatively a small non-local workforce, about ten percent (24 workers at peak construction), may be hired from outside of the local commute area. Any additional new residents would not create a substantial population influx in an area where the population within the six-mile buffer totals 440,451 (see **Socioeconomics Table 4**).

We therefore find that the project's construction and operation workforces would not directly or indirectly induce a substantial population growth in the project area, and therefore, the project would not have a significant impact.

Displacement of Existing Housing Units or Residents

CEQA requires us to find a significant impact if the project would directly or indirectly displace substantial numbers of existing housing units or people, necessitating the construction of replacement housing elsewhere.

The HBEP is proposed to be constructed entirely within the site of existing HBGS. (Ex. 2000, p. 4.8-14.) Therefore, we find that HBEP would not directly displace existing housing or people.

Socioeconomics Table 8 presents housing supply data for the project area. As of April 1, 2010, there were 183,480 housing units within a six-mile buffer of the project site with a vacancy of 11,850 units, representing a 6.5 percent vacancy rate. A five percent vacancy is industry-accepted as a minimum benchmark for a sufficient amount of housing available for occupancy. The housing counts in the project area indicate a sufficient amount of available housing units in a six-mile buffer of the project site. (Ex. 2000, p. 4.8-13.)

**Socioeconomics Table 8
Housing Supply in the Project Area**

Subject	Area			
	Cities in a Six Mile Buffer of Project Site		Orange County	
	Number	Percent	Number	Percent
OCCUPANCY STATUS				
Total housing units	183,480	100	1,048,907	100
--Occupied housing units	171,630	93.5	992,781	94.6
--Vacant housing units	11,850	6.5	56,126	5.4
VACANCY STATUS				
Vacant housing units	11,850	100	56,126	100
--For rent	4,916	41.5	25,254	45
--For sale only	1,200	10.1	8,434	15
--Other**	5,734	48.4	22,438	40.0

Notes: **Cities include Costa Mesa, Fountain Valley, Huntington Beach, and Newport Beach. *Other includes other miscellaneous vacancy status types reported in US Census QT-H1 table.

(Ex. 2000, p. 4.8-13.)

In addition to permanent housing units, Orange County has a large supply of lodging options with about 500 hotels and 55,000 rooms. In Huntington Beach, there are 21 hotels/motels with total of 1,926 rooms and 177 suites. Alternative lodging options also include recreational vehicle camping sites. In Huntington Beach, there are three recreational vehicle camping sites, two operate year-round and the third operates from October 1st through May 31st. Between the two year-round sites, there are 147 spaces with electric, water, and dump out amenities, and 10 overflow spaces without hookups.

The seasonal campsite offers 47 spaces with electric, water, and dump out amenities. (Ex. 2000, p. 4.8-14.)

Given the large supply of lodging choices in Huntington Beach and Orange County and the estimated 10 percent non-local project construction workers (peak estimate, 24 non-local workers), we find that no new housing would be required as a result of the project.

The project would require 33 full-time employees during project operation. The majority of these workers are expected to commute to the project site daily. The evidence shows that three workers would likely relocate to the immediate project area. (Ex. 2000, p. 4.8-14.) The three new residents would not, directly or indirectly, impact the housing supply in the area.

We therefore find that the project would not induce substantial population growth or create the need for replacement housing to be constructed elsewhere.

Result in Substantial Physical Impacts to Government Facilities

As discussed above, we must next consider whether the HBEP will have a significant impacts on law enforcement, schools, or parks, based on service ratios, response times, or other performance objectives.

*For a discussion of project-related impacts on fire and emergency response, please see the **WORKER SAFETY/FIRE PROTECTION** section of this Decision.*

Law Enforcement

The HBEP proposed project site is located within the jurisdiction of the city of Huntington Beach Police Department (HBPD). Their single station serves as headquarters and is located at 2000 Main Street; approximately 3.5 miles from the HBEP site. HBPD's staff includes 200 sworn police officers and 115 civilians (HBPD 2012a). HBPD has a minimum standard of 10 sworn officers per shift and a service standard of 1.1 officers per 1,000 in population. Based on the 2010 population count in Huntington Beach, a staff of approximately 209 officers would meet HBPD's service standard. With 200 officers, HBPD is slightly understaffed based on their service standards. HBPD has a formal mutual aid agreement throughout Orange County law enforcement agencies. The evidence shows that the HBEP would not trigger the need for additional law enforcement services or affect emergency response times from the HBPD. (Ex. 2000, pp. 4.8-14 – 4.8-15.)

The California Highway Patrol (CHP) is the primary law enforcement agency for state highways and roads. The city of Huntington Beach includes segments of the 405 freeway, Beach Boulevard (State Route 39), and Pacific Coast Highway. The CHP is the primary law enforcement agency for the 405 freeway and both CHP and HBPD serve the portions of Beach Boulevard and Pacific Coast Highway within the city of Huntington Beach. CHP services include law enforcement, traffic control, accident investigation and the management of hazardous material spill incidents. The nearest

CHP office is located in Westminster. The **HAZARDOUS MATERIALS MANAGEMENT** section of this document discusses response times for hazardous material spill incidents. (Ex. 2000, p. 4.8-15.)

Given the lack of impact to response times, neither alterations to the existing police station nor the construction of a new police station are required. We therefore find that no physical impact to law enforcement facilities would result. Consequently, there is no significant impact created by the HBEP on law enforcement facilities and response times.

Education

The California Government Code sets forth the “exclusive methods of considering and mitigating impacts on school facilities” resulting from any state or local planning and/or development project, regardless of whether its character is legislative, adjudicative, or both. Govt. Code § 65996(a). Section 65995 expressly provides that “[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995 ... are hereby deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in governmental organization... on the provision of adequate school facilities.” Govt. Code §65995(h). In Chawanakee Unified School District v. County of Madera (2011) 196 Cal.App.4th 1016, the court of appeal held that section 65996 eliminates the need for an environmental review document to contain a description and analysis of a development’s impacts on school facilities. 196 Cal. App. 4th at 1027.

In light of the *Chawanakee* decision, we find that no further analysis of HBEP’s environmental impacts on school facilities is required.

For a discussion of requiring the HBEP to pay school impact fees, please see the “Compliance with LORS” section, below.

Parks

Huntington Beach has 73 parks and public facilities totaling 778 acres, offering such amenities as playground equipment, dog park, amphitheatre, picnic facilities, exercise course, sports fields (e.g. softball and soccer), nature center, fishing, lakes, horseshoes, equestrian trails, sports courts (e.g. volleyball, basketball, tennis, racquetball, and handball). The closest parks to the project site are Edison Community Park and Eader Park. Of the 778 acres of parkland, 208 acres are public beach. Other recreational facilities include the Edison Community Center, Huntington Central Park Sports Complex, city gym and pool, Murdy Community Center, Newland House Museum, and Rodgers Senior Center. The city has a park standard of five acres per 1,000 people. Based on this current estimate, approximately 957 acres of parks would be needed to

meet the park standard—almost 200 acres fewer than the adopted standard. (Ex. 2000, p. 4.8-17.)

In the sections above, we found there would not be a large number of workers moving into the project area during project construction or operation and therefore, there would be little, if any increase in the usage of or demand for parks or other recreational facilities. Therefore, the project would not increase the use of neighborhood or regional parks or recreational facilities to the extent that substantial physical deterioration of the facility would occur or be accelerated. The project would not necessitate the construction of new parks in the area, nor does the project propose any park facilities. For the above reasons, we conclude the project would not create a significant impact on neighborhood or regional parks and recreational facilities.

CUMULATIVE IMPACTS AND MITIGATION

A project may result in significant adverse cumulative impacts when its effects are cumulatively considerable; that is, when the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. (Pub. Res. Code § 21083; Guidelines, tit. 14, §§ 15064(h); 15065 (c); 15130; and 15355.)

In a socioeconomic analysis, cumulative impacts could occur when more than one project in the same area has an overlapping construction schedule, thus creating a demand for workers that cannot be met locally, or when a project's demand for public services does not match a local jurisdiction's ability to provide such services. An influx of non-local workers and their dependents can strain housing, schools, parks and recreation, and law enforcement services. (Ex. 2000, p. 4.8-18.)

Socioeconomics Table 9 contains a list of projects in Huntington Beach and adjacent cities (Costa Mesa, Newport Beach, Westminster, Santa Ana, and Fountain Valley) and those projects' estimated construction timing. (Ex. 2000, p. 4.8-18.)

**Socioeconomics Table 9
Cumulative Projects**

Project Name	Location	Status	Estimated or Actual Construction State Date & Duration	Project Description
International West Hotel East (Site C)	NW corner Harbor Blvd & Twintree Ln, Garden Grove	Approved Dec. 2012	Construction estimated to start between August and October 2013 with a 24 to 30-month construction period.	One full-service hotel and two limited-service hotels, with a total of 769 rooms.
Water Park	Garden Grove	Approved	Construction estimated to start in August 2013 with a 24 to 30-month construction period.	100,000 sq. ft. indoor water park, 600-room hotel, 4+ level parking garage.
Beach Walk	19891 & 19895 Beach Blvd., Huntington Beach	Approved, March 2012, construction permits anticipated April 2013	April 2013 with 1 to 1.5 year construction period.	173 apartment units within a four-story building.
Beach and Ellis Project- Elan Apartments	18502 & 18508 Beach Blvd., Huntington Beach	Approved, demo existing gas station completed, demo permits pending for existing 2-story commercial bldg	1 to 2 year construction period	274- unit apartments, including 8,500 sq. ft. of commercial property and 48,000 sq. ft. of open space.
The Boardwalk (fka Murdy Commons)	7441 Edinger Ave, Huntington Beach	Approved Feb. 2011, construction permits anticipated May 2013	May 2013 with completion in 2016/2017	487 apartment units and 14,500 sq. ft. commercial area on 12.5 acres.
Huntington Beach Generating Station (Demolition of Units 3 & 4)	HBEP project site, Huntington Beach	Approved	First quarter 2016 to first quarter 2018 (27 months)	Demolition/ Removal of Units 3 & 4 from the existing Huntington Beach Generating Station
Huntington Beach Lofts	7302-7400 Center Ave, Huntington Beach	Approved Sept. 2008. In plan check/building permits	May 2013 with 2-year construction period	385 apartment units with 10,000 sq. ft. retail on 3.8 acres.
Pacific City	21002 Pacific Coast Highway, Huntington Beach	Approved 2004. Pending building permits	Construction estimated late 2013 / early 2014 with a 3-year construction period.	516 apartments, commercial, retail, and hotel (250-room, 8 stories).
Poseidon Desalination Plant	HBGS facility, Huntington Beach	Approved by city in 2006, pending California Coastal Commission action	Summer 2014 to Summer 2017	Seawater intake pretreatment facilities.

Project Name	Location	Status	Estimated or Actual Construction State Date & Duration	Project Description
17872 Cartwright, Metropolis residential project	17872 Cartwright, Irvine	Approved	Late Summer/early Fall 2013 start of construction, 18 to 20-month construction period	457-unit (5+stories) residential project.
2501 Alton, Alton & Millikan Apts, Phase II	2501 Alton, Irvine	Under review	Mid 2014 with a 15-month construction period	154-unit apartments.
2801 Kelvin	2801 Kelvin, Irvine	Under review	18-month construction period	384-unit apartments.
Campus and Jamboree	Northwest corner of Campus and Jamboree, Irvine	Revised application received on June 18, 2013. Phased construction and development (3 Phases). First phase submitted for approval in next few months for approximately 400 residential units.	Built in three phases. The first phase is primarily residential. Construction estimated to start on phase 1 in mid 2015 with a 20-24 month construction period. The second phase is predominantly residential, but moving into retail. Estimated 15-month const period beginning mid/end 2016. The third phase has some residential and the majority is retail. The earliest construction can begin is 2017, but existing retail is still under lease, where some leases do not expire until 2020.	Master plan, park plan, and development agreement, 1,600 residential units (5 to 6-story apartments), 17,000 sq. ft. plus primary retail in the Irvine Technology Center, and up to 23,000 square feet of accessory retail and/or residential-serving amenities, 1 acre public park, and two 0.5-acre public plazas.
Jamboree /Michelson SEC	Jamboree/ Michelson, Irvine	Approved. Estimate bldg permits mid May 2013	Mid May 2013	987-unit apartments.
Laguna Canyon Rd. & Old Laguna Canyon Rd.	Laguna Canyon Rd. and Old Laguna Canyon Rd., Irvine	Under review. Estimate early Summer hearing date	Possible Summer 2013 construction start, 1 to 2 year construction period	256 to 258 single family dwelling units.
Pacifica and Spectrum NWC	Pacifica and Spectrum, Irvine	Approved Aug. 16, 2012	Estimated 24-month construction period	573-unit apartments.
Irvine Center Drive and Alton, NWC.	Irvine Center Drive and Alton, Irvine	Approved Aug. 16, 2012	Estimated 24-month construction period	766-unit apartments.
Spectrum Lots 105, 107, and	Irvine Spectrum, Irvine	Approved Summer 2012. Not in hurry to	No planned date for construction,	Development of up to 1,350 multi-family residential units

SOCIOECONOMICS

Project Name	Location	Status	Estimated or Actual Construction State Date & Duration	Project Description
108		build as developer is currently constructing approx. 3,000 units.	unknown construction period	
City of Newport Beach General Plan Update EIR	North Newport Center Planned Community, Newport Beach	Amendment approved Aug. 2012	End of 2014 with an 18-month construction period	Amendment to increase unbuilt multi-family residential development allocation from 430 units to 524 units on 121 acres.
Newport Beach City Hall Reuse Project	Via Lido/Newport Blvd, Newport Beach	Mitigated Neg. Dec., Nov. 2012 for land use change. Additional enviro. review needed once development plan finalized	Early 2015 with a 1.5 to 2 year construction period	The mixed-use land use that could include up to 15,000 sf. of retail commercial or a community center and up to 99,675 sf. for hotel use (120-130 rooms).
Uptown Newport Village Specific Plan Project	Jamboree Rd. and Fairchild Rd., Newport Beach	Draft FEIR submitted Nov. 2012	Two phases of construction. Phase 1 2014 to 2017. Phase 2 Spring 2017 to 2021. Phase 2 construction start contingent on existing building lease set to expire March 2017, but has the option to extend the lease to 2027.	Mixed-use project with 1,244 residential units, 11,500 sq. ft. of retail, and a 2-acre park.
The 301	301 Jeanette Lane, Santa Ana	Under review	2014 with an 18 to 24 month construction period	182 residential units.
Bristol St. Widening	Bristol Street, Santa Ana	Phase 1 complete out of four phases	Phase 2 out to bid with 11-month construction period. Phase 3 June 2015 to June 2016. Phase 4 currently unfunded.	Widening to six lanes.
Grand Avenue Widening	Grand Avenue, Santa Ana	Approved	July 2015 to March 2016.	Widening to six lanes.
The Met	200 East First American, Santa Ana	Approved 2012	Fall 2013 with an 18 to 24 month construction period	271 residential units, approximately 2,000 sq. ft. retail.
Warner Avenue Widening	Warner Avenue, Santa Ana	Approved	Construction in four phases. Phase 1 Jan. 2016 to Jan 2017.	Widening to six lanes.
I-5 / Ortega Highway (SR-74) Interchange	I-5 & SR-74 interchange, City of San Juan Capistrano	Approved, 2009	Early 2013 until Spring 2015	Realign Ortega Highway west of the I-5 southbound ramps and widen I-5 southbound off-

SOCIOECONOMICS

Project Name	Location	Status	Estimated or Actual Construction State Date & Duration	Project Description
Improvement Project				ramp.
I-5 Central County Improvement Project	I-5 between SR-55 and SR-57, cities of Santa Ana, Tustin and Orange.	Environmental review. Draft environmental document is estimated to be released Spring 2013	Late 2015 to late 2017	Add second carpool lane in each direction on I-5 between the SR-55 and the SR-57. Increase weave length between southbound I-5 First Street on-ramp and southbound SR-55 connector.
I-5, SR-73 to El Toro Road	I-5 between SR-73 to El Toro Rd, cities of Laguna Hills, Laguna Woods, Laguna Niguel, Mission Viejo, Lake Forest, and San Juan Capistrano.	Environmental review.	2018 to 2022	Widen the I-5 to accommodate general purpose lanes in each direction. Reestablish existing auxiliary lanes. Extend second carpool lane from El Toro Rd. to Alicia Parkway in both directions and modify ramps as needed. Reconstruct Avery Parkway and La Paz Rd. interchanges.
Avenida Pico to San Juan Creek Road	I-5 between Avenida Pico and San Juan Creek Rd, cities of San Clemente, and San Juan Capistrano, Dana Point.	Approved, 2011	2013 to 2017	Add carpool lane both directions on I-5 between Avenida Pico to San Juan Creek Road. Improve sight distance on southbound horizontal curve north of PCH. Reconstruct interchange at Avenida Pico. Widen northbound Avenida Pico on-ramp to three lanes. Provide dual left-turn lanes to both northbound and southbound Avenida Pico on-ramps. Add soundwalls where needed.
Interstate 405 Improvement Project	Interstate 405 between SR-73 and I-605, cities of Seal Beach, Huntington Beach, Westminster, Fountain Valley, and Costa Mesa.	Final environmental doc. being prepared	2015 to 2019	Widen I-405 between SR-73 and I-605.

(Ex. 2000, pp. 4.8-19- 4.8-22.)

HBEP would employ an average of 192 workers per month during the 7.5-year demolition and construction period. Construction workforce would peak during months 82 and 83 with 236 workers onsite. Once operational, the HBEP would permanently employ 33 workers. Approximately ten percent of the workforce is anticipated to be non-local and would likely relocate closer to the project site. (Ex. 2000, p. 4.8-23.)

Socioeconomics Table 10 presents the total labor force for the crafts specifically needed for the construction of HBEP. (Ex. 2000, p. 4.8-23.)

**Socioeconomics Table 10
Total Labor Supply for Selected MSAs/MD**

Total Labor for Selected MSAs/MD (Construction Workforce)*	Total Workforce for 2010	Total Projected Workforce for 2020	Growth from 2010	Percent Growth from 2010
Santa Ana-Anaheim-Irvine MSA	208,960	219,470	10,510	5.0
Los Angeles-Long Beach-Glendale Metropolitan Division	339,030	395,560	56,530	16.7
Riverside-San Bernardino-Ontario MSA	180,290	197,810	17,520	9.7
TOTALS	728,280	812,840	84,560	11.6
Total Labor for the Santa Ana-Anaheim-Irvine MSA (Operations Workforce)**	Total Workforce for 2010	Total Projected Workforce for 2020	Growth from 2010	Percent Growth from 2010
Operational Power Plant Workforce	116,920	127,990	11,070	9.47

Note: Total workforce includes only the crafts specifically needed for the HBEP. *See **Socioeconomics Table 6** for a list of crafts included in the total construction workforce figures. **See **Socioeconomics Table 7** for a list of occupations included in the total power plant workforce figures.

(Ex. 2000, p. 4.8-23.)

As shown in **Socioeconomics Table 10**, the labor force within the Santa Ana-Anaheim-Irvine MSA and the surrounding MSAs is sufficient to accommodate the labor needs for construction and operation of the HBEP as well as the other projects in the cumulative study area.

Because the workforce is adequate for cumulative projects in the area of HBEP, we find the project will not cause increases in population that would adversely impact the provision of law enforcement services, parks, or school facilities. We therefore find that the proposed HBEP would not result in any significant and adverse cumulative impacts on population, housing, schools, parks and recreation, or law enforcement.

COMPLIANCE WITH LORS

School Impact Fees

The HBEP site is located within the Huntington Beach Elementary City School District (HBCSD) and the Huntington Beach Union High School District (HBUHSD). HBUHSD

collects and distributes the statutory school fees both itself and HBCSD. The rate for the 2011-2012 fiscal year for new commercial or industrial development for the two districts combined is \$0.47 per square foot of covered and enclosed, non-residential space. The applicable fees are calculated prior to the issuance of building permits during plan review. Based on the preliminary project design, approximately 18,200 square feet would be considered chargeable covered and enclosed space. Based on this preliminary estimate, approximately \$8,554 in school fees would be assessed for HBCSD and HBUHSD combined. We impose Condition of Certification **SOCIO-1** to ensure the payment of fees to these school districts. With imposition and implementation of Condition of Certification **SOCIO-1**, we find the HBEP would be in compliance with Section 17620 of the Education Code.

City of Huntington Beach LORS

The evidence shows that the HBEP would be considered an “industrial development project” by the city of Huntington Beach if the city were the permitting authority. (Ex. 2000, pp. 4.8-23 – 4.8-24.) For industrial development projects, the city imposes the following development impact fees:

- Chapter 17.74 (Fire Facilities Development Impact Fee)⁷;
- Chapter 17.75 (Police Facilities Development Impact Fees) ; and
- Chapter 17.76 (Parkland Acquisition and Park Facilities Development Impact Fees).

(Ex. 2000, pp. 4.8-23 – 4.8-24.)

To achieve compliance with the local ordinances of the city of Huntington Beach, we impose Condition of Certification **SOCIO-2** to ensure the applicable fees are paid to the city of Huntington Beach. With the imposition and implementation of Condition of Certification **SOCIO-2**, we find the HBEP is consistent with the LORS of the city of Huntington Beach regarding development impact fees.

NOTEWORTHY PUBLIC BENEFITS

For the purpose of this analysis, staff defines noteworthy public benefits to include changes in local economic activity and local tax revenue that would result from project construction and operation. To assess the gross economic value of the proposed project, the applicant developed an input-output model using proprietary cost data and the IMPLAN Professional 3.0 software package. The assessment used Orange County as the unit of analysis, assuming that expenditures made outside of the county

⁷ The Fire Facilities Development Impact Fee is discussed in the **WORKER SAFETY AND FIRE PROTECTION** section of this document.

represent economic leakage. Impact estimates reflect two different scenarios representing the demolition and construction phase and the operations phase of the project. For both phases, the applicant estimated the total direct, indirect, and induced economic effects on employment and labor income.⁸ Direct economic effects represent the employment, labor income, and spending associated with demolition, construction, and operation of the project. Indirect economic effects represent expenditures on intermediate goods made by suppliers who provide goods and services to the project. Induced economic effects represent changes in household spending that occur due to the wages, salaries, and proprietor's income generated through direct and indirect economic activity.

There are several important caveats to note with regard to input-output analysis and the IMPLAN model. First, the purpose of the analysis is to construct a reasonable profile of the project related investments and to demonstrate the overall magnitude and direction of the economic benefits that would accrue to the surrounding economy. The resulting estimates do not represent a precise forecast, but rather an approximate estimate of the overall economic effect. The IMPLAN model is a static model, meaning that it relies on inter-industry relationships and household consumption patterns, as they exist at the time of the analysis. This is important given that demolition of existing peaker (unit 5), fuel tank, and the stacks from Units 3 and 4 would not begin until the first quarter of 2015 and completion of construction would not occur until the third quarter of 2022. The model also assumes that prices remain fixed, regardless of changes in demand, and that industry purchaser-supplier relationships operate in fixed proportions. The model does not account for substitution effects, supply constraints, economies of scale, demographic change, or structural adjustments.

Pages 5.10-11 to 5.10-14 of the AFC summarize the investment, or expenditure, profile used for the applicant's IMPLAN analysis. According to these figures, the total anticipated capital cost is between \$500 and \$550 million. This includes costs associated with demolition of existing units 1, 2, and 5, as well as construction of Power Blocks 1 and 2. Materials and equipment costs for demolition and construction would equal around \$61.2 million. Around 74 percent of the materials and equipment spending, roughly \$45 million is expected to occur within Orange County. Based on an average hourly rate of \$83 per worker, the total labor cost (including benefits) for demolition and construction is expected to come to equal \$241.4 million. Around 90 percent of the demolition and construction labor would likely come from within Orange County. This would equal \$217.3 million in gross labor income to Orange County

⁸ The Minnesota IMPLAN Group (2012) defines Economic Output as "the value of industry production." In the manufacturing sector, output is equal to total sales, minus inventory changes. For the service sectors, output is equal to total sales. In the retail and wholesale trade sectors, output is equal to the gross margin (i.e. total sales, minus the cost of goods sold).

workers. According to the applicant, annual operation of the proposed project would require an estimated 33 full-time equivalent employees. At an estimated average salary of \$131,920 per year, this would equal roughly \$4.35 million per year in operations payroll (including benefits). Annual non-payroll operations and maintenance (O&M) costs for the HBEP would equal around \$4.45 million. While the applicant assumes that 100 percent of the annual O&M expenditures would be made within Orange County, they acknowledge the likelihood that some portion of the annual O&M budget would be spent in neighboring counties. Therefore, staff anticipates that the benefits to Orange County of non-payroll O&M spending may be somewhat less than estimated.

Socioeconomics Table 11 reports the applicant's estimates of the economic impacts that would accrue to Orange County due to project construction and operation. Note that the table reports economic impact estimates on an annualized basis. All jobs are reported in job-years and must be interpreted with caution.⁹ During the 90-month construction period, the project would generate almost 380 jobs (direct, indirect, and induced) and \$251 million in labor income (direct, indirect, and induced). The average annual economic impact of project operations would equal roughly 73 jobs (direct, indirect, and induced) and \$7.4 million in labor income (direct, indirect, and induced).

⁹ One job-year is the equivalent of one full-time job held for a period of one year. For example, this could equal one full-time job held for 12 months, two full-time jobs held for six months, three full-time jobs held for four months, or two half-time jobs held for one-year, and so on.

**Socioeconomics Table 11
HBEP Economic Benefits (2012 dollars)**

Total Fiscal Benefits	
Estimated annual property taxes	\$5.41 million to \$5.96 million
State and local sales taxes:	
Construction	\$3.5 million
Operation	\$244,668
School Impact Fees	\$8,554 est. total HBCSD and HBUHSD combined
Total Non-Fiscal Benefits	
Total capital costs	\$500 million to \$550 million
Construction payroll (incl. benefits)	\$241.1 million
Operations payroll (incl. benefits)	\$4.35 million
Construction materials and supplies	\$61.15 million
Operations and maintenance supplies	\$4.45 million
Total Direct, Indirect, and Induced Benefits	
Estimated Direct Benefits	
Construction Jobs	192 (average)
Operation Jobs	33
Estimated Indirect Benefits	
Construction Jobs	24
Construction Income	\$1.2 million
Operation Jobs	7
Operation Income	\$1.3 million
Estimated Induced Benefits	
Construction Jobs	163
Construction Income	\$8.4 million
Operation Jobs	33
Operation Income	\$1.7 million
Summary of Local Benefits (to Orange County)¹	
Estimated Direct Benefits	
Construction payroll (incl. benefits) (90 percent to Orange County)	\$217.3 million
Operations payroll (incl. benefits) (74 percent to Orange County)	\$4.34 million
Construction materials & supplies (100 percent to Orange County)	\$45.02 million
Operations & maintenance supplies (100 percent to Orange County)	4.45 million

Note: ¹ Based on applicant's estimates.

(Ex. 2000, p. 4.8-28.)

Property Tax

The Board of Equalization (BOE) has jurisdiction over the valuation of a power-generating facility for tax purposes, if the power plant produces 50 megawatts (MW) or greater. For a power-generating facility producing less than 50 MW, the county has jurisdiction over the valuation. The HBEP would be a 939 MW power generating facility,

therefore, BOE is responsible for assessing property value. The property tax rate is set by the Orange County Auditor-Controller's office.

Assuming a capital cost of \$500 to 550 million and a property tax rate consistent with the current rate for the existing Huntington Beach Generation Station property (1.08299 percent), the project would generate approximately \$5.41 to 5.96 million in property tax revenues during the first operation year of the project (HBEP 2012a, pg. 5.10-14). The estimated revenue includes the assessment of the HBEP only, which would replace the existing assessed Units 1 through 5 upon demolition. The increase in property taxes resulting from the HBEP project would be about eight to nine percent of Huntington Beach's property tax revenues for FY 2011-12. (HB City 2011, pg. 443.)

PUBLIC COMMENTS

The public comments related to the topic of socioeconomics and environmental justice were general in nature. For example, Assemblymember Travis Allen of the 77th Assembly District, mentioned the improved tax base and job growth as reasons for his support of the HBEP.

FINDINGS OF FACT:

1. HBEP would not directly displace existing housing or people.
2. The project's construction and operation workforces would not directly or indirectly induce a substantial population growth in the project area.
3. The project's construction and operation workforce would not have a significant adverse impact on housing within the project area and would not displace any people or housing, or necessitate construction of replacement housing elsewhere.
4. The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives with respect to law enforcement service.
5. The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives with respect to education.
6. The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives with respect to parks.

7. The project would not increase the use of existing neighborhood and regional parks or recreational facilities to the extent that substantial physical deterioration of the facility would occur or be accelerated and new parks are not proposed by or needed because of the project.
8. The workforce available in the area of the HBEP is sufficient for the project plus other future planned projects.
9. The minority population within six miles of the HBEP site is not meaningfully greater than the minority populations in the comparison geographies.
10. The below-poverty-level population within six miles of the HBEP site is not meaningfully greater than the below-poverty-level population in the comparison geographies

CONCLUSIONS OF LAW

1. The HBEP is compliant with all laws, ordinances, regulations, and standards.
2. The HBEP does not create direct or indirect significant adverse impacts on population, housing, schools, parks and recreation, or law enforcement.
3. The HBEP does not create cumulative impacts on population, housing, schools, parks and recreation, or law enforcement.
4. There is not an environmental justice population, based on either the presence of minority or low-income populations, within six miles of the HBEP project site.
5. Payment of school fees to the Huntington Beach Union High School District as required by Education Code Section 17620 constitutes sufficient analysis and mitigation of any impacts of the HBEP on school facilities.

D. NOISE AND VIBRATION

INTRODUCTION

The construction and operation of any power plant creates noise, or unwanted sound. A combination of different factors such as loudness, time of day, and proximity to sensitive receptors determines whether the source of noise will cause significant adverse impacts. In some cases, vibration may be produced by construction activities, such as blasting or pile driving, and may cause structural damage and annoyance.

This topic evaluates whether noise and vibration produced during project construction or operation will be sufficiently mitigated to comply with applicable law. We consider factors such as the character and loudness of the noise, the times of day or night when it is produced, and the proximity to sensitive receptors to determine whether project noise will result in adverse environmental impacts. We also review whether vibration due to construction or operation will cause adverse impacts to adjacent properties.

The CEQA evaluation recognizes that a significant effect from noise may exist if a project would result in:

- exposure of persons to, or generation of, noise levels in excess of standards established in the local General Plan or noise ordinance or applicable standards of other agencies; or
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; or
- substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (Section XI of Appendix G of CEQA Guidelines.) (Cal. Code Regs., tit. 14, appen. G.)

The discussion below also considers the project's compliance with CEQA and the applicable laws, ordinances, regulations and standards (LORS).

APPLICABLE LORS

The LORS applicable to the proposed Huntington Beach Energy Project (HBEP) are set forth below, in **Noise Table 1**.

**Noise Table 2
City of Huntington Beach Noise Element**

Goal	Objective	Policies	Description	Limit	
N1 Adopt/Enforce LORS	N1.2 Prevent/Mitigate Noise	N1.2.1 "Sensitive" Use Impact	Maximum Interior noise levels for new residential, health care, schools and religious (special uses) with exterior levels where $L_{DN} > 60\text{dBA}$.	45 dBA L_{DN} Interior	
		N1.2.2 New Bldg. Design	Maximum exterior noise level created by new industrial and commercial uses.	65 dBA L_{DN} Exterior	
		N1.2.3 Special Design	Maximum interior noise level where new uses create $L_{DN} > 60\text{dBA}$, requiring special design and construction.	45 dBA L_{DN} Interior	
	N1.4 Minimize Exposure		N1.4.1. Vehicle Separation	Maximize distance between commercial or industrial vehicles and "noise sensitive" residential uses.	Maximize Distance
			N1.4.2 Residential Noise	Minimize noise impacts on residential parcels from adjacent commercial or industrial loading and shipping.	Shipping Activity Control
			N1.4.3 Shielding Residential Uses	Commercial or industrial parking lots abutting residential areas buffered and shielded with walls, fences or landscaping.	Buffer/Shield Parking Lots
			N1.4.4 Impact On Adjacent	Commercial or industrial parking lots designed to minimize vehicle noise to adjacent land uses.	Control Vehicle Noise
			N1.4.5 Limit Hours Delivery	Limit hours of commercial and industrial truck deliveries on site and adjacent land uses.	Delivery Time Limits
	N1.6 Control Construct		N1.6.1 Limit Hours Construction	Regulate construction hours by enforcing existing and implementing noise ordinances.	Construct Time Limits
			N1.12 Analyze/ Mitigate	N1.12.1 Municipal Control	Ensure any approved land use having noise impact be adequately analyzed and mitigated.
			N1.12.2 Permit Control		Encourage stationary noise generating sources to reduce noise prior to renewing Conditional Use Permit

(Ex. 2000, p. 4.6-4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project Setting

The proposed HBEP site would be located on a 28.6 acre site in a general use industrial area within Huntington Beach city limits at 21730 Newland Street. It would also be located within the existing AES Huntington Beach Generation Station (HBGS). HBEP would be bounded on the west by a mobile home park, by a tank farm on the north, by the Huntington Channel and residential neighborhoods on the east, by Magnolia Marsh Wetlands on the southeast, and by the Pacific Coast Highway on the southwest. (Ex. 1001, §§ 2.0, 5.7.1.)

HBEP would replace existing HBGS Units 1 through 4 and the decommissioned Unit 5. The proposed demolition and construction would take place over an approximate eight-year period.

Methods and thresholds for determining significance

California Environmental Quality Act (CEQA)

For purposes of evaluating impacts on residential uses, project noise is compared with measured nighttime ambient noise levels, when residents may expect to be able to sleep without disturbance. A significant effect from noise may exist if a project would result in:

- exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels;
- substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

It is generally accepted that a potential for a significant noise impact exists where the noise of the project plus the background exceeds the background by more than 5 dBA at the nearest sensitive receptor. An increase in background noise levels up to and including 5 dBA in a residential setting is insignificant; an increase of more than 10 dBA, however, is clearly significant. An increase of between 5 and 10 dBA could be either significant or insignificant, depending upon the circumstances of a particular case.

Factors to be considered in determining the CEQA significance of noise include:

- the resulting noise level; and
- the duration and frequency of the noise; and
- the number of people affected; and
- the land use designation of the affected receptor sites.

Noise due to construction activities is usually considered to be less than significant in terms of CEQA compliance if:

- the construction activity is temporary; and
- the use of heavy equipment and noisy activities is limited to daytime hours.

Ambient Noise Monitoring

In order to establish a baseline for the comparison of predicted project noise with existing ambient noise, the applicant presented the results of an ambient noise survey conducted on September 19-21, 2012. This survey was performed using acceptable equipment and techniques. The noise survey monitored existing noise levels at the following four locations. The results are shown in **Noise Table 3**.

**Noise Table 3
Sensitive Receptor Summary**

Receptor	Description	L _{eq} dBA	L ₉₀ dBA	Distance PB-1 (feet)	Distance PB-2 (feet)
M1	Gas Meter Station HB Generation Plant	N/A (not a sensitive residential receptor)	N/A (not a sensitive residential receptor)	1,500	500
M2	21851 Newland #48 Mobile Home Park	62	61	1,500	800
M3	22011 Hula Circle Residence	54	41	1,850	2,500
M4	8512 Sandy Hook Dr. Residence	56	46	2,700	2,200

(Ex. 2000, p. 4.6-7.)

Direct Impacts and Mitigation

Noise impacts associated with the project can be created by construction activities and normal operation of the project.

Construction Impacts and Mitigation

Construction of the HBEP is expected to be typical of similar projects in terms of equipment used and types of activities, but would have a longer than normal schedule of approximately 8 years (Ex. 1001 § 5.7.4.2). During construction, various discrete activities would occur concurrently, creating a cumulative noise effect. The evidence shows that the phase when the demolition of existing Units 3 and 4 and the construction of PB-1 (Power Block 1) are occurring, in the two year period from 2016 to 2018, is when noise levels are mostly likely to be greatest.

Compliance with LORS

Construction of an industrial facility such as a power plant is typically noisier than permissible under standard noise ordinances. In order to allow the construction of new facilities, construction noise during certain hours of the day is commonly exempt from enforcement by local ordinances. The applicable local noise LORS do not limit the loudness of construction noise. Applicant commits to performing noisy construction work during the times specified in the City of Huntington Beach Noise Element (Ex. 1001, § 5.7.7.3.1). Condition of Certification **NOISE-6**¹ restricts construction to those times. Therefore, the noise impacts of the HBEP construction activities would comply with the noise LORS.

Worker Effects

The applicant has acknowledged the need to protect construction workers from noise hazards and has recognized applicable LORS that would protect construction workers. (Ex. 1001, §§ 5.7.4.2.3, 5.7.4.3.1, 5.7.7.1.2, 5.7.7.2.1). To ensure that construction workers are, in fact, adequately protected, we adopt Condition of Certification **NOISE-3**.

CEQA Impacts

The worst-case construction noise levels at the nearest residential receptors range between 57 and 64 dBA. As seen in **Noise Table 4** below, the compounded construction noise of Units 3-4 demolition and PB-1 construction would increase noise levels at residential receptor M2 by 4 dBA, at M3 by 5 dBA, and at M4 by 4 dBA. The differential increases at all three locations would be less than 10 dBA and thus below the level of significance. (Ex. 2000, p. 4.6-8.)

¹ The Conditions of Certification are found in Appendix A to this Decision.

Noise Table 4
Predicted Construction Noise Levels

Receptor	Combined Construction Noise Level L_{eq} (dBA)	Measured Ambient Avg. Daytime L_{eq} (dBA)	Cumulative Noise Level (dBA)	Change Noise Level (dBA)	Distance from Construction of PB-1 (feet)	Distance from Demolition of Units 3 & 4 (feet)
M2	64	62	66	+4	1,500	800
M3	58	54	59	+5	1,850	2,500
M4	57	56	60	+4	2,700	2,200

(Ex. 2000, p. 4.6-9.)

To ensure construction noise would reduce the potential for noise complaints, we adopt Condition of Certification **NOISE-6**, which restricts construction to daytime, with the exception of limited, short-term nighttime construction to be performed with the approval of the Energy Commission's compliance project manager. **NOISE-6** also requires construction equipment and trucks to avoid generating excessive and unnecessary noise.

Condition of Certification **NOISE-8** requires pile driving be performed in a manner to reduce the potential for noise complaints (see analysis below under **Vibration**). Condition of Certification **NOISE-7** requires that a silencer be installed on the steam blow piping to reduce steam blow noise. Finally, Conditions of Certification **NOISE-1** and **NOISE-2** would establish a public notification and noise complaint process to resolve any complaints regarding construction noise.

Vibration

The only construction work likely to produce vibration that could be perceived off site would be pile driving. The applicant anticipates that pile driving would be required for construction of the HBEP. (Ex. 1001, §§ 5.7.4.2.2, 5.7.4.3.4, Table 5.7-9.)

The noise level from pile driving at HBEP would range from 73-78 dBA at receptor M2, 70-73 dBA at M3, and 71-74 dBA at M4. Assuming daytime ambient noise levels of 62 dBA at M2, 54 dBA at M3, and 56 dBA at M4, the increased noise range would be as high as 16 dBA at M2, 19 dBA at M3, and 18 dBA at M4. An increase of 16-19 dBA would likely constitute a significant impact. Pile driving using traditional techniques can potentially cause a significant noise impact at the nearest noise-sensitive receptors. (Ex. 2000, p. 4.6-10.)

Several methods are available for reducing noise and vibration generated by traditional pile driving. These methods are: (1) the use of pads or impact cushions of plywood; (2) dampened driving, which involves some form of blanket or enclosure around the hammer; and (3) the use of vibratory drivers. These methods can be effective in reducing the noise by 8-15 dBA as compared to unsilenced impact drivers. (Ex. 2000, p. 4.6-10.)

Conditions of Certification **NOISE-6 (Construction Noise Restrictions)** and **NOISE-8 (Pile Driving Management)** would ensure that pile driving would be performed at a time, and in a manner, to reduce the potential for any noise complaints.

Steam Blows

Typically, the loudest noise encountered during construction of any project incorporating a steam turbine is steam blows. During erection and assembly of the feed water and steam systems, the piping and tubing have accumulated dirt, rust, scale, and construction debris such as weld spatter, dropped welding rods, and the like. If the plant were started up without thoroughly cleaning out these systems, all this debris would find its way into the steam turbine, quickly destroying the machine.

To clean out the unwanted material, high-pressure steam is allowed to escape to the atmosphere through the steam piping. This flushing action, referred to as a “high pressure steam blow,” is quite effective at cleaning out the steam system

High pressure steam blows, if un-silenced, would produce a range of 96-103 dBA at M2, M3 and M4. With a silencer installed on the steam blow piping, noise levels would be reduced to a range of 59-63 dBA at M2, M3 and M4. These levels are acceptable, because the impact is temporary and steam blows would occur during the day. Thus, we adopt Condition of Certification **NOISE-7** in order to limit steam blow noise to 89 dBA at 50 feet, and to limit this activity to daytime hours. (Ex. 2000, p. 4.6-11.)

Traffic Noise during Construction

The number of vehicles required for material delivery and worker commute would increase the traffic on the roadway network around the project. The additional traffic caused by project construction activity would center on the 4.5 acres (430 stalls) of onsite and contiguous parking for project workers, and deliveries to and from the 8 acres of lay-down area. As a result, the intersection of Newland and Hamilton would experience a considerable increase in traffic volume during the short period before the start of construction each day, prior to 7 a.m. Without proper mitigation, this may result in noise complaints from the nearest residents, considering it would occur in early morning. However, the residential communities near this intersection have already received sound attenuation by means of existing sound walls along the sidewalk setbacks. The single story houses northeast of the intersection of Newland and Hamilton are protected with masonry sound walls approximately eight feet in height. The two-story residences northwest of this intersection have higher walls designed to protect the taller structures. We find that these existing masonry walls would provide adequate acoustical protection from the noise of increased traffic converging on the construction site.

Operation Impacts and Mitigation

The primary operational noise sources of the HBEP would include engine generators and their exhaust stacks, combustion air inlets, gas compressor, air-cooled condensers (ACCs), electric transformers, and various pumps and fans.

Applicant-proposed noise mitigation measures include the following: (Ex. 1001, § 5.7.4.3.3.)

- heat recovery steam generator (HRSG) stack silencing;
- inlet air silencing;
- gas compressor enclosure;
- acoustical shrouding of HRSG transition duct;
- combustion turbine generator auxiliary enclosure; and
- localized sound walls.

In addition, the project would avoid the creation of annoying tonal (pure-tone) noises by balancing the noise emissions of various power plant features during plant design. (Ex. 1001, § 5.7.4.3.3.)

Compliance with LORS

The applicant performed noise modeling to determine the project's noise impacts on sensitive receptors.

The cumulative operational noise level from PB-1 and PB-2 is 61 dBA at M2, 45 dBA at M3, and 49 dBA at M4. The cumulative noise levels for M3 and M4 fall below the nighttime limit of 50 dBA in the local noise ordinance and comply with the noise element's maximum exterior noise level of 65 dBA. (Ex. 2000, p. 4.6-14.)

The existing ambient level at M2 is 62 dBA. Thus, project operation at M2 must not create a noise level above 62 dBA. Project operational noise would be 61 dBA at M2, 1 dBA below this limit. (Ex. 2000, p. 4.6-14.)

Condition of Certification **NOISE-4** would ensure that the project would comply with the above noise level limits. This condition of certification requires an operational noise survey to ensure project compliance. This survey would be conducted in two parts. Part 1 would measure project noise when PB-1 becomes operational and Part 2 would measure the combined noise levels from PB-1 and PB-2 when PB-2 becomes operational, almost three years later. The reason for this two-part survey is the long timeframe between the expected online dates for PB-1 and PB-2. It would ensure that PB-1 remains in compliance within that timeframe instead of waiting until the entire project becomes fully operational.

Conditions of Certification **NOISE-1** and **NOISE-2** would establish a public notification and noise complaint process requiring the applicant to resolve any problems that may be caused by operational noise.

With implementation of these conditions of certification, noise due to project operation would comply with the applicable LORS.

CEQA Impacts

A power plant under base load may produce a steady, continuous, broadband noise. Under load following duty, the power plant noise may be intermittent. This would be more noticeable at nighttime when background noises are reduced. Where power plant noise is audible, it tends to define the background noise level. For this reason, staff typically compares projected power plant noise to existing ambient background noise levels at affected sensitive receptors. If this comparison identifies a significant adverse impact, then feasible mitigation must be applied to the project to either reduce or remove that impact.

HBEP is expected to operate as an intermediate load and peaking facility, and thus, it could likely operate at night. Adverse impacts on residential receptors can be identified by comparing predicted power plant noise levels with the nighttime ambient background noise levels at the nearest sensitive residential receptors.

The applicant has predicted operational noise levels, which are summarized in **Noise Table 5** below.

**Noise Table 5
Predicted Operational Noise Levels at Sensitive Residential Receptors and
CEQA Limits**

Receptor	Measured Ambient, Four Quietest Consecutive Nighttime Hours, L ₉₀ (dBA) ²	Operational Noise Level (dBA) ³	Cumulative, Project Plus Ambient (dBA)	Change (dBA)
M2	61	61	64	+3
M3	41	45	46	+5
M4	46	49	51	+5

(Ex. 2000, p. 4.6-15.)

An increase of up to 5 dBA is a less-than-significant impact. **Noise Table 5** shows that the maximum expected increase is 5 dBA. Implementation of Condition of Certification **NOISE-4** will ensure that the changes in noise levels due to project operation would

² Average of the 4-quietest nighttime-hour measurements conducted in September 2012. (HBEP 2012u, Appendix A and Figure DR PYLE 7-1.)

³ Table DR PYLE 6-1, Additional Responses to Jason Pyle’s Data Requests, Set 1 (#1-16)

neither cause the cumulative effect of operational noise to exceed the LORS limits nor increase noise above the 5 dBA differential at the nearest sensitive receptors.

Tonal Noises

Tonal noises are individual sounds (such as pure tones) which, while not louder than permissible levels, stand out in sound quality. The applicant plans to address overall noise in project design, and to take appropriate measures, as needed, to eliminate tonal noises as possible sources of complaints (Ex. 1001, § 5.7.4.3.3). Implementation of Condition of Certification **NOISE-4** will ensure that tonal noises do not cause nuisance.

Linear Facilities

All water pipes and gas pipes would be underground and therefore silent during plant operation. Noise effects from electrical interconnection lines typically do not extend beyond the lines' right-of-way easements and would be inaudible to receptors.

Vibration

Vibration from an operating power plant could be transmitted through two primary means: ground (ground-borne vibration), and air (airborne vibration).

The operating components of a three-on-one combined cycle power plant consist of high-speed gas turbines, heat recovery steam generators, 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. Gas turbine generator facilities using the Mitsubishi MHI 501 system have not resulted in ground-borne or airborne vibration impacts. We find that ground-borne vibration from the HBEP would be undetectable by any likely receptor. (Ex. 2000, p. 4.6-16.)

Airborne vibration (low frequency noise) can rattle windows and objects on shelves, and can rattle the walls of lightweight structures. The HBEP's chief source of airborne vibration would be the gas turbines' exhaust. In a power plant such as the HBEP, however, the exhaust must pass through the selective catalytic reduction (SCR) modules and the stack silencers before it reaches the atmosphere. The SCRs act as efficient mufflers. The combination of SCR units and stack silencers makes it highly unlikely that the HBEP would cause perceptible airborne vibration effects. (Ex. 2000, p. 4.6-16.)

Worker Effects

The applicant acknowledges the need to protect plant operating and maintenance workers from noise hazards and commits to compliance with all applicable LORS (Ex. 1001, § 5.7.7). Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection would be required and provided. Implementation of Condition of Certification **NOISE-5** would ensure that plant operation and maintenance workers are adequately

protected. For further discussion of proposed worker safety conditions of certification, please see **WORKER SAFETY AND FIRE PROTECTION** section of this Decision.

Cumulative impacts and mitigation

Section 15130 of the CEQA guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, compound or increase the impact.

There is one major planned project in the area that when combined with HBEP could create a significant adverse noise impact at M2-M4: the Poseidon Seawater Desalination Project (Poseidon) planned to be located immediately northeast of HBEP. Poseidon is designed to provide 50 million gallons per day (mgd) of potable water to the City of Huntington Beach and adjacent municipalities. As currently proposed, Poseidon would utilize the existing HBGS seawater cooling system by circulating sea water from the existing intake and sending it through water treatment for potable use. Excess concentrated seawater solution from the treatment process would combine with bypassed seawater, diluting the seawater concentrate before the combined flow discharges back to sea from the existing ocean outfall. (Ex. 2000, p. 4.6-17.)

Construction

As a means of enforcement of construction-related mitigation measures, the Poseidon environmental impact report incorporates condition **CON-15**, which includes the requirement for adequate mufflers on vehicles, compliance with the City's noise ordinance, the use of temporary barriers, and routing control of construction vehicles.

At the same-time, the HBEP would require compliance with a number of conditions of certification, which would assure the effective control of construction noise:

- **NOISE-2:** Noise complaint, documentation and resolution; and
- **NOISE-6:** Noise control of construction activities; and
- **NOISE-7:** Steam blow control; and
- **NOISE-8:** Noise control during pile driving activities.

While various construction activities of the two projects may occur simultaneously, we conclude that both projects would incorporate adequate restrictions and controls to mitigate the noise impacts of any combination of construction activities below the level significance.

Operation

Condition of Certification **NOISE-4** limits nighttime operational noise levels resulting from HBEP alone to 61 dBA at M2, 45 dBA at M3, and 49 dBA at M4. The Final

Subsequent Environmental Impact Report for Poseidon predicts the noise levels from its operational activities to be 49 dBA near M2, 41 dBA near M3, and 43 dBA near M4.

Combining 61 dBA and 49 dBA at M2 results in 61 dBA, which does not change the existing ambient level. Combining 45 dBA and 41 dBA at M3 results in 46 dBA, which is 5 dBA above the existing ambient level. Combining 49 dBA and 43 dBA at M4 results in 50 dBA, which is 4 dBA above the existing ambient level. None of these increases exceed to 5 dBA threshold of significance.

Facility Closure

All operational noise from the project would cease when HBEP closes, and no further adverse noise impact from its operation would be possible. The remaining potential temporary noise source would be the dismantling of the project structures and equipment, as well as any site restoration work that may be performed. Since this noise would be similar to that caused by the original construction, it could be similarly treated -- that is, noisy work could be performed during daytime hours with machinery and equipment that are properly insulated and/or equipped with mufflers. Any noise LORS in existence at that time would apply. Unless modified, applicable conditions of certification included in this Decision would also apply.

FINDINGS OF FACT

Based on the evidence, the Commission makes the following findings and reaches the following conclusion:

1. Construction and operation of the HBEP will not create noise levels noticeably above existing ambient levels in the surrounding project area.
2. Construction noise levels will be mitigated to the extent feasible by employing measures such as construction notification, limiting construction to daytime hours in accordance with local noise control laws and ordinances, and a noise complaint process.
3. Measures contained in the conditions of certification and compliance with local LORS will assure that noise from construction and operation is mitigated to below the level of significance.
4. Operational noise will increase noise above existing ambient levels in the surrounding project area, but not above the level of significance.
5. Operational noise levels will be mitigated by employing a noise complaint process and noise restrictions near sensitive receptors.
6. The project owner will implement measures to protect workers from injury due to excessive noise levels.

7. The HBEP will not create ground or airborne vibrations which cause significant off-site impacts.
8. Implementation of the conditions of certification identified below will ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

CONCLUSION OF LAW

The Commission concludes that implementation of the following conditions of certification will ensure that the HBEP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration, and that the project will not cause indirect, direct, or cumulative significant adverse noise impacts.

E. VISUAL RESOURCES

INTRODUCTION

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. In this section, we examine HBEP's visual impacts to determine whether the project has the potential to cause substantial degradation to existing views of the site and its surroundings.

SETTING

*For general project description, including location of the facility and the equipment to be installed, please see the “**PROJECT DESCRIPTION AND PURPOSE**” section of this Decision (Section II, above).*

The area surrounding the HBEP is characterized by broad sandy beaches, low bluffs and mesas, and lowland areas and is entirely within the Coastal Zone. A sequence of mesas and bays provide the most notable diversity in local landforms in Huntington Beach, including the Huntington Beach Mesa. The project site is over a mile south of the southern edge of the Huntington Beach Mesa. When viewed from the coast, the bluffs partially mask urban development in the northern coastal area of the county. Conversely, broad views of the Pacific Ocean coastline are possible from the bluffs of the Huntington Beach and Bolsa Chica mesas and portions of the Pacific Coast Highway (PCH). (Ex. 2000, p. 4.12-3.)

The HBGS is in an area of existing and former energy and utility facilities and warehouse-commercial development that is surrounded to the west, north, and east by residential neighborhoods and open space and recreational uses. The closed Ascon Landfill site is northeast of the HBGS site. The area on the north side of the HBGS includes the SCE 230-kilovolt (kV) switchyard and three above-ground, decommissioned fuel oil storage tanks. (Ex. 2000, p. 4.12-4.)

The Huntington Beach Wetlands Conservancy (Conservancy) owns and operates the Wetlands & Wildlife Care Center along the southwest side of the HBGS site. Beginning in May 2014, the interpretive center was opened to the public, with initial tours averaging 50–100 visitors per month with the number expected to double. The Conservancy manages Magnolia Marsh along the southeast border of the HBGS, which is one of four areas of wetlands making up the Huntington Beach Wetlands complex. Magnolia Marsh is designated as the Conservancy's primary area for interpretive trail use and ecotourism. Visitors to the marsh use the observation deck at the southwest corner of the marsh and a pathway along the HBGS fence line to Upper Magnolia Marsh. (Ex. 2000, p. 4.12-4.)

The “Huntington By-The-Sea Mobile Estates and RV Park” on Newland Street borders the west side of the HBGS site between the power plant site and the PCH. Huntington State Beach and its public facilities and parking lots border the ocean side of the PCH. (Ex. 2000, p. 4.12-4.)

The HBEP would be built on the existing HBGS site which is landscaped with trees and shrubs that have grown tall enough to visually screen the lowest portions of some of the power plant structures for views along Newland Street, the PCH, and Huntington State Beach. An 8-foot masonry wall fronted by street trees was installed along the site border on Newland Street, as depicted on the landscape plan. The main entrance to the HBGS site on Newland Street is landscaped with shrubs and flowers and small lawn areas. (Ex. 2000, p. 4.12-4.)

The proposed project would use the existing lighting of the HBGS structures, including exterior lighting on the stack platforms, scaffolding on the power block exteriors, and exterior staircases. The tops of the existing exhaust stacks are lit with red aircraft safety warning beacons. (Ex. 2000, p. 4.12-5.)

The existing HBGS generates steam to produce electricity, and the technology and operational characteristics produce visually prominent water vapor plumes from the HBGS exhaust stack for Units 1 and 2 in varying weather conditions. Water vapor plumes form more frequently and are most visible during daytime hours in the winter when the sky is relatively clear. Highly visible water vapor plumes from the power plant slightly increase the industrial character and appearance of the site. (Ex. 2000, p. 4.12-5.)

The dimensions and quantities of the above-ground proposed project components are summarized in **Visual Resources Table 1**.

**Visual Resources Table 1
Visually Prominent Proposed HBEP Structures**

Project Feature	Length (feet)	Width (feet)	Height (feet)	Power Block 1 (quantity)	Power Block 2 (quantity)	Elsewhere On Site (quantity)
Combustion Gas Turbine (CGT)	89	32	34	3	3	—
CGT Generator Enclosure	16	39	34	3	3	—
CGT/Heat Recovery Steam Generator (HRSG) Transition Duct	14	32	31	3	3	—
CGT Enclosure	41	32	25	3	3	—
Steam Turbine Generator Enclosure	59	55	40	1	1	—
HRSG	77	44	92	3	3	—
Stack (see note)	—	—	120	3	3	—
CGT Air Intake System	40	17	38	3	3	—
Fuel Gas Compressor Building	144	75	25	—	—	1
Air Cooled Condenser	209	127	104	1	1	—
Control / Administration Building	100	72	40	—	—	1
Maintenance / Warehouse Building	72	60	35	—	—	1
Transformer Wall	53	42	30	4	4	—
Transmission Structure	—	—	85–135	3	2	—
Transmission Dead-End Structure	—	—	75	3	3	—

Note: The diameter of the stacks is approximately 18 feet.

(Ex. 2000, p. 4.12-18.)

STANDARDS OF REVIEW/ LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

California Environmental Quality Act (CEQA)¹

Under the Guidelines, an impact on visual resources is considered significant if 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;

¹ The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, Title 14, section 15000 et seq.,(Guidelines) which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as “CEQA”.

- create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

(Guidelines, tit. 14, § I.)

Laws, Ordinances, Regulations, and Standards (LORS)

Visual Resources Table 2 describes the state and local laws, ordinances, regulations and standards that apply to our analysis of visual resources potentially impacted by the HBEP.

**Visual Resources Table 2
Applicable Laws, Ordinances, Regulations, and Standards (LORS)**

Applicable LORS	Description
State	
California Coastal Act, Public Resources Code section 30000, et seq.	The Coastal Act includes policies addressing many environmental and land use management issues and defines the Coastal Zone boundary where those policies apply. Requires that development within the Coastal Zone be visually compatible with the character of the area and, where feasible, restore and enhance visual quality in visually degraded areas.
Local	
City of Huntington Beach General Plan	The General Plan for the city of Huntington Beach, adopted May 13, 1996, provides the framework for management and utilization of the city’s physical, economic and human resources. The General Plan establishes the location, types, intensity and distribution of land uses throughout the city, including areas within the coastal zone. The General Plan is organized into the following Chapters: Community Development; Infrastructure and Community Services; and Natural Resources; and Hazards. In addition, the city has adopted a Coastal Element that serves as the city’s Local Coastal Program, and was certified by the California Coastal Commission in March 1985.
Huntington Beach Zoning and Subdivision Code , Huntington Beach Municipal Code, Titles 20-25	The Zoning Ordinance establishes specific zone districts and land use regulations for properties within the city. The Zoning and Subdivision Code also serve as the Local Coastal Plan Implementation Plan.

(Ex. 2000, pp. 4.12-2 - 4.12-3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

CEQA

Scenic Vistas

A “scenic vista” is sometimes defined as a distant view through or along an avenue or opening. For this visual resources analysis, scenic vista is further defined as a view that

includes remarkable or memorable scenery or a view of a natural or cultural feature that is indigenous to the area. The proposed HBEP would be constructed in a mostly developed area of the Southern California coastline. Magnolia Marsh is part of a complex of restored wetland areas providing views of undeveloped open space along the southeast side of the HBEP site. Uninterrupted views of the Pacific Ocean are possible from Huntington State Beach. However, most landside views in the vicinity of the existing HBGS include built elements typical of coastal development in similar urbanized areas near the coast. No particular view in the project vicinity has a level of scenic appeal that could distinguish it as a scenic vista; therefore, no further analysis of the project relating to this criterion is necessary. (Ex. 2000, p. 4.12-6.)

Scenic Resources/State Scenic Highways

The PCH (State Route 1) borders the southwest-west side of the project site. The PCH is not an officially designated state scenic highway in the region; therefore, no further analysis of the project relating to this criterion is necessary. (Ex. 2000, p. 4.12-6.)

Degradation of Existing Visual Character

To determine whether the HBEP has the potential to degrade the existing visual character of the area near the project, the Commission compares the existing visible physical environmental setting with the anticipated visual change introduced by the proposed project from fixed vantage points called “Key Observation Points” (KOPs). KOPs are selected to be representative of the most characteristic and most critical viewing groups and locations from which the project would be seen. The likelihood of a visual impact exceeding the criteria contained in the CEQA Guidelines, above, is determined in this study by two fundamental factors: the susceptibility of the setting to impact as a result of its existing characteristics (reflected in its current level of visual quality, the potential visibility of the project, and the sensitivity to scenic values of its viewers); and the degree of visual change anticipated as a result of the project. These two factors are summarized respectively as *visual sensitivity* (of the setting), and *visual change* (due to the project) in the discussions below. Briefly, KOPs with high sensitivity (due to outstanding scenic quality, high levels of viewer concern, etc.) that experience high levels of visual change from a project are more likely to experience adverse impacts. (Ex. 2000, pp. 4.12-6 – 4.12.-8.)

Staff also reviews federal, state, and local LORS and their policies or guidelines for aesthetics or preservation and protection of sensitive visual resources that may be applicable to the project site and surrounding area. These LORS include local government land use planning documents (e.g., General Plan, zoning ordinance). (*Id.*)

Visual Resources Figure 1, below, shows the locations of the seven KOPs used in the analysis of the HBEP

- **KOP 1** – View from Huntington State Beach
- **KOP 2** – View from the Huntington Beach Municipal Pier
- **KOP 3** – View from Edison Community Park
- **KOP 4** – View from Magnolia Street near the Pacific Coast Highway
- **KOP 5** – View from the Driveway Entrance to the Huntington By-The-Sea Mobile Estates and RV Park
- **KOP 6** – View from the Pacific Coast Highway near Brookhurst Street
- **KOP 7** – View from the Southern Bluff of the Huntington Beach Mesa

(Ex. 2000, pp. 4.12-7 – 4.12-8.)

These KOPs are depicted in the context of the overall project viewshed or area of potential visual effect within the visual sphere of influence (VSOI.)

The VSOI for the proposed HBEP takes into account the estimated visibility of its most visible structures on the project site, existing development in the area, and other variables potentially affecting visibility of the site. The highest level of visibility exists when the viewer is stationary and has direct views of the site (e.g., nearby residents). A lower level of visibility exists, for example, when the viewer is farther from the site (e.g., residents that are approximately a mile or more from the site) and/or are traveling on local roadways not immediately adjacent to the site. (Ex. 2000, p. 4.12-7.)

The limits of the VSOI for the project generally extend approximately 1½ miles. At greater distances, the mass of project structures in the views would be much less dominant compared to views at closer distances. (Ex. 2000, p. 4.12-7.)

While beyond the 1½ miles generally used for the VSOI, we also include the view from the end of the Huntington Beach Municipal Pier because the pier is described as a visual asset in the Coastal Element of the City's General Plan. (Ex. 2000, p. 4.12-7.)

Intervenor Monica Rudman suggested that the Commission also consider views of the HBEP from the Newport Beach Pier. (Ex. 4006; Monica Rudman's Opening Brief on the Huntington Beach Energy Project (TN 202961), pp. 12-14.) However, Intervenor Rudman did not provide sufficient information regarding the factors utilized to determine impacts (visual quality, viewer concern (also referred to as viewer sensitivity), visibility, number of viewers, and duration of view.) We therefore decline to use the Newport Beach Pier as a KOP.

Our analysis of the project's effect on each KOP is presented under "Operation Impacts and Mitigation".

Construction Impacts and Mitigation

Construction Equipment

The proposed project would require several areas for construction worker parking and construction laydown during site demolition and construction. No existing visual buffering screens public views of the open lots, which would presumably be full of vehicles during daylight hours and sometimes at night while construction progressed on the HBEP. Other proposed construction parking areas include an existing Huntington Beach parking lot south of the PCH, a small lot at the project site, and an area at the Plains All American Tank Farm east of the project site. **Visual Resources Figure 2** delineates the construction worker parking areas for the proposed project. (Ex. 2000, p. 4.12-28.)

A 16-acre off-site construction laydown area for storage of HBEP components would be established in an open lot next to the AES Alamitos Generating Station (AGS) in Long Beach, California. The laydown area is along the west side of a riprapped and channelized segment of the San Gabriel River that is flanked by industrial uses, including the Los Angeles Department of Water and Power's Haynes Generating Station, decommissioned fuel oil tanks, high-voltage transmission lines, and the AGS. A segment of the San Gabriel River Bike Trail borders the east side of the river through this industrial area. Westminster Boulevard crosses the San Gabriel River approximately 900–1,000 feet south of the proposed construction laydown area. Views toward the AGS and the construction laydown area from Westminster Boulevard are dominated by the AGS and the Haynes Generating Station and adjacent high-voltage power lines (see **VIS Figure 3**). Views toward the AGS from the bridge are partially screened by trees and shrubs between the construction laydown area and the bridge. (Ex. 2000, p. 4.12-28.)

To address the potential impact caused by the presence of unsightly construction during the 90 month construction timeframe, we adopt Condition of Certification **VIS-3**², which provides for screening of construction staging sites and protection of existing landscaping plantings that would not be removed during construction and demolition. With the imposition and implementation of Condition of Certification **VIS-3**, we find the potentially significant impact of construction related equipment and the loss of existing landscaping to be mitigated to a level of "less than significant".

² The Conditions of Certification are found in Appendix "A" to this Decision.

Construction Lighting

The majority of construction activities will occur during daylight hours, However, some construction activities may take place 24 hours a day, seven days a week. The frequency of this nighttime work over an 8½ year construction schedule is not known. The illumination of parking areas to support the workers for these nighttime activities is also not specified. (Ex. 2000, pp. 4.12-30 – 4.12-31.)

While the Applicant has committed to having any necessary construction lighting be task specific and shielded to the extent feasible, we adopt Condition of Certification **VIS-4**, that requires the project owner to minimize the potential adverse impacts of long-term lighting for demolition, construction, and commissioning work. We find that the imposition and implementation of Condition of Certification **VIS-4** would reduce long-term adverse lighting impacts to less than significant.

Operation Impacts and Mitigation

Before turning to a discussion of the impacts, during the Commission's review of the HBEP, the city of Huntington Beach City Council voted to adopt Resolution No. 2014-18. (Ex. 1134.) In that document, the Huntington Beach City Council reviewed proposed architectural improvements include three, 125-foot-tall surfboards as focal points for views from the PCH and Huntington State Beach. Visual screening includes semiopaque, decorative wave forms to partially screen views of the two power blocks. A trompe l'oeil (fool the eye) paint design is proposed for the air cooled condenser (ACC) units. The City approved the resolution with the following modifications:

- The surfboard design shall be substantially three-dimensional and of a sufficient size and proportion for a realistic representation of a surfboard.
- The trompe l'oeil painting of windows on the ACC units shall be modified to look more like a resort hotel with a treatment that more closely resembles hotel improvements.
- The HBEP structures shall be painted in a combination of tans and browns on the lower portions and light blue on the upper portions.
- No signs or other identifying features shall be painted or attached to the stacks, ACC units, or heat recovery steam generators (HRSGs).
- The final architectural plan and color scheme shall be subject to review by the city of Huntington Beach Planning and Building Department.

(Ex. 2000, p. 4.12-19.)

We impose Condition of Certification **VIS-1** requiring preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures that is consistent with

the architectural treatments and modifications recommended in the City's adopted Resolution No. 2014-18. We will discuss the effect of Condition of Certification **VIS-1** on those KOPs that may have significant impacts to visual resources.

KOP 1 – View from Huntington State Beach

Visual Resources Figure # . (VR Figure 4a, existing view).shows the existing view at KOP 1 from Huntington State Beach, across the PCH from the project sit. (Ex. 2000, p. 4.12-8.) The evidence establishes that more than 16 million people visit the beach each year .These viewers include beachgoers, motorists on PCH, and people walking, bicycling, and jogging on the trail that parallels the southbound lanes of the PCH. (Ex. 2000, pp. 4.12-8 – 4.12-10.)

Visual Sensitivity

The existing HBGS is composed of immense, complex, mechanical structures in an area where the built environment is generally characterized by low buildings and relatively open views of the ocean and coastline and nearby residential, recreational, and tourist-oriented uses. Because of its dominance, HBGS creates disunity in the viewpoints. Overall visual quality for KOP 1 is characterized as *low*. (Ex. 2000, p. 4.12-9.)

Due to the dominance and encroachment of the HBGS in views from KOP 1 and the lack of visual intactness and unity of elements in the view, visual quality is characterized as low. Viewer concern is characterized as high because of the number of visitors. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 1 is considered moderate to high. (Ex. 2000, pp. 4.12-9 – 4.12-10.)

Visual Change

Visual Resources Figure 4b shows the visual simulation as the HBEP would appear at the end of construction. Like the existing power plant, the forms and lines of the metal surfaces and massive geometric shapes of the new HBEP structures would dominate the landscape and contrast sharply with the relatively low-profile structures in the vicinity of KOP 1. (Ex. 2000, pp. 4.12-19 – 4.12-20.)

Impact Significance

From this viewpoint, demolishing the HBGS exhaust stacks and replacing the existing massive power blocks with angular, metallic power plant structures would not change visual resource conditions to any notable or significant degree. Compared to existing conditions, implementation of the HBEP with no architectural enhancements or other screening would not substantially degrade the existing visual character or quality of the

site and its surroundings for views at or near KOP 1, and the impact is considered less than significant. (Ex. 2000, p. 4.12-20.)

Mitigation

Because the impact to KOP 1 is considered less than significant, no mitigation is required. Nonetheless, Condition of Certification **VIS-1** requires the applicant to prepare and implement a Visual Screening and Enhancement Plan for Project Structures that is consistent with the architectural treatments and modifications recommended in the City's adopted Resolution No. 2014-18. **Visual Resources Figure 4c** shows the proposed architectural enhancements at KOP 1. The visual enhancements from the implementation of Condition of Certification **VIS-1**, coupled with the applicant's landscaping plan, provides further reduction of any perceived changes between the HBGS and the HBEP. (Ex. 2000, pp. 4.12-20 – 4.12-21.)

Residual Impact Significance After Mitigation:

With implementation of these measures, overall project visual change within this portion of the viewshed could be reduced to a low level, a less-than-significant level of impact, in the long term.

KOP 2 – View from the Huntington Beach Municipal Pier

Visual Resources Figure 5a shows the view from the end of the Huntington Beach Municipal Pier. The pier is used by sport fishermen, pedestrians and sightseers, surfing spectators, and others. Tourist-oriented uses include a restaurant and shops. A lifeguard tower is on the pier. (Ex. 2000, p. 4.12-10.)

Visual Sensitivity

The two existing 202-foot-tall boiler exhaust stacks are visible at the HBGS site in the center of the photograph, and the generating units behind the stacks appear as a massive built structure near the beach. Other than the exhaust stacks, very little structural detail can be discerned at the site. Views of the coastline from KOP 2 show the generally low-profile development and familiar palm trees in this coastal area. North of the power plant, the tile roof of the sprawling Hyatt Regency Huntington Beach is visible from KOP 2. The Waterfront Hilton Beach Resort is another prominent building in the coastal view, and it is partially visible on the left side of the photograph (The scale of development up and down the coast as viewed from the pier is otherwise relatively uniform in height. The distant ridgeline of the Santa Ana Mountains is visible in the background beyond the HBGS. (Ex. 2000, p. 4.12-10.)

The Huntington Beach Municipal Pier is an icon of the city and a popular tourist destination. Viewer concern for KOP 2 is assumed to be high due to the mostly recreational nature of the area. (Ex. 2000, p. 4.12-10.)

Views toward the HBGS from KOP 2 are unobstructed and mostly unscreened; however, due to the distance between the viewpoint and the HBGS, visibility is considered moderate for KOP 2. (Ex. 2000, p. 4.12-10.)

Because of the high number of tourists and recreationists to Huntington Beach and the many recreational opportunities in the area, the number of viewers for KOP 2 is considered high. Because pedestrians on the pier are likely to spend time casually surveying their surroundings and taking in the views, duration of view is estimated to be high. (Ex. 2000, pp. 4.12-10 – 4.12-11.)

Based on the ratings for visibility, number of viewers, and duration of view, overall viewer exposure for KOP 2 is considered moderate to high. (Ex. 2000, p. 4.12-11.)

Visual quality is characterized as moderate to high. Viewer concern is characterized as high. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 2 is considered moderate to high. (Ex. 2000, p. 4.12-11.)

Visual Change

Visual Resources Figure 5b shows the visual simulation as the HBEP would appear at the end of construction. From KOP 2, the proposed HBEP appears to cover a larger area compared to the existing HBGS. The 1½-mile distance to the project site from the viewpoint for KOP 2 would temper the visual contrast of the proposed power plant structures with the environment. Due to the distance between the viewpoint and the project site, the degree of visual contrast for KOP 2 is considered low to moderate. (Ex. 2000, p. 4.12-21.)

Impact Significance

For KOP 2, although overall visual sensitivity is considered moderate to high, the overall visual change for the proposed HBEP compared to existing conditions with construction of the project is low to moderate. Compared to existing conditions, implementation of the HBEP with no visual screening would not substantially degrade the existing visual character or quality of the site and its surroundings for views at or near KOP 2, and the impact is considered less than significant. (Ex. 2000, p. 4.12-21.)

Mitigation

No mitigation is required as the impact is considered to be less than significant.

KOP 3 – View from Edison Community Park

Visual Resources Figure 6a shows KOP 3 as seen from the children's play area at Edison Community Park, approximately one-half mile from the existing HBGS site. Visual Resources Figure 7 was photographed by staff to show another view of Edison Community Park looking southeast from near the KOP 3 viewpoint.

Visual Sensitivity

Near foreground views are dominated by play and recreation areas, parkland trees, and buildings in the park. The view includes the transmission towers along Hamilton Avenue and tall light standards adjacent to a sports field in the park. Vehicles on Hamilton Avenue and portions of adjacent residential areas are visible in background views. Features in the landscape include mature landscape trees on the park grounds amid built parkland structures and evidence of the urban area beyond the park boundaries. The mixture of various built elements in the view generally detracts from the visual coherence and compositional harmony of the park as a whole, and visual unity is moderate. Visual intactness is also moderate. Visual quality for KOP 3 is characterized as moderate. (Ex. 2000, p. 4.12-11.)

Approximately 1,000 residences are within approximately one-quarter to one-half mile of the park in this community, although views of the existing HBGS from residential areas southeast and east of the site are at least partially screened visually by the earthen berm and dense row of vegetation along Magnolia Street between Hamilton Avenue and the Huntington Beach Channel. Viewers at KOP 3 include Huntington Beach residents and families engaged in play or sports activities at Edison Community Park; however, no estimates of the number of users of the park are available. Although the view of the HBGS site is mostly unscreened, and the power plant structures are clearly visible in the background, park visitors at KOP 3 are expected to be engaged in on-site activities rather than closely observing the aesthetics of the visual environment beyond the park (Ex. 2000, pp. 4.12-11 – 4.12-12.)

The evidence shows that viewer concern is assumed to be high or moderate to high for KOP 3. Visibility of the project site is considered moderate for KOP 3 because views toward the HBGS from KOP 3 show the transmission line structures, the berm along Hamilton Avenue, and, in the distance, the power plant structures of the HBGS. (Ex. 2000, p. 4.12-12.)

Based on the ratings for visibility, number of viewers, and duration of view, overall viewer exposure for KOP 3 is considered moderate to high. Visual quality is characterized as moderate. Viewer concern is characterized as high or moderate to high. (Ex. 2000, p. 4.12-12.)

Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 3 is considered moderate to high.

Visual Change

Visual Resources Figure 6b shows the visual simulation as the HBEP would appear at the end of construction. The Power Block 2 HRSGs, stacks, and expansive ACC are visible on the left side of the visual simulation beyond the earthen berm along the south

side of Hamilton Avenue. The Power Block 1 ACC and tops of the stacks are visible in the center of the field of view and further in the distance compared to Power Block 2. The existing transmission structures at the SCE switchyard would remain in the view for KOP 3. (Ex. 2000, pp. 4.12-21- 4.12-22.)

Impact Significance

The visual simulation for KOP 3 shows a change in the massing of structures at the HBEP site. However, the new structures would not dominate the landscape due to their distance from the viewer and the direction of view away from the immediate environment of the play and sports fields at the park. Construction of the new power plant structures for the HBEP would create a low degree of view blockage compared to HBGS. (Ex. 2000, p. 4.12-22.)

Overall visual sensitivity for KOP 3 is considered moderate to high. The overall visual change for the proposed HBEP compared to existing conditions with construction of the project is low to moderate. Compared to existing conditions, implementation of the HBEP with no visual screening would not substantially degrade the existing visual character or quality of the site and its surroundings for views at or near KOP 3, and the impact is considered less than significant. (Ex. 2000, p. 4.12-22.)

Mitigation

While the impact to visual resources at KOP 3 is considered less than significant, Condition of Certification **VIS-1** includes paint treatment that could further reduce the visual contrast with the environment compared to views of the HBEP with no visual enhancements. (Ex. 2000, p. 4.12-22.)

Residual Impact Significance After Mitigation:

With implementation of these measures, overall project visual change within this portion of the viewshed could be reduced to a low level, a less-than-significant level of impact, in the long term.

KOP 4 – View from Magnolia Street near the Pacific Coast Highway

Visual Resources Figure 8a show the existing conditions at HBGS from Magnolia Street along the southeast border of Magnolia Marsh near the PCH. Visual Resources Figure 9 shows another view that includes part of Brookhurst Marsh, the Huntington Beach Channel, and residences on the east side of Magnolia Street. Foreground views of wetland vegetation and open water contrast sharply with near middleground views of the HBGS boiler exhaust stacks and power blocks beyond the wetland. The existing power plant is approximately 1,740 feet from KOP 4, and the mechanical structures are distinctly visible at this distance. (Ex. 2000, p. 4.12-12.)

Visual Sensitivity

The power plant dominates views westward from KOP 4 and overshadows the subtle visual variety of natural elements in the marshlands. Accordingly, Unity of the view from KOP 4 is low to moderate. Visual quality for KOP 4 is characterized as low to moderate. (Ex. 2000, pp. 4.12-12 – 4.12-13.)

The viewpoint for KOP 4 primarily represents motorists, pedestrians, and bicyclists traveling north and south on Magnolia Street, which is part of the grid of arterial roads that interconnect the city's residential neighborhoods immediately north of the HBGS. Local residents entering and exiting the PCH at Magnolia Street have completely unobstructed foreground views of the HBGS from KOP 4. Given the proximity of KOP 4 to the PCH, this viewpoint approximately represents the foreground views for northbound motorists on this coastal highway. (Ex. 2000, p. 4.12-13.)

Based on the ratings for visibility, number of viewers, and duration of view contained in the record, overall viewer exposure for KOP 4 is considered high. (Ex. 2000, p. 4.12-13.)

Visual quality is characterized as low to moderate. Viewer concern is characterized as high. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 4 is considered moderate to high. (Ex. 2000, p. 4.12-14.)

Visual Change

Visual Resources Figure 8b shows the visual simulation as the HBEP would appear at the end of construction.

Similar to the existing power plant, the massive, angular forms and industrial-type structures of the proposed HBEP would contrast sharply with the natural landscape and subtle colors and textures of the marsh. The proposed HBEP would increase the mass, number, and prominence of power plant structures in the view for KOP 4. Because Power Block 1 would be constructed at the furthest northeast portion of the project site adjacent to Magnolia Marsh (500–600 feet east of the existing power block structures), the level of visual contrast and increased dominance of power plant structures in the view would be greater for this KOP compared to existing conditions. The degree of visual contrast created by the proposed HBEP power plant structures at the project site from KOP 4 is considered moderate. (Ex. 2000, P. 4.12-22.)

Impact Significance

Compared to existing conditions, implementation of the HBEP with no visual screening would substantially degrade the existing visual character of the site and its surroundings

for views at or near KOP 4, and the impact is considered adverse and potentially significant.(Ex. 2000, P. 4.12-23.)

Mitigation

Condition of Certification **VIS-1** requires the applicant to prepare and implement a Visual Screening and Enhancement Plan for Project Structures that is consistent with the architectural treatments and modifications recommended in the City’s adopted Resolution No. 2014-18. **Visual Resources Figure 10** shows the proposed architectural enhancements at KOP 4 (Ex. 2000, p. 4.12-23.)

Condition of Certification **VIS-2** mandates preparing and implementing a Perimeter Screening and On-site Landscape and Irrigation Plan to screen and soften views of the power plant. Condition of Certification **VIS-2** requires the applicant to complete the project’s final general arrangement/site plan to determine on-site constraints for new or replacement landscape plantings. Although the ultimate extent and location of landscape plantings is not yet known, Condition of Certification **VIS-2** requires landscape plantings in all available on-site perimeter spaces along the northwest, southwest-west, and southeast-east project site boundaries. (Ex. 2000, p. 4.12-23.)

We adopt Condition of Certification **VIS-2** to provide further mitigation for impacts to the viewshed from KOP 4.

Residual Impact After Mitigation

With imposition and implementation of Conditions of Certification **VIS-1** and **VIS-2** , overall project visual change within this portion of the viewshed could be reduced to a low level, a less-than-significant level of impact, in the long term.

KOP 5 – View from the Driveway Entrance to the Huntington By-The-Sea Mobile Estates and RV Park (Existing Condition)

Visual Resources Figure 11 shows the view of the driveway entrance to the existing HBGS from inside the driveway entrance to the “Huntington By-The-Sea Mobile Estates and RV Park” (mobile home park). (Ex. 2000, p. 4.12-14.)

Visual Sensitivity

The massive complex of structures at HBGS Units 3 and 4 are clearly visible and prominent in the foreground view from Newland Street and the area near KOP 5. HBGS Units 1 and 2 are visible beyond Units 3 and 4 from the area near KOP 5. The visual clutter of the piping and steel support structures of the power blocks are displayed, and no exterior structure or façade encloses the inner mechanical apparatus of the power plant. No visual coherence or compositional harmony is present in the view, and visual unity is low. Visual quality for KOP 5 is characterized as low. (Ex. 2000, p. 4.12-14.)

The viewpoint for KOP 5 represents motorists, pedestrians, and local residents traveling north or south on Newland Street. Local residents and vacationers at the mobile home park have mostly unobstructed foreground views of the HBGS from KOP 5 and the area near this viewpoint. Viewer groups represented by KOP 5 are primarily expected to be local residents and recreationists, and viewer concern is assumed to be high for this KOP. Under existing conditions, landscape visual screening elements partially screen the lowest structures at the HBGS that would otherwise be visible from KOP 5 and the mobile home park. The bulk of the HBGS structures are completely visible and unscreened above the tops of the landscape trees at the HBGS site. Views of the HBGS from KOP 5 are mostly unimpeded, and visibility of the existing power plant at this location is high. (Ex. 2000, p. 4.12-14.)

Newland Street is one of the arterial roads connecting the Huntington Beach community to the PCH; with traffic volumes averaging 12,000 vehicles per day. The mobile home park includes at least 300 mobile home sites and more than 100 recreational vehicle camp sites. Based on street traffic volume and the number of residences in the mobile home park, the number of viewers for KOP 5 is high. The attention of motorists near the intersection of Newland Street at the PCH is primarily focused on traffic conditions, other motorists, bicyclists, and nearby pedestrians. Duration of view for motorists on Newland Street is estimated to be moderate. For pedestrians and bicyclists near KOP 5 and residents at the mobile home park, duration of view increases to high. The overall duration of view for KOP 5 is estimated to be moderate to high. (Ex. 2000, p. 4.12-15.)

Based on the ratings for visibility, number of viewers, and duration of view, overall viewer exposure for KOP 5 is considered high. (Ex. 2000, p. 4.12-15.)

Visual quality is characterized as low. Viewer concern is characterized as high. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 5 is considered moderate to high. (Ex. 2000, p. 4.12-15.)

Visual Change

Visual Resources Figure 11b shows the visual simulation as the HBEP would appear at the end of construction. The HBEP Power Block 2 HRSGs and stacks would be constructed close to the same location as the existing HBGS Units 3 and 4. The view from KOP 5 following construction of the HBEP would include a side view of the immense ACC, which would measure 127 feet wide and stand 104 feet tall. (Ex. 2000, p. 4.12-24.)

Impact Significance

The proposed HBEP would increase the mass, number, and prominence of HBEP structures in the view for KOP 5 compared to existing conditions. This change represents a potentially significant impact to the view for KOP 5. (Ex. 2000, p. 4.12-24.)

Mitigation

Condition of Certification **VIS-1** requires the applicant to prepare and implement a Visual Screening and Enhancement Plan for Project Structures that is consistent with the architectural treatments and modifications recommended in the City's adopted Resolution No. 2014-18. **Visual Resources Figure 12** shows the proposed architectural enhancements at KOP 5. (Ex. 2000, p. 4.12-25.)

Condition of Certification **VIS-2** mandates preparing and implementing a Perimeter Screening and On-site Landscape and Irrigation Plan to screen and soften views of the power plant. Condition of Certification **VIS-2** requires the applicant to complete the project's final general arrangement/site plan to determine on-site constraints for new or replacement landscape plantings.

Residual Impact After Mitigation

With imposition and implementation of Conditions of Certification **VIS-1** and **VIS-2**, overall project visual change within this portion of the viewshed could be reduced to a low level, a less-than-significant level of impact, in the long term.

KOP 6 – View from the Pacific Coast Highway near Brookhurst Street (Existing Condition)

KOP 6 was photographed from the shoulder next to the northbound lanes of the PCH looking north from a viewpoint immediately north of Brookhurst Street and is shown in Visual Resources Figure 13a. This KOP represents the view for northbound motorists on the PCH as they enter Huntington Beach. (Ex. 2000, p. 4.12-15.)

Visual Sensitivity

The PCH is a six-lane highway at this location, and the roadway itself commands the full attention of motorists along the highway corridor depending on the traffic flow and time of day of travel. HBGS Unit 1 and one of the exhaust stacks are clearly visible in the distant foreground from KOP 6, and they are the tallest and most prominent features in the view. The existing power plant is approximately 1 mile ahead of KOP 6 near the east side of this coastal highway, and as motorists continue north, the HBGS appears to increase in size until it dominates the field of view from the PCH near Newland Street. (Ex. 2000, p. 4.12-15.)

Under existing conditions, direct views of the HBGS from KOP 6 are unobstructed and unscreened. Due to the distance between the viewpoint and the HBGS, visibility is considered moderate to high for KOP 6. (Ex. 2000, p. 4.12-16.)

In addition to the high traffic volumes on the PCH near the HBGS, traffic volumes on Brookhurst Street near its intersection with the PCH average 12,000 vehicles per day. The number of viewers for KOP 6 is considered high. Based on traffic flow, direct views

of the power plant could continue for up to 2 minutes. The duration of view for KOP 6 is therefore estimated to be moderate to high. (Ex. 2000, p. 4.12-16.)

Based on the ratings for visibility, number of viewers, and duration of view, overall viewer exposure for KOP 6 is considered moderate to high. (Ex. 2000, p. 4.12-16.)

Visual quality is characterized as moderate. Viewer concern is characterized as moderate to high or high. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 6 is considered moderate to high. (Ex. 2000, p. 4.12-16.)

Visual Change

Visual Resources Figure 13b shows the visual simulation as the HBEP would appear at the end of construction. The simulation of the HBEP Power Block 1 shows a row of three HRSGs and stacks that are partially obscured beyond the chain-link fence between the PCH and Brookhurst Marsh. For a motorist in an automobile or truck on the PCH near KOP 6, the viewpoint would be further from the fence and elevated slightly compared to the view for a pedestrian at KOP 6; therefore, the visibility of HBEP Power Block 1 structures would increase for a motorist compared to the view for a pedestrian at KOP 6. (Ex. 2000, pp. 4.12-25 – 4.12-26.)

Impact Significance

The visual simulation for KOP 6 shows a change in the massing of structures at the HBEP site. Although the new structures would not dominate the landscape due to their distance from the pedestrian viewer at KOP 6, the visual dominance of the power blocks and ACCs would increase for northbound motorists on the PCH. Compared to existing conditions, implementation of the HBEP with no visual screening would not substantially degrade the existing visual character or quality of the site and its surroundings for views at or near KOP 6, and the impact is considered less than significant. (Ex. 2000, p. 4.12-26.)

Mitigation

As the impact is considered to be less than significant, no mitigation is required.

KOP 7 – View from the Southern Bluff of the Huntington Beach Mesa (Existing Condition)

KOP 7 was photographed from Frankfort Avenue to represent views from the residential area along the southern bluff of the Huntington Beach Mesa. The viewpoint for KOP 7 is about 1¼ miles northwest of the existing HBGS at the entrance to the Huntington Shorecliffs Mobile Home Park and is shown in **Visual Resources Figure 14a**. (Ex. 2000, p. 4.12-17.)

Visual Sensitivity

The two existing HBGS 202-foot-tall exhaust stacks and generating units are visible on the horizon beyond the tops of residences and landscape trees between the viewpoint for KOP 7 and the HBGS site. Other than the exhaust stacks, very little structural detail can be discerned at the site. The landscape generally shows an expanse of rooftops and stands of landscape trees and more residences in the distance. Very little visual coherence or harmony is apparent in views from KOP 7, and no particular visual element draws the viewer's attention. Visual intactness and unity are moderate. Visual quality for KOP 7 is characterized as moderate. (Ex. 2000, p. 4.12-17.)

The viewpoint for KOP 7 represents Huntington Beach residents, and viewer concern is assumed to be high for this KOP. Views toward the HBGS from KOP 7 are mostly unscreened; however, due to the distance between the viewpoint and the HBGS, visibility is considered low to moderate for KOP 7. Approximately 35 residences are located along the north side of Frankfort Avenue east of Delaware Street. The existing HBGS is probably visible from other residences along the bluff; therefore, the number of viewers for KOP 7 is considered moderate to high or high. Duration of view for residential viewers is estimated to be high. (Ex. 2000, p. 4.12-17.)

Based on the ratings for visibility, number of viewers, and duration of view, overall viewer exposure for KOP 7 is considered moderate to high. (Ex. 2000, p. 4.12-17.)

Visual quality is characterized as moderate. Viewer concern is characterized as high. Based on the ratings for visual quality, viewer concern, and overall viewer exposure, overall visual sensitivity for KOP 7 is considered moderate to high. (Ex. 2000, p. 4.12-17.)

Visual Change

Visual Resources Figure 14b shows the visual simulation as the HBEP would appear at the end of construction. The HBEP power blocks would barely be visible beyond the roof tops and palm trees covering most of the foreground of the view. The HBEP HRSGs and stacks would not be noticeably visible behind the trees in the distance. (Ex. 2000, p. 4.12-26.)

Impact Significance

Removal of the HBGS exhaust stacks somewhat reduces the level of visual contrast for KOP 7; however, the approximately 1¼-mile distance to the project site from KOP 7 greatly tempers the visual contrast for either the existing HBGS or the proposed project. Compared to existing conditions, the degree of visual contrast compared to existing conditions is considered low. Similarly, visual dominance and view blockage are considered low for KOP 7. Compared to existing conditions, implementation of the HBEP with no visual screening would not substantially degrade the existing visual

character or quality of the site and its surroundings for views at or near KOP 7, and the impact is considered less than significant.(Ex. 2000, pp. 4.12-26 – 4.12-27.)

Mitigation

As the impact is considered to be less than significant, no mitigation is required.

Overall Project Operation Impacts on Existing Visual Resources

Project operation impacts from all identified KOPs on the existing visual character and quality of the setting would be less than significant with implementation of the Conditions of Certification we adopt herein

Light or Glare

The proposed project during operation has the potential to introduce light off-site to surrounding properties, and up-lighting to the nighttime sky. If bright exterior lights were not hooded, and lights not directed onsite they could introduce significant light or glare to the vicinity.

Operation of the HBEP Power Block 1 at the northeast corner of the project site would introduce new lighting sources where there are currently no power generating facilities. We therefore conclude that permanent HBEP lighting would create a new source of substantial light or glare that could adversely affect nighttime views in the area. We impose Condition of Certification **VIS-5** to require preparation and implementation of a comprehensive Lighting Management Plan for the HBEP. (Ex. 2000, p. 4.12-30.)

Given the long-term construction schedule and the potential for the Lighting Management Plan to become dated, we adopt Condition of Certification **VIS-6** requiring preparation and submittal of a letter report on the approved Lighting Management Plan to determine whether updates to the plan are needed (e.g., to implement lighting technology changes). (Ex. 2000, pp. 4.12-30 – 4.12-31.)

Imposition and implementation of Conditions of Certification **VIS-5** and **VIS-6** would reduce potential adverse impacts of project operations lighting to less than significant.

The potential for glare from project structures to adversely affect daytime views in the project area is considered a significant impact of the HBEP. Condition of Certification **VIS-1** addresses minimizing potential visual effects of glare from project surfaces, which reduces this adverse impact to less than significant.

Visible Plumes

When a thermal power generation facility is operated at times when the ambient temperature is low and relative humidity is high, the warm moisture (water vapor) in the exhaust plume condenses as it mixes with the cooler ambient air, resulting in formation

of a visible plume³. Formation of visible plumes typically occurs on cool, humid days when the outdoor air is at or near saturation⁴. (Ex. 2000, p. 4.12-31.)

The evidence shows that power plants like the proposed HBEP produce high velocity, high temperature exhausts that disperse quickly, thereby minimizing the probability that visible plumes would form above the stacks. The HBEP would not include wet cooling towers with evaporative cooling. Instead, the HBEP would use dry cooling (the ACCs) for heat rejection with no possibility of forming water vapor plumes. (Ex. 2000,p. 4.12-31.)

We therefore find that no impact on visual resources would occur pertaining to formation of visible plumes.

CUMULATIVE IMPACTS

Cumulative impacts correspond to a project's potential incremental effect, together with other closely related past, present, and reasonably foreseeable future projects whose impacts on visual resources may compound or increase the incremental effect of the project on such resources. (Ex. 2000, pp. 4.12-31- 4.12-32.)

This analysis addresses the incremental effects of the HBEP combined with these projects:

- Poseidon Seawater Desalination Project;
- Ascon Landfill Remedial Action Plan;
- Demolition of HBGS Units 3 and 4; and
- Demolition of the Plains All American Pipeline Tank Farm

(Ex. 2000, p. 4.12-32.)

The evidence shows that a mix of development in the project area characterizes visual resources conditions. Except for the Huntington Beach Wetlands complex, the project area is mostly developed with urban land uses in a coastal setting. The existing cumulative condition for visual resources in the project area includes the HBGS, which the City identifies as a visual weakness that contributes negatively to the visual quality of the community. Given the location of the HBEP at the site of existing and former energy and utility facilities, and our conclusion above regarding visual sensitivity, the cumulative baseline condition for adverse visual resources impacts is considered significant. The future demolition and removal of the tank farm from the Plains All

³ Relative humidity is the percentage of the amount of water vapor in the air. The colder the air, the less water vapor it can carry.

⁴ Saturated air is air containing the maximum amount of water vapor possible at a given temperature.

American Pipeline property will reduce the industrial appearance of the area east of the HBEP site; however, no improvements will be implemented following demolition, and the site will be left vacant and unimproved. The addition of the four cumulative projects reviewed does not change the existing baseline condition for visual resources to a noticeable extent. The proposed HBEP would alter the cumulative baseline by changing the configuration and massing of power plant structures on the site. (Ex. 2000, pp. 4.12-32 – 4.12-34.)

Although the use and purpose of the power plant site would not change with demolition of the HBGS and construction of the proposed project, we reasonably conclude that construction of a highly visible power plant with no visual screening or enhancement would continue to contribute considerably to the cumulatively significant effect for visual resources. With implementation of all recommended conditions of certification, this cumulatively significant effect would be reduced to less than significant.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The General Plan designates the segment of the PCH through its planning area as a major urban scenic corridor. The Circulation Element of the General Plan includes policies on maintaining and enhancing the visual quality and scenic views along designated scenic corridors. (Ex. 2000, p. 4.12-34 – 4.12-35.)

Visual Resources Table 3 summarizes the discussion contained above as it related to the LORS we identified in **Visual Resources Table 2**.

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
California Coastal Act of 1976		
<p>Section 30251 Scenic and visual qualities. The scenic and visual qualities of coastal areas shall be considered and protected. Permitted development shall be visually compatible with the character of the area and, where feasible, to restore and enhance visual quality in visually degraded areas.</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the city of Huntington Beach (City), and timely comments from those agencies will be considered by the Energy Commission Compliance Project Manager (CPM) prior to plan approval.</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
City of Huntington Beach General Plan		
Land Use Element (City of Huntington Beach 2013b)		
<p>Goal LU 4. Achieve and maintain high quality architecture and landscapes. Objective LU 4.1 and Policies 4.1.2, 4.1.3, and 4.1.4. Promote development of public buildings and sites that convey a high quality visual image. Prepare and submit a landscape plan for development projects subject to discretionary review.</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Goal LU 13. Achieve development of a mix of uses that support the needs of the City's residents. Policy LU 13.1.8. Ensure that public buildings, sites, and infrastructure improvements are compatible in scale, mass, character, and architecture with existing buildings and characteristics prescribed for the district in which they are located.</p>	<p>Refer to the analyses (below) under the goals, policies, and objectives for the Urban Design Element.</p>	<p>The existing HBGS is in the "Edison & Sanitation District" described in the <i>Urban Design Guidelines</i> (City of Huntington Beach 2000). Compliance with the goals, policies, and objectives listed below for the Urban Design Element would achieve consistency with the general guidelines for land uses in the district.</p>
Urban Design Element (City of Huntington Beach 1996)		
<p>Goal UD 1. Enhance the visual image of the City of Huntington Beach. Policy UD 1.2.1. Require public improvements to enhance the existing setting for all key nodes, and incorporate landscaping to mask major utilities, such as the Edison generating station.</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Goal UD 2. Protect and enhance public coastal views and oceanside character and screen uses that detract from the City's character. Objective UD 2.1 and Policy 2.1.1. Minimize visual impacts of development on public views to the coastal corridor. Require new development be designed to consider coastal views in its massing, height, and site orientation. Objective UD 2.2 and Policies 2.2.1, 2.2.4, and 2.2.5. Minimize visual impacts of utilities where they are incompatible with surrounding uses by requiring landscape and architectural buffers and screens. Require the review of new or expanded</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
existing utility facilities to ensure no visual impairment of coastal corridors and entry nodes. ⁵		
Circulation Element (City of Huntington Beach 2013a)		
<p>Goal CE 8. Maintain and enhance visual quality and scenic views along designated scenic corridors.</p> <p>Policy 8.1. Protect and enhance viewsheds along designated scenic corridors. <i>(See VR Figure 23 of this staff assessment, which shows the City's scenic corridors and entry nodes.)</i></p> <p>Policy 8.7. Require development projects adjacent to a designated scenic corridor to include landscape areas that enhance the corridor and create a buffer between the building site and the roadway.</p> <p>Policy 8.11. To the greatest extent possible, locate new and relocated utilities underground within scenic corridors. All other utility features shall be placed and screened to minimize visibility.</p>	<p>Consistent, with implementation of VIS-1, VIS-2, and VIS-3</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. VIS-3 will contribute to achieving consistency during long-term project construction.</p>
Utilities Element (City of Huntington Beach 2010b)		

⁵ A “node” is defined as a significant focal point, such as a street intersection that acts as a center of movement and activity. The City identifies primary and secondary entry nodes; Magnolia Street and Newland Street are designated as primary and secondary entry nodes, respectively, where they intersect with the PCH.

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
<p>Goal U 5. Maintain and expand service provision to City residences and businesses. Policy U 5.1.4. Require the review and or expansions of existing utility facilities to ensure that such facilities will not visually impair the City's coastal corridors and entry nodes.</p>	<p>Consistent, with implementation of VIS-1, VIS-2, and VIS-3</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. VIS-3 will contribute to achieving consistency during long-term project construction.</p>
<p>Environmental Resources / Conservation Element (City of Huntington Beach 2004)</p>		
<p>Goal ERC 4. Maintain the visual quality of the City's natural environment. Objective ERC 4.1 and Policy 4.1.5. Enhance and preserve the City's aesthetic resources, including natural areas, beaches, bluffs, and significant public views.</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Goal ERC 5 – Conserve the natural environment and resources of the community for the long-term benefit and enjoyment of its residents and visitors. Policy ERC 5.2.3. Require that energy saving designs and materials be incorporated into the construction of all public buildings, and encourage their use City-wide.</p>	<p>Consistent, with implementation of VIS-5 and VIS-6</p>	<p>VIS-5 and VIS-6 require new lighting fixtures to achieve high energy efficiency for the HBEP. VIS-5 and VIS-6 require the direct involvement of a certified lighting professional trained to integrate efficient technologies and designs into lighting systems.</p>
<p>Coastal Element (City of Huntington Beach 2011)</p>		
<p>Goal C 4. Preserve, enhance, and restore the aesthetic resources of the coastal zone, including natural areas, beaches, bluffs, and significant public views. Objective C 4.1 and Policies 4.1.1 and 4.1.4. Scenic and visual qualities of the coastal area shall be considered and protected as resources of public importance. Development shall be sited and designed to protect public views along the ocean and scenic coastal areas. Preserve nighttime views by minimizing lighting levels along the shoreline.</p>	<p>Consistent, with implementation of VIS-1, VIS-2, VIS-3, VIS-4, VIS-5, and VIS-6</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. VIS-3 will contribute to achieving consistency during long-term project construction. Staff recommends preparation and implementation of a Lighting Management Plan (VIS-5), which will be submitted to the Coastal Commission and the</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
<p>Objective C 4.2 and Policies 4.2.1, 4.2.2, and 4.2.3. Protect the Coastal Zone's visual resources through design review and development. Preserve public views to and from the bluffs, provide adequate landscaping, evaluate project design for visual impact and compatibility, and use landscaping to mask the electrical power plant on the PCH. Require massing, height, and orientation of new development to protect public coastal views. Promote preservation of significant public view corridors to the coastal corridor.</p> <p>Objective C 4.6 and Policy 4.6.3. Enhance visual resources of the Coastal Zone by implementing landscape standards. For new redevelopment, require the preservation of existing mature trees or replace trees at a minimum 2:1 ratio.</p> <p>Objective C 4.7 and Policies 4.7.1, 4.7.2, 4.7.5, and 4.7.8. Improve the appearance of visually degraded areas in the Coastal Zone with landscaping to screen uses that detract from scenic quality, locating utilities underground when possible, reviewing new or expanded utility facilities to avoid visual impairment of coastal corridors and entry nodes, and requiring landscaping and architectural buffers and screens around utilities.</p>		<p>City for review and comment. VIS-4 requires project lighting during demolition, construction, and commissioning to minimize potential night lighting impacts. VIS-6 requires a full review of the approved Lighting Management Plan prior to commercial operation of Power Block 2.</p>
<p>Goal C 8. Accommodate energy facilities and promote beneficial effects while mitigating potentially adverse impacts.</p> <p>Objective C 8.4 and Policy 8.4.2. Encourage the owners of the electrical power plant on the PCH to buffer and screen the power plant from the PCH and Beach Boulevard with landscaping and other means. Require any power plant expansion or alteration proposals to include adequate buffering and screening measures.</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Huntington Beach Zoning & Subdivision Ordinance</p>		
<p>Title 21 – Base Districts</p>		
<p>Ch. 214, PS Public-Semipublic District; § 214.08 Development Standards. (N) Maximum allowable height of structures in the Coastal Zone shall be reduced to be compatible with the established physical scale of the area and to enhance public visual resources.</p>	<p>Consistent, with implementation of VIS-1</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures consistent with the requirements of VIS-1. The plan will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
		The consistency determination is also based on the City's approval of Resolution No. 2014-18 (TN #202084) supporting the applicant's conceptual architectural improvements as modified and the approximately 125-foot-high structures for the project.
Title 22 – Overlay Districts		
<p>Ch. 221, Coastal Zone Overlay District; § 221.10 Requirements for New Development Adjacent to Resource Protection Area. Development adjacent to any wetland or land zoned Coastal Conservation requires a landscape plan that prohibits planting of invasive plants, encourages low water use, and uses plants that are native to coastal Orange County. Reduce impacts of walls or barriers adjacent to conservation areas by using open fencing/wall designs, landscape screening, or other features. Walls and fences shall use designs to prevent bird strike hazards (e.g., wood, wrought iron, partially-frosted glass).</p>	Consistent, with implementation of VIS-2	Preparation and implementation of a Perimeter Screening and On-site Landscape and Irrigation Plan consistent with the requirements of VIS-2 . The plan will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. VIS-2 requires the project owner to request comments on proposed plant species from the Huntington Beach Wetlands Conservancy.
<p>Ch. 221, Coastal Zone Overlay District; § 221.14 Preservation of Visual Resources. Applicants proposing new development shall provide the Director with an evaluation of the project's visual impact. Preservation of public views is required, including views to and from the bluffs, to the shoreline and ocean, and to the wetlands. Preservation of existing mature trees is required to the maximum extent feasible.</p>	<p>Consistency with the requirement to evaluate the visual effects of the proposed project is achieved with preparation of this analysis.</p> <p>Consistency with the requirement to preserve visual resources is achieved with implementation of VIS-1 and VIS-2.</p>	Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.
<p>Ch. 221, Coastal Zone Overlay District; § 221.28 Maximum Height. All rooftop mechanical devices, except for solar panels, shall be set back and screened so that they are not visible.</p>	Consistent, with implementation of VIS-1	Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures consistent with the requirements of VIS-1 . The plan will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. The consistency determination is also based on the City's approved Resolution No. 2014-18 (TN #202084) supporting the applicant's conceptual architectural improvements as modified and the

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
		approximately 125-foot-high structures for the project.
Title 23 – Provisions Applying in All or Several Districts		
<p>Ch. 230, Site Standards; § 230.76 Screening of Mechanical Equipment. Exterior mechanical equipment shall be screened from view on all sides. Screening of the top of equipment may be required by the Director, if necessary to protect views from an R or OS district. A mechanical equipment plan shall be submitted to the Director to ensure that the mechanical equipment is not visible from a street or adjoining lot.</p>	<p>Consistent, with implementation of VIS-1</p>	<p>The “Huntington By-The-Sea Mobile Estates and RV Park” on Newland Street adjacent to the HBEP site is in an “R” district; the zoning district is RMP – Residential Manufactured Home Park.</p> <p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures consistent with the requirements of VIS-1. The plan will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval. The consistency determination is also based on the City’s approved Resolution No. 2014-18 (TN #202084) supporting the applicant’s conceptual architectural improvements as modified and the approximately 125-foot-high structures for the project.</p>
<p>Ch. 231, Off-Street Parking and Loading Provisions; § 231.18 Design Standards. Parking area lighting shall be energy efficient and designed to prevent glare on adjacent residences. Security lighting shall be provided in public areas and shall be on a time clock or photo sensor system.</p>	<p>Consistent, with implementation of VIS-4, VIS-5, and VIS-6</p>	<p>Preparation and implementation of a Lighting Management Plan (VIS-5), which will be submitted to the Coastal Commission and the City for review and comment. VIS-4 requires project lighting during demolition, construction, and commissioning to minimize potential night lighting impacts. VIS-6 requires a full review of the approved Lighting Management Plan prior to commercial operation of Power Block 2. VIS-5 and VIS-6 require new lighting fixtures to achieve high energy efficiency for the HBEP.</p>
<p>Ch. 232, Landscape Improvements; § 232.02 Applicability. Minimum required site landscaping and planting areas shall be installed and maintained in accord with the standards and requirements of this chapter, including all nonresidential projects.</p>	<p>Consistent, with implementation of VIS-2</p>	<p>Preparation and implementation of a Perimeter Screening and On-site Landscape and Irrigation Plant consistent with the requirements of VIS-2. The plan will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Ch. 232, Landscape Improvements. Section 232.04 General Requirements. Landscape plans prepared by a California State Licensed Landscape Architect shall be submitted</p>	<p>Consistent, with implementation of VIS-2</p>	<p>Preparation and implementation of a Perimeter Screening and On-site Landscape and Irrigation Plant consistent with the requirements of VIS-2. The plan will be submitted to the Coastal</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
<p>for approval to the Public Works and Community Development Departments. Significant changes to approved plans require written approval by city staff and/or officials and the landscape designer. Compliance with the Arboricultural and Landscape Standards and Specifications on file in the Public Works Department is required.</p> <p>Section 232.06 Materials. Plans shall be harmonious with the architecture and show a recognizable pattern or theme for the overall development. Plants shall be selected for drought tolerance and adaptability to the Huntington Beach environment. Irrigation systems must follow the water efficient landscape requirements of Chapter 14.52 and the Arboricultural Standards and Specifications on file in the Department of Public Works.</p> <p>Section 232.08 Design Standards. A minimum of 8 percent of the total net site areas shall be landscaped, or as required by Title 21 or conditions of approval.</p> <p>Section 232.10 Irrigation. All landscaped areas shall have a permanent underground, automated irrigation system to promote healthy plant life.</p>		<p>Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>
Title 24 – Administration		
<p>Ch. 244, Design Review.</p> <p>Section 244.02 Applicability. Design review is required for all projects pursuant to any other provision of this Zoning and Subdivision Ordinance and for all projects located within redevelopment areas, specific plans as applicable, areas designated by the City Council, City facilities or projects abutting or adjoining city facilities, projects in or abutting or adjoining OS-PR and OS-S districts, and General Plan primary and secondary entry nodes.</p> <p>Section 244.06 Scope of Review. Specifies that the Board shall consider the arrangement and relationship of proposed structures to one another and to other development in the area. Requires the Board to assess the compatibility in scale and aesthetic treatment of the structures with public district areas. The adequacy of proposed landscaping shall be assessed. The Board shall</p>	<p>Consistent, with implementation of VIS-1 and VIS-2</p>	<p>Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1) and a Perimeter Screening and On-site Landscape and Irrigation Plan (VIS-2). Both plans will be submitted to the Coastal Commission and the City, and timely comments from those agencies will be considered by the Energy Commission CPM prior to plan approval.</p>

**Visual Resources Table 3
Proposed Project Consistency with Applicable Visual Resources LORS**

LORS Summary Description	Consistency Determination	Basis for Determination
<p>assess whether energy conservation measures have been proposed and the adequacy of such measures.</p> <p>Section 244.08 Required Plans and Materials. Plans and materials to fully describe and explain the proposed development shall be submitted as required by the application form or by the Director, as deemed necessary.</p>		

Based on the foregoing, we conclude that the HBEP will be consistent will all LORS relating to visual resources.

PUBLIC COMMENT

At the July 21, 2014, several members of the public discussed the improved visuals to the area based on the construction and operation of the HBEP, including Travis Allen, Assemblymember from the 77th District; Don Hansen, former Huntington Beach city councilmember; Barbara Delgleize; and John Bailey. (07/21/14 RT 210:15-214:9; 214:23-215:4; 253:6-255:12.)

FINDINGS OF FACT

1. The Huntington Beach Energy Project, a natural gas-fired, combined-cycle, electrical generating facility, will be located within the Huntington Beach Generating Station, in the city of Huntington Beach, California, near the Huntington Beach State Beach, the Magnolia Marsh, and other natural features.
2. For the purposes of the Commission’s visual analysis pursuant to CEQA and the Warren-Alquist Act, the baseline against which project impacts are evaluated is the existing viewscape, including the existing HBGS power plant, which is the most visually prominent built feature in the project area.
3. The evidence contains an evaluation of seven key observation points (KOPs) and the project’s potential to have light or glare impacts. Based on this evaluation, we find that impacts to visual resources, as mitigated, will be less than significant .
4. The proposed project site’s viewshed is within several scenic vistas and scenic resources.
5. Conditions of Certification set forth in this Decision will ensure that the project’s impacts to visual resources will be reduced to below the level of significance.

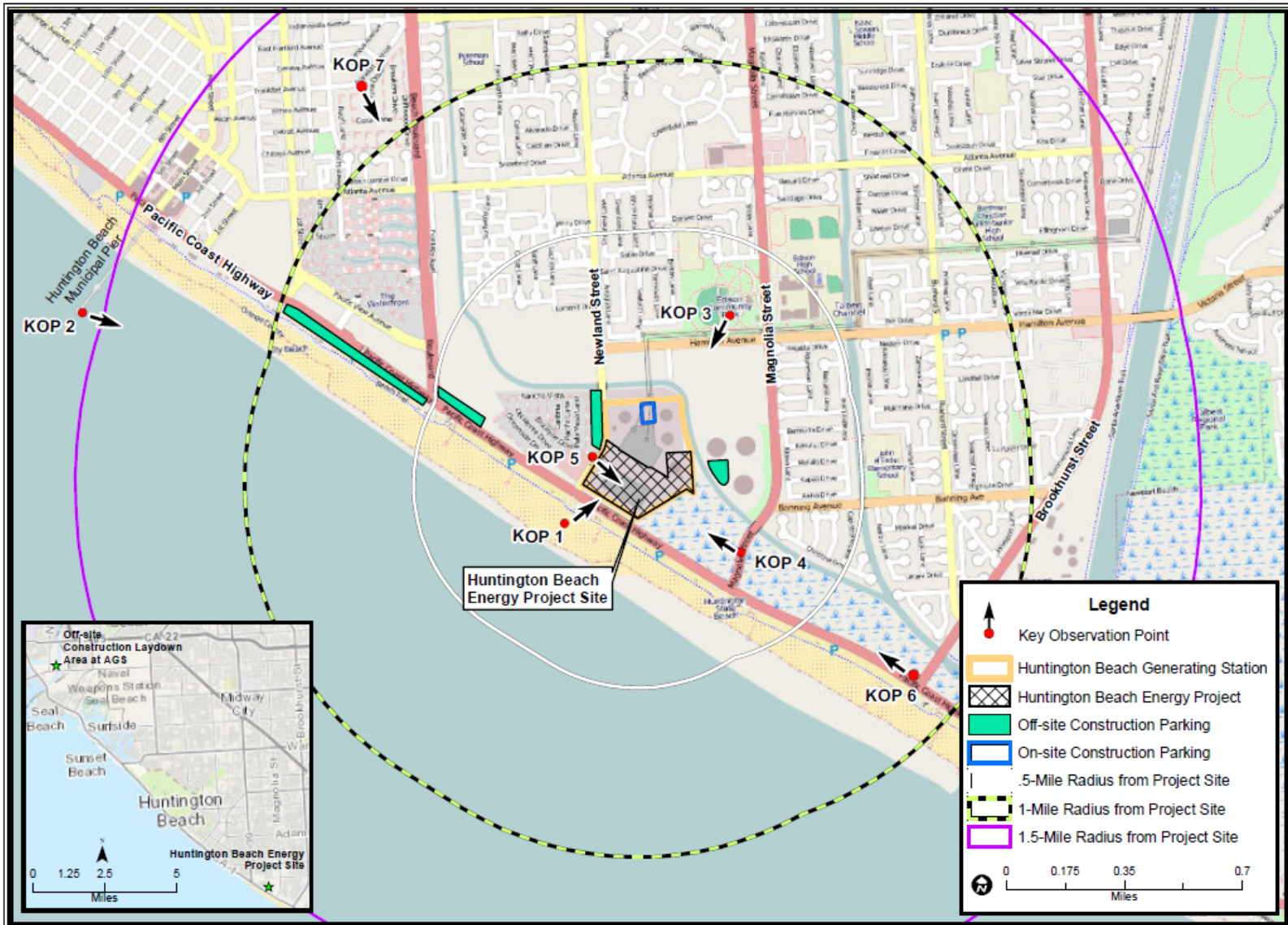
6. Visible vapor plumes are unlikely to occur and are therefore insignificant.
7. Construction of the project (facility and transmission lines) and laydown and parking areas will result in temporary visual disturbance but no long-term visual impacts.
8. The project will have lighting for construction and operation of the facility and has the potential to introduce glare. Conditions of Certification **VIS-4**, **VIS-5**, and **VIS-6** have been adopted to reduce lighting impacts to surrounding uses during construction and operation of the project. Condition of Certification **VIS-3** has been adopted to reduce glare and minimize the visual intrusion of the project.
9. There are no potential cumulative visual impacts caused by the HBEP.
10. Implementation of the Conditions of Certification will ensure that the project's visual impacts are less than significant.
11. The HBEP will be consistent with all applicable visual laws, ordinances, regulations, and standards relating to visual resources identified in this Decision.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification, the project will meet all applicable LORS relating to visual resources which are contained in this Decision.
2. Construction and operation of the Huntington Beach Energy Project will not cause any unmitigatable significant direct, indirect, or cumulative visual impacts.

VISUAL RESOURCES – FIGURE 1

Project Site and Key Observation Points



Source: Ex. 2000, Visual Resources Figure 2

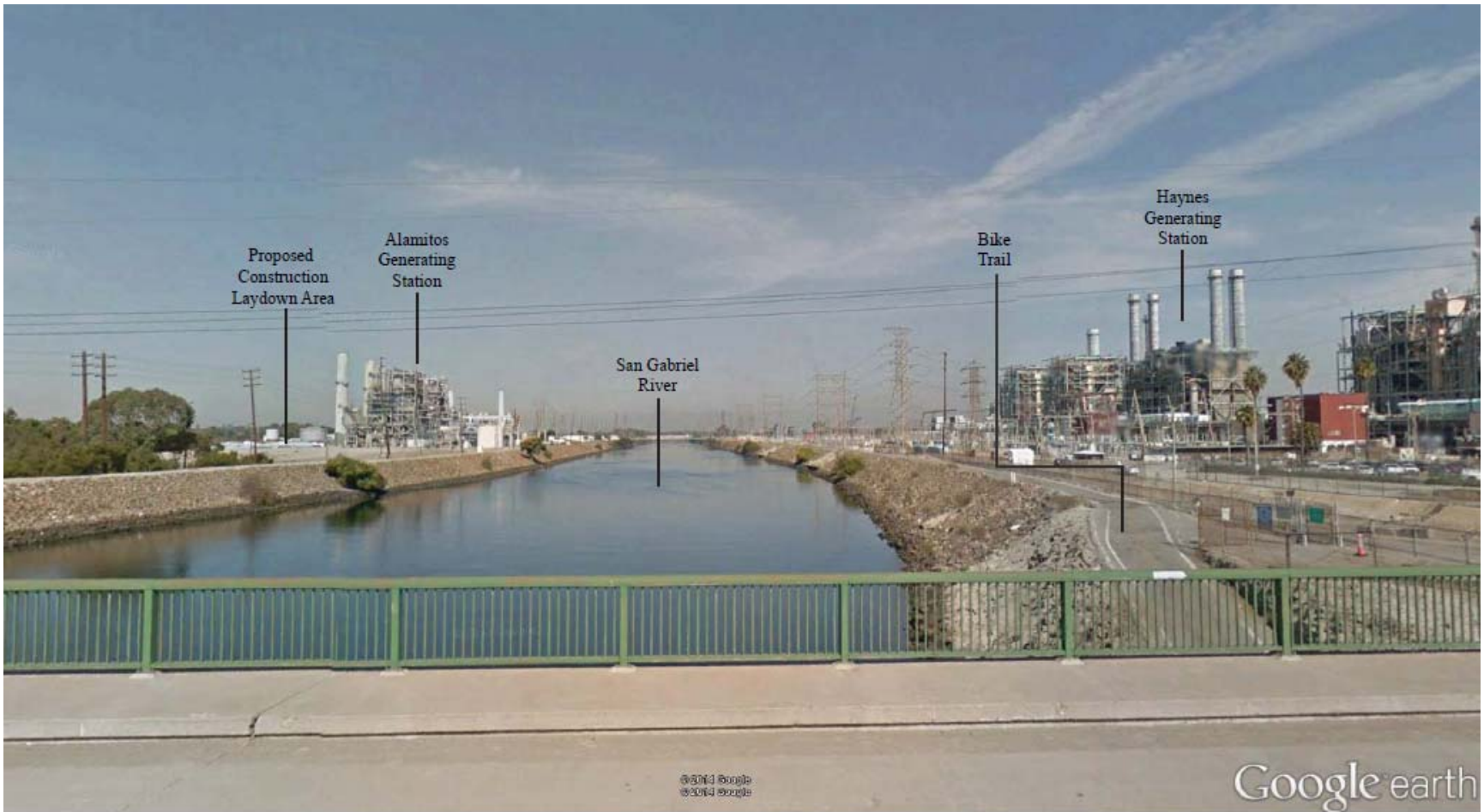
VISUAL RESOURCES – FIGURE 2 Project Construction Parking Areas



Source: Ex. 2000, Visual Resources Figure 19

VISUAL RESOURCES – FIGURE 3

View Toward Proposed Off-site Construction Laydown Area from Westbound Westminster Boulevard



Source: Ex. 2000, Visual Resources Figure 20

VISUAL RESOURCES – FIGURE 4a
KOP 1 - Existing View from Huntington State Beach



Source: Ex. 2000, Visual Resources Figure 3a

VISUAL RESOURCES – FIGURE 4b
KOP 1 – Simulated View from Huntington State Beach



View depicts HBEP 5 years after completion of development.

Source: Ex. 2000, Visual Resources Figure 3b

VISUAL RESOURCES – FIGURE 4c
KOP 1 – City of Huntington Beach Recommended Architectural Improvements



Source: Ex. 2000, Visual Resources Figure 16

VISUAL RESOURCES – FIGURE 5a
KOP 2 – Existing View from Huntington Beach Municipal Pier



Source: Ex. 2000, Visual Resources Figure 6a

VISUAL RESOURCES – FIGURE 5b
KOP 2 – Simulated View from Huntington Beach Municipal Pier



Source: Ex. 2000, Visual Resources Figure 6b

VISUAL RESOURCES – FIGURE 6a
KOP 3 – Existing View from Edison Community Park



Source: Ex. 2000, Visual Resources Figure 8a

VISUAL RESOURCES – FIGURE 6b
KOP 3 – Simulated View from Edison Community Park



Source: Ex. 2000, Visual Resources Figure 8b

VISUAL RESOURCES – FIGURE 7
Edison Community Park, Characteristic View in the Park



Source: Ex. 2000, Visual Resources Figure 9

VISUAL RESOURCES – FIGURE 8a
KOP 4 - Existing View from Magnolia Street near Pacific Coast Highway



Source: Ex. 2000, Visual Resources Figure 10a

VISUAL RESOURCES – FIGURE 8b
KOP 4 - Simulated View from Magnolia Street near Pacific Coast Highway



View depicts HBEP 5 years after completion of development.
Source: Ex. 2000, Visual Resources Figure 10b

VISUAL RESOURCES – FIGURE 9
Brookhurst Marsh and the Huntington Beach Channel, Characteristic View from Magnolia Street



Source: Ex. 2000, Visual Resources Figure 11

VISUAL RESOURCES – FIGURE 10
KOP 4 – City of Huntington Beach Recommended Architectural Improvements



Source: Ex. 2000, Visual Resources Figure 17

VISUAL RESOURCES – FIGURE 11a
KOP 5 - Existing View from Driveway Entrance to the Huntington-By-The-Sea Mobile Estates and RV Park



Note:

A print copy with an image width of about 18 1/2 inches and held at a reading distance of approximately 12 inches would approximately represent life-size scale.

Source: Ex. 2000, Visual Resources Figure 12a

VISUAL RESOURCES – FIGURE 11b

KOP 5 - Simulated View from Driveway Entrance to the Huntington-By-The-Sea Mobile Estates and RV Park



Note:

A print copy with an image width of about 18 1/2 inches and held at a reading distance of approximately 12 inches would approximately represent life-size scale.

Source: Ex. 2000, Visual Resources Figure 12b

VISUAL RESOURCES – FIGURE 12
KOP 5 – City of Huntington Beach Recommended Architectural Improvements



Note:

A print copy with an image width of about 18 1/2 inches and held at a reading distance of approximately 12 inches would approximately represent life-size scale.

Source: Ex. 2000, Visual Resources Figure 18

VISUAL RESOURCES – FIGURE 13a
KOP 6 - Existing View from Pacific Coast Highway near Brookhurst Street



Source: Ex. 2000, Visual Resources Figure 14a

VISUAL RESOURCES – FIGURE 13b
KOP 6 - Simulated View from Pacific Coast Highway near Brookhurst Street



Source: Ex. 2000, Visual Resources Figure 14b

VISUAL RESOURCES – FIGURE 14a
KOP 7 - Existing View from Southern Bluff of the Huntington Beach Mesa



Source: Ex. 2000, Visual Resources Figure 15a

VISUAL RESOURCES – FIGURE 14b
KOP 7 - Simulated View from Southern Bluff of the Huntington Beach Mesa



Source: Ex. 2000, Visual Resources Figure 15b

VII. COMPLIANCE CONDITIONS AND COMPLIANCE MONITORING PLAN

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the HBEP 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. (Ex. 2000, pp. 7-3 – 7-5.)

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. (Ex. 2000, p. 7-1.)

The Compliance Plan is composed of two broad elements. The first element establishes the "General Conditions" that set forth:

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

(Ex. 2000, pp. 7-3 – 7-7.)

The second general element of the Plan contains the specific "Conditions of Certification". These are found following the summary and discussion of each individual topic area in this Decision. The individual Conditions contain the measures required to

mitigate potentially adverse Project impacts associated with construction, operation, and closure to levels of insignificance. Each Condition also includes a verification provision describing the method of assuring that the Condition has been satisfied. (Ex. 2000, pp. 7-7 – 7-8.)

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

CALIFORNIA COASTAL COMMISSION COMMENTS

The Coastal Commission submitted a report dated July 14, 2014, entitled, “ Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **Land Use** section of this Decision.

The July 14 Report includes extensive comments on potential impacts on environmentally sensitive habitats from groundwater, including construction dewatering. The Coastal Commission recommends that the Conditions of Certification require AES to conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown expected from that dewatering. If the investigation shows potential drawdown effects to nearby environmentally sensitive habitats or wetland areas, project owner would then be required to identify and implement methods to avoid those effects. The methods to mitigate the potential effects of dewatering include installing sheet piles, slurry walls, or other similar barriers or conducting alternative dewatering methods that would avoid drawing down groundwater in these sensitive areas. The Coastal Commission also recommends that these structural mitigation methods be included on any relevant final design plans required pursuant to this Decision. (Ex. 4026, pp 13 – 14.)

We agree that these modifications to Condition of Certification **GEN-2** are appropriate and should be included in similar Conditions of Certification, such as **SOIL&WATER-1**, **SOIL&WATER-3**, **SOIL&WATER-4**, and **BIO-7**. With the imposition and implementation of these Conditions of Certification, we have provided additional feasible mitigation measures to avoid potential adverse dewatering impacts to adjacent habitat areas.

PUBLIC COMMENT

There were no public comments on Compliance and Closure.

FINDINGS OF FACT

The record establishes:

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

2. We adopt the following Compliance Plan as part of this Decision.

CONCLUSIONS OF LAW

1. The compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532.
2. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the HBEP will be designed, constructed, operated, and closed in conformity with applicable law.

VIII. PROJECT ALTERNATIVES

INTRODUCTION

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 that achieve the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts. Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e); see *also*, tit. 20, § 1765.)

Public Resources Code section 25540.6(b) requires an Applicant for a power plant such as the HBEP, 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. (Cal. Code Regs., tit. 14, § 15126.6 and 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 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.*)

PROJECT DESCRIPTION AND SETTING

For general project description, including location of the facility and the equipment to be installed, please see the "Project Description and Purpose" section of this Decision (Section II, above).

The project has been designed to start and stop very quickly and be able to quickly ramp up and down through a wide range of generating capacity. As more renewable electrical resources are brought on line as a result of electric utilities meeting California's Renewable Portfolio Standard (RPS), projects strategically located within load centers and designed for fast starts and ramp-up and down capability, such as HBEP, will be critical in supporting local electrical reliability and grid stability.(Ex. 1001, §6.1.)

The California Independent System Operator (CAISO) has identified a need for new power generation facilities in the Western Los Angeles Basin Local Reliability Area to replace the ocean water once-through-cooling (OTC) plants that are expected to retire as a result of the California State Water Resources Control Board's (SWRCB) *Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant*

Cooling (OTC Policy). CPUC Decisions D.13-02-015 and D.14-03-004¹ authorize procurement for local capacity requirements (LCR) and replacement of capacity at the San Onofre Nuclear Generating Station at a maximum of 2500 MW. Natural gas fired capacity is authorized at a minimum of 1000 MW and a maximum of 1500 MW. CAISO has also stated that between 2,424 and 3,834 MW of new generation is required in the Los Angeles Basin due to planned OTC retirements consistent with the OTC Policy. HBEP was designed to address the LCR within the Los Angeles Basin, under either the CPUC or CAISO policy. (Ex. 1001, §6.1; Ex. 2000, p. 4.1-103.)

Locating the project on an existing power plant site avoids the need to construct new linear facilities, including gas and water supply lines, discharge lines, and transmission interconnections. This reduces potential offsite environmental impacts, and the cost of construction. (Ex. 1001, §6.1.)

Project Objectives

The objectives for the HBEP are identified below.

- Provide efficient, reliable and predictable power supply by using combined-cycle, natural gas-fired combustion turbines to replace the OTC generation;
- Support the LCR of Southern California's Western Los Angeles Basin;
- Develop a 939 MW power generation plant that provides efficient operational flexibility with rapid-start and fast ramping capability to allow for efficient integration of renewable energy sources in the California electrical grid;
- Reuse existing electrical, water, wastewater, and natural gas infrastructures and land to minimize terrestrial resource and environmental justice impacts by developing on an existing brown field site;
- Site the project to serve the load area without constructing new transmission facilities; and
- Site the project on property that has industrial land use designation with consistent zoning.

(Ex. 2000, p. 6.3.)

¹ We take judicial notice of these Decisions of the CPUC. (Cal. Code Regs., tit. 20, §1213; Evid. Code §§ 450, 451, 452.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

CEQA requires that we provide a reasonable range of alternatives that could feasibly accomplish most of the basic project objectives while avoiding or substantially lessening one or more of the significant effects. We must discuss those alternatives that were considered but rejected as infeasible, including the reasons those alternatives were eliminated from detailed analysis.(CEQA Guidelines, tit. 14, §15126, subd. (c).)

Alternative Site Evaluation

Public Resources Code section 25540.6, subdivision (b), reads, in part:

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

As discussed above, this project is to be sited on the existing location of the Huntington Beach Generating Station (HBGS). HBGS began operating in 1958 when it was owned by Southern California Edison (SCE), using fuel oil to produce electricity. In 1995, SCE retired generating Units 3 and 4 due to their limited use. (Ex. 2000, pp. 6.6-6.7.)

AES Southland Development, LLC, (AES), the Applicant, acquired the HBGS from SCE in 1998. In 2001, AES filed an Application for Certification with the Energy Commission to rebuild and upgrade (i.e., retool) Units 3 and 4 to meet increased electrical demand in California. The HBGS retool project for Units 3 and 4 was approved by the Energy Commission in 2001, and the total electrical generation capacity of the project was subsequently increased to 1,103 megawatts (MW). Units 1 through 5 were operational until October 2002. At that time, an order from South Coast Air Quality Management District resulted in the permanent removal of Unit 5 (a combustion turbine unit) from operation, and all permits for that unit were surrendered. (Ex. 2000, p. 6.7.)

The evidence thus establishes a firm connection between the proposed project and the existing HBGS.

In addition, the record establishes that the location of the HBEP cannot vary substantially from the HBGS site. As discussed above, HBGS had closed down 3 of its 5 generating units by 2012. However, in 2012, when it was determined that the San Onofre Nuclear Generating Station (SONGS) would be unavailable in the summer of 2013, synchronous condensers were added to the HBGS in order to provide voltage support to southern Orange County and San Diego. (Ex. 2000, p. 3-3.)

Any alternative site would require conversion of some other area of similar acreage to a new electrical power generation facility. AES owns and has full access to the HBGS site. No other site is identified where the project applicant could reasonably acquire site access to allow the timely completion of necessary environmental reviews, permitting, and approvals. The extent to which development of a different site could meet the project objectives is unknown, and it is questionable whether any off-site alternative would allow the project to remain a viable proposal given the likely extreme project schedule delay that would accompany a change of project site. (Ex. 2000, pp. 6.9-6.10.)

We therefore find, consistent with section 25540.6, that alternative site evaluation was not required for the HBEP.

Alternative Site Configurations

Early comments on the AFC and draft analysis of the HBEP focused on the potential to reconfigure the project elements on the site to avoid or lessen noise, visual, and coastal impacts. (Ex. 2000, p. 6.10.) We shall discuss each potential impact in turn.

Noise

In the **NOISE AND VIBRATION** section of this Decision (*supra*, §VI (D)), we found that there no unmitigated significant construction or operational noise impacts to adjacent receptors (including both residential and biological resources). With implementation of proposed noise Conditions of Certification related to construction noise of the HBEP, we have determined the HBEP would be in compliance with all applicable noise performance standards and thresholds and result in less than significant impacts. Even if the HBEP on-site facilities were configured differently, similar construction noise impacts would occur because identical construction would happen, only at slightly different locations within the HBEP site boundary. Furthermore, construction staging and delivery of equipment would be similar or identical to the HBEP.

With respect to operational noise, as required by Condition of Certification **NOISE-4**, when the project becomes operational, a noise survey would be conducted to ensure that the project would not exceed applicable city of Huntington Beach noise limits. Any site reconfiguration would require an identical measure. Therefore, we conclude that reconfiguring the site layout would not significantly lessen or avoid any operational noise impacts.

Visual Resources

Because of the visual prominence of the air cooled condensers, on-site buildings containing turbines and other components for each power block, an alternative that would involve reconfiguring the site was considered as a means to lessen the visual impacts of the HBEP. The proposed HBEP facilities would occupy a large percentage of

the total site area, which would likely limit options to reconfigure the site. Given the high visibility of the project site overall, moving the visually prominent structures within the site would not reduce their visibility from sensitive viewpoints to any great extent. Thus, we find that reconfiguring the site layout would not significantly lessen or avoid visual impacts

Coastal Resources

The Coastal Commission submitted a report dated July 14, 2014, entitled, “ Coastal Commission’s 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC” (July 2014 Report). (Ex. 4026.) For the Commission’s detailed analysis of the July 2014 Report, please see the **Land Use** section of this Decision.

In each section of this Decision, we have reviewed the potential impacts of the HBEP with the provisions of the California Coastal Act and the July 2014 Report. Based on the location of the HBEP near the coastline, any potentially feasible alternative site configuration would need to lessen impacts on important coastal resources and sensitive viewer groups and uses. The primary impacts on these coastal resources are described in the **LAND USE, NOISE AND VIBRATION** and **VISUAL RESOURCES** sections of this Decision and, to a lesser extent, in the **SOIL AND WATER RESOURCES, PROJECT DESCRIPTION, GEOLOGICAL AND PALEONTOLOGICAL RESOURCES,** and **TRAFFIC AND TRANSPORTATION** sections. In each section the impacts identified in the July 2014 Report would not be significantly lessened or avoided by reconfiguration of the project site.

An alternative configuration would likely still meet the project objectives identified above. Accordingly, we conclude that an alternative site configuration would not avoid or substantially lessen project impacts identified as significant.

Generation Technology Alternatives

Technology alternatives to the HBEP are primarily focused on reducing air quality impacts of the HBEP. We use nomenclature and terminology specific to air quality.² Eligible technologies include combined-cycle technology, other advanced gas turbine(s), or a renewable energy resource. These technologies are measured against the project objective of reusing the existing natural gas pipeline; they must also meet the requirements of Rule 1304 of the South Coast Air Quality Management District (SCAQMD). (Ex. 2000, p. 6-11.)

² For a full description of these terms and issues, please refer to the **AIR QUALITY** section of this Decision (*supra*, §IV(B)).

Conventional Boiler and Steam Turbine.

This technology burns fuel in a conventional boiler to create steam, which is used to drive a steam turbine generator and then is condensed and returned to the boiler. This technology would not qualify for the SCAQMD Rule 1304 exemption for offsets. (Ex. 2000, pp. 6-11 – 6-12.)

Simple-Cycle Combustion Turbine.

A simple-cycle combustion turbine has a quick startup and rapid ramping capabilities appropriate for a peaking facility. The proposed HBEP would have two blocks each consisting of three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbine generators (CTG), coupled with one steam turbine, and an air cooled condenser in a combined cycle configuration. Instead, the HBEP site could also be configured to contain 9 LMS100 simple-cycle combustion turbines producing about 956 MW, which is similar to CPV Sentinel, an 850-megawatt (MW) peaking facility recently approved by the Commission. Each turbine would have an exhaust stack 13.5 feet in diameter and 90 feet tall. Auxiliary equipment may include a spray mist fogging system for cooling the inlet combustion air; a turbine intercooler; nine single-cell cooling towers, each with circulating water pumps. The size of each cooling tower can be 40 feet high, 42 feet wide and 42 feet long. While feasible and able to achieve most of the HBEP objectives, this alternative was eliminated from detailed consideration as it would not reduce or avoid any HBEP impacts, as discussed below.

- *Air Quality:* Compared to a combined-cycle facility such as the proposed HBEP, simple-cycle turbines can achieve similar thermal efficiency. For example, the CPV Sentinel project has a net heat rate of 8,468 Btu/kWh under normal operation conditions with a full load efficiency of approximately 42 percent while the operating range of HBEP is estimated to be 8,800 to 8,140 Btu/kWh with efficiencies ranging from 38.8 percent to 41.9 percent. Although the permitted emission limits of specific projects may be different due to different BACT requirements, the criteria pollution emissions of simple-cycle and combined-cycle projects at this efficiency range are similar. In addition, the emissions of both combined-cycle and simple-cycle facilities would be offset and therefore have no adverse air quality impacts. In addition, an advanced simple-cycle combustion turbine, such as a LMS100, would also qualify for the ERC and offset exemption allowed in SCAQMD Rule 1304.(Ex. 2000, p. 6-12.)
- *Biological Resources:* Construction impacts to biological resources would likely be similar to HBEP. The primary significant impacts associated with operation of the proposed HBEP would be noise impacts to sensitive adjacent wildlife and habitats, avian collisions and electrocution, and degradation of adjacent habitats from storm

water runoff. All of these impacts can be reduced to a less-than-significant level through implementation of the Conditions of Certification. Impacts from storm water runoff would likely be comparable to the HBEP. This alternative is not expected to avoid any of the proposed project's impacts to biological resources, and even if some impacts are decreased in magnitude, the Conditions of Certification would likely still be required to reduce impacts to less than significant. (Ex. 2000, p. 6.-12.)

- *Land Use:* The simple-cycle combustion turbine scenario would be similar to the proposed HBEP in that both scenarios would replace the existing Huntington Beach Generation Station (HBGS), requiring the issuance of a conditional use permit and a coastal development permit by the city of Huntington Beach, but for the Energy Commission's exclusive authority to license the project. The simple-cycle combustion turbine scenario would differ compared to the proposed HBEP by not requiring the approval of a variance because the equipment would exceed the maximum height limit of under the Huntington Beach Zoning Code. Compliance with all other development standards of the PS district appears to be achievable with this alternative. (Ex. 2000, pp. 6-12 -6 -13.)
- *Noise:* Construction of an industrial facility such as a power plant usually creates temporary or short-term noise impacts. Construction of the proposed combined cycle HBEP, however, would extend beyond what's considered "temporary," but the impacts would be less than significant with the implementation of the staff-proposed noise conditions of certification related to construction (see **NOISE AND VIBRATION** section in this document). The construction period for the simple cycle configuration would be similar to the proposed HBEP since the phased demolition and construction phases of the existing units would still be needed in order to provide voltage support. Also, construction equipment would be similar. Thus, the noise impacts would be similar.(Ex. 2000, p. 6-13.)

Operation of an industrial facility such as a power plant can create permanent or long-term noise impacts. Although different generating equipment would be employed for the simple cycle units, modern power plant equipment, whether for a simple cycle or a combined cycle plant, are acoustically designed per the manufacturer to meet local and state noise standards. Therefore, although the equipment would be different, the overall noise impacts at the projects nearest noise-sensitive receptors, approximately 1,000 feet away, would be similar. .(Ex. 2000, p. 6-13.)

With implementation of the Conditions of Certification in the **NOISE AND VIBRATION** section of this Decision, the simple cycle alternative would likely create a less-than-significant impact at adjacent noise-sensitive receptors.

- *Visual Resources:* To evaluate the comparative impacts on visual resources for this alternative, the evidence includes a review of the visual analysis in the December 2010 Commission Decision on the CPV Sentinel Energy Project in Riverside County (07-AFC-3), which uses the same technology as the Simple-Cycle Combustion Turbine Alternative being evaluated as an alternative to the proposed HBEP. For the Sentinel Energy Project, the power block structures are configured in a string of eight parallel units across the plant site. (Ex. 2000, pp. 6-13 – 6-14.)

Similar to the Sentinel Energy Project, this alternative would include the following visually prominent structures:

- A total of nine natural gas-fired simple-cycle combustion turbine generators (CTGs), each measuring approximately 130 feet long, 90 feet wide, and 40 feet high.
- Each of the nine CTGs would include an exhaust stack measuring approximately 13.5 feet in diameter and 90 feet high.
- Each of the nine CTGs would include a single-cell cooling tower measuring approximately 42 feet long, 42 feet wide, and 41 feet high.
- A raw water storage tank measuring approximately 110 feet in diameter and 64 feet high.
- A total of two treated water storage tanks measuring 70 feet in diameter and 36 feet high.
- Several steel monopole transmission structures measuring 85–115 feet tall.

(Ex. 2000, p. 6-14.)

By comparison, the proposed HBEP would involve construction of two power blocks, each with three HRSGs and stacks that would be 92 feet tall and 120 feet tall, respectively. The two ACC units would measure approximately 209 feet long, 127 feet wide, and 104 feet high. Other major structures would range from approximately 25 to 40 feet high. The steel monopole transmission structures would be similar to those constructed at the Sentinel Energy Project site. (Ex. 2000, p. 6-14.)

The two power blocks for the proposed HBEP would group the tallest structures at the project site in two areas at opposite sides of the site. The major project structures for the Simple-Cycle Combustion Turbine Alternative would likely be arranged in a way that could increase the visual breadth of the project compared to the proposed HBEP. The visual effect of this alternative compared to the proposed project could be somewhat greater due to the probable increased clutter and

density of power plant structures across the site. However, the reduced vertical profile of this alternative compared to the HBEP (90-foot-tall stacks compared to 120-foot-tall stacks) could improve the effectiveness of measures to restore and enhance visual quality in the Coastal Zone, in accordance with the applicable provisions of the California Coastal Act, but without a site arrangement plan or preliminary concept for screening this alternative, it is unknown how visual screening measures would compare in their potential to reduce impacts. (Ex. 2000, p. 6-14.)

The potential exists for visible plumes to form over the nine cooling towers. Given the coastal location of the Huntington Beach power plant, it is assumed that plume abated cooling towers would be required for this alternative. Visible plume abatement could be achieved with a wet/dry tower to mix unsaturated hot air with saturated hot air to create an unsaturated exhaust. Wet/dry cooling towers would significantly lower the potential for visible plume formation, but depending on the design and ambient conditions at the site, visible plumes could still form above the cooling towers. Implementation of mitigation measures could be required to reduce the potential size and frequency of visible plume formation to less than significant. (Ex. 2000, pp. 6-14 – 6-15.)

We thus identified potentially significant impacts constructing and operating the proposed HBEP that also apply to the Simple-Cycle Combustion Turbine Alternative.

Therefore, the overall impacts on visual resources under this alternative would be similar to HBEP.

Alternate Equipment

In the **POWER PLANT EFFICIENCY** section of this Decision (*supra*, §III(B), we discussed alternative equipment to that proposed by Applicant. We rejected alternative equipment as meeting fewer of the project's objectives.

Renewable Resources

In the **POWER PLANT EFFICIENCY** section of this Decision (*supra*, §III(B), we compared various alternative technologies with the proposed HBEP and found them to be infeasible.

Recycled Water Alternative

In the **SOIL AND WATER RESOURCES** section of this Decision (*supra*, §V(B), we discussed use of recycled water as an alternative to the cooling demand of the HBEP,

as well as its availability to replace OTC for HBGS. We found recycled water to be infeasible for either purpose.

ALTERNATIVES EVALUATED IN FULL DETAIL

Based on the analysis provided above, the only alternative analyzed in depth is the “No Project” alternative.

The CEQA Guidelines state that “the purpose of describing and analyzing a ‘no project’ alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” (CEQA Guidelines, tit. 14, § 15126.6, subd. (i).) Toward that end, the “no project” analysis considers “existing conditions” and “what would be reasonably expected to occur in the foreseeable future if the project were not approved...” (CEQA Guidelines, tit. 14, § 15126.6, subd. (e)(2).)

The No-Project Alternative for the HBEP is not a traditional “no build” alternative, which is often the case under CEQA. The evidence shows that it is unlikely that the HBGS would be permanently retired, due to the fact that continued electrical generation from the HBGS would be required (absent the HBEP) to ensure grid stability and serve electricity demand. Units 1 and 2 at HBGS could operate until 2020, then be retired unless a replacement for OTC was found. The synchronous condensers at Units 3 and 4 would continue to operate under the must-run contract with CAISO. (07/21/14 RT 207:25-209:22.)

Thus, the “no project alternative” for HBEP consists of two options:

1. Retrofit HBGS Units 1 and 2 to become air cooled via use of air cooled condensers. After such a retrofit, HBGS Units 1 and 2 would operate similar to the proposed HBEP technology, but would only provide two power blocks that would produce roughly one-half the energy that would be generated by the HBEP.
2. Keep HBGS Units 1 and 2 as wet cooled, but retrofit the power blocks for use of another cooling water source (other than ocean water). Under this retrofit scenario, the HBGS would continue operation as a wet cooled facility.

(Ex. 2000, p. 6-21.)

Retrofit Air Cooled Condenser Scenario:

This scenario would continue operation of HBGS Units 1 and 2 (430MW) as steam boilers and Units 3 and 4 as synchronized condensers, with the requirement that HBGS Units 1 and 2 be retrofitted with an air-cooled condenser. The retrofit activities would involve reconfiguring the existing plant and installing air-cooling infrastructure similar to

that of the HBEP, but at HBGS Units 1 and 2 only. The evidence shows that Energy Commission engineering staff estimate the retrofit air cooled condenser used with HBGS Units 1 and 2 would be about 43 percent larger than what is proposed for HBEP, but could fit where the HBEP generating block 1 is being proposed . (Ex. 2000, pp. 6-21 – 6-22.)

The HBEP, the existing HBGS, and the No-Project Alternative wet cooled scenario would be more efficient than this Air Cooled Condenser alternative for the following reasons:

- Retrofitting the existing boilers for air-cooling is not as efficient as the proposed HBEP system; and
- Wet cooling is inherently more efficient than dry cooling.

(Ex. 2000, p. 6-22.)

The evidence shows that Air Cooled Condenser scenario would meet the HBEP objectives of locating the facility on land properly zoned for power plant use and of reusing existing infrastructure, including transmission facilities. This scenario would partially meet the project objectives of providing support for LCR, but only at 436 MW instead of 939 MW. The Air Cooled Condenser scenario would not meet the project objectives of providing 939 MW or power with rapid-start and fast ramping capability for better integration with renewables..(Ex. 2000, pp. 6-24 – 6-26.)

In looking at the environmental impacts of the Air Cooled Condenser scenario, air quality impacts would be greater with the HBEP because it would likely have more generators operating more hours in any given day/week/year. However, emissions from both scenarios would be mitigated to a level of less than significant.(Ex. 2000, p. 6-26.)

Biological resources would be similarly impacted because the same site is being utilized under this scenario. (Ex. 2000, p. 6-27.)

Cultural resources would be less impacted by the Air Cooled Condenser scenario because construction would be concentrated on machinery already built. (Ex. 2000, pp. 6-27 – 6-2.)

This facility can also be designed and constructed such that geologic hazards are not a concern similar to HBEP. Paleontological resources may be encountered in excavations that exceed 11 feet, but impacts can be mitigated similar to the HBEP.(Ex. 2000, p. 6-29.)

The Air Cooled Condenser scenario would present a nearly identical hazardous materials risk profile as the HBEP. Both would use natural gas as fuel, use ammonia for selective-catalytic reduction of oxides of nitrogen in combustion exhaust, and have a

closed-loop cooling water circuit with its associated water quality maintenance chemicals. Impacts from this No-Project Alternative scenario would be similar to those of the proposed HBEP.(Ex. 2000, p. 6-30.)

This retrofit scenario would differ compared to the proposed HBEP by continuing the use of the existing HBGS Units 1-4 with 200-foot tall stacks rather than demolishing them to construct the HBEP Blocks 1 and 2 with 120-foot tall stacks, and by installing a 104-foot tall air cooled condenser that would be the same height as the air cooled condenser proposed for HBEP. The air cooled condenser would be a new structure, which would exceed the maximum allowable height limit of the PS zone. Similar to the HBEP, this alternative would require the approval of a height variance. Compliance with all other development standards of the PS district appears to be achievable with this alternative. Impacts from this No-Project Alternative scenario would be similar to the proposed HBEP.(Ex. 2000, p. 6-30.)

Construction and operation of the industrial facility in this location would create noise impacts. However, the construction period would be shorter than other HBEP, thus making its impacts less intense. From an operational standpoint, however, the impacts would be greater because the Air Cooled Condenser scenario would continue the use of less modern turbines and other machinery, such as the boilers. However, both the HBEP and the Air Cooled Condenser scenario would require mitigation and the resultant impacts from either project would be less than significant. (Ex. 2000, p. 6-31.)

The Air Cooled Condenser scenario overall would have less construction activities when compared to HBEP. Therefore, construction-related diesel particulate matter (DPM) emissions and public health impacts of this retrofit air cooled condenser scenario would be less than the DPM and public health impacts of the proposed HBEP.(Ex. 2000, p. 6-32.)

Even though the generating station under this retrofit scenario would operate less efficiently than the proposed HBEP, the capacity of the proposed HBEP (939MW) is more than double that of this retrofit scenario (430MW). The evidence shows that the toxic air emissions from project operation under this retrofit scenario would be less than the proposed HBEP because significantly less electricity would be generated under the retrofit scenario. Therefore, during operation, the public health impacts under the retrofit scenario would be less than the proposed HBEP. (Ex. 2000, p. 6-32.)

The Air Cooled Condenser scenario would employ a smaller sized construction workforce and have a shorter construction period than the HBEP. We found, in the **SOCIOECONOMICS** section of this Decision (*supra*, § VI(C)), that there would be no impacts associated with population growth and the need for new housing under the HBEP. This alternative would not be subject to development impact fees (Chapter 17 of

the Huntington Beach Municipal Code- Police Facilities and Parkland Acquisition and Park Facilities Development Impact Fees), unlike the HBEP, as this alternative does not propose new buildings. Also, as no demolition and construction activities would occur at the HBGS, development impact fees are not applicable. Retrofitting activities would generate benefits such as increased property taxes, construction and operation employment income, and increased state and local sales taxes and fees. The economic benefits would thus be similar to those for the HBEP. (Ex. 2000, pp. 6-32 – 6-33.)

Soil and water resources would be similar to the HBEP under the Air Cooled Condenser scenario because both rely on dry cooling methods, eliminating the need for OTC. Water demands for both would also be similar(Ex. 2000, p. 6-33.)

Impacts to traffic and transportation would be reduced under the Air Cooled Condenser scenario because of the shorter construction period and need for a smaller workforce. (Ex. 2000, p. 6-34.)

The electric field levels would be the same under either the HBEP or the Air Cooled Condenser scenario. However, the magnetic field (which depends on the amount of generated power) would be much less for the retrofitted, lower-capacity HBGS. Since HBEP operation would increase total power generation, it would increase the resulting magnetic field when compared to levels resulting from this retrofitted, lower-capacity HBGS.(Ex. 2000, p. 6-34.)

The visual impacts from this retrofit scenario are similar to the HBEP (Ex. 2000, pp. 6-35 – 6-37.)

There is no non-hazardous or hazardous demolition waste associated with the Air Cooled Condenser scenario. Thus, this No-Project Alternative scenario would have slightly less impact when compared to the HBEP.(Ex. 2000, pp. 6-39 – 6-40.)

As compliance with LORS related to worker safety/fire protection at the proposed project would have no significant impacts off-site, there would be no significant impact on the public resulting from the proposed project. This scenario would also comply with LORS and have no significant impacts off-site.(Ex. 2000, p. 6-40.)

In sum, the Air Cooled Condenser scenario, a subset of the “no project alternative” would have similar or slightly fewer impacts to various resources. It is thus the “environmentally superior alternative”.

The CEQA Guidelines require that if the environmentally superior alternative is the No-Project Alternative, “the EIR shall also identify an environmentally superior alternative among the other alternatives.” (CEQA Guidelines., tit. 14, §15126.6, subd.(e)(2).) Because the Air Cooled Condenser scenario does not meet the project objectives,

particularly of supplying efficient, reliable and flexible generation, we find the HBEP to be the environmentally superior alternative.

Retrofit Wet Cooling Scenario

This scenario would continue operation of HBGS Units 1 and 2 (430MW) as steam boilers and Units 3 and 4 as synchronized condensers, with the requirement that HBGS Units 1 and 2 utilize a non-ocean water source for cooling. In analyzing this scenario, we did not analyze the continued use of ocean water because it would not be a long-term solution to providing the voltage support necessary (Ex. 2000, p. 6-22.)

We do, however, consider the use of recycled water as a cooling source. The evidence shows that use of treated effluent for once-through cooling may be feasible, given the volumes necessary for that use.(08/06/14 RT .43:22-44:5; Ex. 2000, pp. 6-22 – 6-24).Even under this scenario, however, there are still constraints on the quality of water available, as discussed in the **SOIL AND WATER RESOURCES** section of this Decision (*supra*, §V(B)).

Moreover, the Wet Cooling scenario would add a recycled water pipeline along an off-site route, which would not be required for the HBEP as proposed. While no specific alignment is identified, the evidence shows that the construction of a pipeline could increase potential impacts to biological resources, cultural resources, geological and paleontological resources, land use, and traffic and transportation, as we discuss more fully below. (Ex. 2000, p. 6-28.)

In addition, any reclaimed water would require treatment, which would entail the construction of a treatment facility on-site. (08/06/14 RT 49:23-51:2; Ex. 2000, p. 6-24.)

To utilize wet cooling technology for HBGS Units 1 and 2, a wet cooling tower would be required at HBGS. An initial estimate indicates the wet cooling tower would have approximate dimensions of 60 feet wide by 650 feet long (approximately 38,880 square feet) and 50 feet high. Given the coastal location of HBGS, it is assumed a plume-abated cooling tower would also be required. The only available location for these cooling towers is within the central portion of the HBGS site, southeast of the on-site SCE switchyard. Construction of the wet cooling towers at this location would result in the demolition of various support building and facilities.(Ex. 2000, p. 6-24.)

Under this retrofit scenario (i.e., wet cooling), the evidence shows it would operate less efficiently than the proposed HBEP and the No-Project Alternative Air Cooled Condenser scenario, and similar to the existing HBGS. .(Ex. 2000, p. 6-24.)

The evidence shows that Wet Cooling scenario would meet two of the HBEP objectives: of locating the facility on land properly zoned for power plant use and of reusing existing transmission facilities. This scenario would partially meet the project objectives of

providing support for LCR, but only at 436 MW instead of 939 MW. The Wet Cooling scenario would also require the construction of a new pipeline for the transmission of treated effluent to be treated for use as cooling water; thus, it would not fully meet the project objective of reusing existing infrastructure. The Wet Cooled Condenser scenario would not meet the project objectives of providing 939 MW or power with rapid-start and fast ramping capability for better integration with renewable.(Ex. 2000, pp. 6-24 – 6-26.)

In looking at the environmental impacts of the Wet Cooling scenario, air quality impacts would be greater with the HBEP because it would likely have more generators operating more hours in any given day/week/year. However, emissions from both scenarios would be mitigated to a level of less than significant.(Ex. 2000, p. 6-27.)

Biological resources would be greater because of the need for a pipeline to convey treated effluent to the plant, which may impinge on environmentally sensitive habitats we have identified in this Decision. The Wet Cooling scenario would be similar to the HBEP and would not cause noise impacts to special-status species, as we found in the **BIOLOGICAL RESOURCES** section of this Decision (*supra*, § V(A)). (Ex. 2000, p. 6-27.)

Impacts on cultural resources would be greater under the Wet Cooling scenario than the HBEP because of the need to construct a pipeline. (Ex. 2000, p. 6-28 – 6-29.)

This facility can also be designed and constructed such that geologic hazards are not a concern, similar to HBEP. Paleontological resources may be encountered in excavations that exceed 11 feet, but impacts can be mitigated similar to the HBEP.(Ex. 2000, p. 6-29.)

The Wet Cooling scenario would present a nearly identical hazardous materials risk profile as the HBEP. Both would use natural gas as fuel, use ammonia for selective-catalytic reduction of oxides of nitrogen in combustion exhaust, and have a closed-loop cooling water circuit with its associated water quality maintenance chemicals. Impacts from this No-Project Alternative scenario would be similar to those of the proposed HBEP.(Ex. 2000, p. 6-30.)

This retrofit scenario would differ compared to the proposed HBEP by continuing the use of the existing HBGS Units 1-4 with 200-foot tall stacks rather than demolishing them to construct the HBEP Blocks 1 and 2 with 120-foot tall stacks, and by installing a 104-foot tall air cooled condenser that would be the same height as the air cooled condenser proposed for HBEP. The air cooled condenser would be a new structure, which would exceed the maximum allowable height limit of the PS zone. Unlike the HBEP, this alternative would not require the approval of a height variance. Compliance with all other development standards of the PS district appears to be achievable with

this alternative. Impacts from this No-Project Alternative scenario would be similar to the proposed HBEP.(Ex. 2000, pp. 6-30 – 6-31.)

Construction and operation of the industrial facility in this location would create noise impacts. However, the construction period would be shorter than other HBEP, thus making its impacts less intense. From an operational standpoint, however, the impacts would be greater because the Air Cooled Condenser scenario would continue the use of less modern turbines and other machinery, such as the boilers. However, both the HBEP and the Wet Cooling scenario would require mitigation and the resultant impacts from either project would be less than significant. (Ex. 2000, p. 6-31.)

The Wet Cooling scenario overall would have less construction activities when compared to HBEP. Therefore, construction-related diesel particulate matter (DPM) emissions and public health impacts of this retrofit air cooled condenser scenario would be less than the DPM and public health impacts of the proposed HBEP. Under this wet cooling scenario, one concern during project operation would be that the potential exists for bacterial growth (i.e., Legionella) to occur in the cooling system and emissions of toxic air contaminants from cooling tower mist or drift. This public health impact would need to be mitigated to less than significant by applying appropriate conditions of certification. (Ex. 2000, p. 6-32.)

Even though the generating station under this retrofit scenario would operate less efficiently than the proposed HBEP, the capacity of the proposed HBEP (939MW) is more than double that of this retrofit scenario (430MW). The evidence shows that the toxic air emissions from project operation under this retrofit scenario would be less than the proposed HBEP because significantly less electricity would be generated under the retrofit scenario. Therefore, during operation, the public health impacts under the retrofit scenario would be less than the proposed HBEP. (Ex. 2000, p. 6-32.)

The Wet Cooling scenario would employ a smaller sized construction workforce and have a shorter construction period than the HBEP. We found, in the **SOCIOECONOMICS** section of this Decision (*supra*, § VI(C)), that there would be no impacts associated with population growth and the need for new housing under the HBEP. This alternative would not be subject to development impact fees (Chapter 17 of the Huntington Beach Municipal Code- Police Facilities and Parkland Acquisition and Park Facilities Development Impact Fees), unlike the HBEP, as this alternative does not propose new buildings. Also, as no demolition and construction activities would occur at the HBGS, development impact fees are not applicable. Retrofitting activities would generate benefits such as increased property taxes, construction and operation employment income, and increased state and local sales taxes and fees. The economic benefits would thus be similar to those for the HBEP. (Ex. 2000, p. 6-33.)

This scenario would use non-potable water for the makeup cooling water source, requiring construction of a recycled water pipeline. This additional disturbance would result in an increase in soil and wind erosion and therefore a greater impact under this scenario. Construction of other project facilities under the Wet Cooling scenario, such as the treatment plant and cooling tower, would have similar impacts on soil and water resources as the HBEP. Non-potable water demands for both would also be similar. (Ex. 2000, pp. 6-33 – 6-34.)

Impacts to traffic and transportation would be greater under the Wet Cooling scenario because of the pipeline construction, resulting in dispersion of construction-related traffic impacts. Additional water treatment necessary would also likely increase operational traffic impacts. (Ex. 2000, p. 6-34.)

The electric field levels would be the same under either the HBEP or the Air Cooled Condenser scenario. However, the magnetic field (which depends on the amount of generated power) would be much less for the retrofitted, lower-capacity HBGS. Since HBEP operation would increase total power generation, it would increase the resulting magnetic field when compared to levels resulting from this retrofitted, lower-capacity HBGS. (Ex. 2000, pp. 6-34 – 6-35.)

The visual impacts from this retrofit scenario are similar to the HBEP (Ex. 2000, pp. 6-37 – 6-39.)

Due to the proposed location of the wet-cooling retrofit, removal of above-ground storage tanks located in the eastern portion of HBGS would not be required. Thus, this No-Project Alternative scenario would have at least the same impacts compared to the HBEP. (Ex. 2000, p. 6-40.)

As compliance with LORS related to worker safety/fire protection at the proposed project would have no significant impacts off-site, there would be no significant impact on the public resulting from the proposed project. This scenario would also comply with LORS and have no significant impacts off-site. (Ex. 2000, p. 6-40.)

In sum, the Wet Cooling scenario, a subset of the “no project alternative” would have similar or slightly fewer impacts to various resources. It is thus the “environmentally superior alternative”.

The CEQA Guidelines require that if the environmentally superior alternative is the No-Project Alternative, “the EIR shall also identify an environmentally superior alternative among the other alternatives.” (CEQA Guidelines., tit. 14, §15126.6, subd.(e)(2).) Because the Wet Cooling scenario would not meet the project objectives, particularly of supplying efficient, reliable and flexible generation, we find the HBEP to be the environmentally superior alternative.

Conservation and Demand-Side Management

One alternative way to meet California's electricity demand with new generation is to reduce the demand for electricity. Such "demand side" measures include programs that increase energy efficiency, reduce electricity use, or shift electricity use away from "peak" hours of demand.

In California there is a considerable array of demand-side programs. At the federal level, the Department of Energy has adopted national standards for appliance efficiency for most appliances and building standards to reduce the use of energy in federal buildings and at military bases.

At the state level, the Energy Commission has adopted comprehensive energy efficiency standards for buildings constructed since 1976, and appliance efficiency standards for specific devices not subject to federal appliance standards. These building and appliance standards are generally considered the most stringent in the nation. The Energy Commission also provides grants for energy efficiency research, development and demonstration through the Electric Program Investment Charge (EPIC) for electricity and the Public Interest Energy Research (PIER) program for natural gas programs.

The CPUC oversees investor-owned utility demand-side management programs, and many of the state's municipal utilities administer similar demand-side programs. These efforts are funded by the utilities' ratepayers and include a wide variety of initiatives aiming to move energy-efficient equipment and effective energy management practices into the marketplace at increasing scale. Many local governments have adopted building standards that exceed the state standards for building efficiency. A few jurisdictions have, by ordinance, set retrofit energy efficiency requirements for older buildings. New buildings may combine the need for heat and power utilizing a single fuel source, or may employ "district" solutions for heating and cooling a number of adjacent buildings, thereby increasing overall efficiency.

Even with this variety of federal, state, and local demand-side management programs, the state's electricity use is still increasing as a result of population growth and business expansion.

Demand Response (DR) programs may have some potential to manage load ramps such as those resulting from variable renewables, both through rapid load reductions and by absorbing renewable "over-generation." However, CA does not currently have the market structure or mechanisms to enable widespread use of DR for this purpose. Deployment of DR in the SONGS area will depend on the development of these mechanisms as well as the nature of customer loads served. The CPUC has begun a

rulemaking to develop a path forward for DR in the IOU territories. (CPUC Notice of Demand Response Rulemaking R.13-09-011, dated 9/25/2013.) At present, therefore, implementation of significant DR capability is not assured and as such cannot be considered a viable alternative for HBEP.

Current demand-side programs alone are not sufficient to satisfy future electricity needs, although much more aggressive demand-side programs could potentially accomplish this at the economic and population growth rates that are projected for the state. Therefore, although it is likely that federal, state, and local demand-side programs will receive even greater emphasis in the future, both new generation and new transmission facilities are likely to be needed in the immediate future and possibly beyond in order to maintain adequate supplies.

The Energy Commission has prepared a report that defines the roles that natural gas-fired plant fulfill in an evolving high-renewables, low-GHG system. These roles include:

1. Providing variable generation and grid operations support;
2. Meeting extreme load and system emergency requirements;
3. Meeting local capacity requirements; and,
4. Providing general energy support.

(Ex. 2000, p. 4.1-96.)

This need for gas-fired generation to reliably operate the system was reaffirmed in the CPUC decision authorizing Southern California Edison to procure new gas-fired generation in the Los Angeles Basin. (Ex. 2000, p. 4.1-96.)

In authorizing the utilities to procure sufficient new generation capacity on behalf of all service area customers to meet system and local reliability needs, the CPUC also assumes that these targets will be met. As such, the amount of new fossil capacity deemed necessary to retire the aging HBGS power plant assumes that SCE will satisfy requirements for the procuring energy efficiency and establishing demand-side management programs that are derived from state policy goals.

Therefore, while energy efficiency, demand response programs, renewable generation, and combined heat and power are preferred resources that are to be developed before natural gas-fired generation, they are not sufficient to meet the state's future energy demand and maintain the electric system's reliability. In addition, a significant share of the state's still-operating generation fleet is expected to shut down to comply with the OTC policy. Energy from natural gas-fired generation will be needed during a prolonged nuclear plant outage (or shut-down, as in the case of SONGS) or during dry years, in which hydroelectric production is reduced. (Ex. 2000, p. 4.1-98.)

FINDINGS OF FACT

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

1. The evidence establishes an acceptable analysis of a reasonable range of alternatives to the HBEP as proposed.
2. The evidentiary record contains an adequate review of alternative sites, technologies, conservation and demand-side management, and the “no project” alternative.
3. Alternative technologies accomplished fewer of the entire suite of project objectives.
4. No site alternative is capable of meeting the stated project objectives.
5. The “no project” alternative would not provide electrical system benefits, including support for the integration of renewable energy.
6. HBEP is environmentally preferable to other alternatives
7. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the HBEP will not create any significant direct, indirect, or cumulative adverse environmental.

CONCLUSION OF LAW

We conclude, therefore, that the evidence 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.

**HUNTINGTON BEACH ENERGY PROJECT
(12-AFC-02) CONDITIONS OF CERTIFICATON**

FACILITY DESIGN

GEN-1

The project owner shall design, construct, and inspect the project in accordance with this Decision and the 2013 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 the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All transmission facilities (lines, switchyards, switching stations and substations) are covered in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2013 CBSC is in effect, the 2013 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

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

VERIFICATION: Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the 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.

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 that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment, including the architectural visual enhancement specified in the **VISUAL RESOURCES** section. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the CBO. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

VERIFICATION: At least 60 days (or a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, and the master drawings and 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, systems, equipment, and the architectural enhancement features defined above in Condition of Certification **GEN-2**. Major structures and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

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GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2013 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.

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

GEN-4 Prior to the start of rough grading, the project owner shall assign a California- registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

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

The RE shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;

4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.
7. Include the results of any dewatering mitigation measures identified during the scope of the study conducted pursuant to Condition of Certification **GEO-1**.

The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

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

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

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

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

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GEN-5

Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

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

The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

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

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

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2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and
 3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.
- B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:
1. Review all the engineering geology reports;
 2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load;
 3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2013 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
 4. Recommend field changes to the civil engineer and RE.
 5. This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.
- C. The engineering geologist shall:

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1. Review all the engineering geology reports and prepare a final soils grading report; and
 2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2013 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).
- D. The design engineer shall:
1. Be directly responsible for the design of the proposed structures and equipment supports;
 2. Provide consultation to the RE during design and construction of the project;
 3. Monitor construction progress to ensure compliance with engineering LORS;
 4. Evaluate and recommend necessary changes in design; and
 5. Prepare and sign all major building plans, specifications, and calculations.
- E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in 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 time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer and engineering geologist assigned to the project.

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

The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within 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, including prefabricated assemblies, 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 2013 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

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

The special inspector shall:

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

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

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

If the special inspector is subsequently reassigned or replaced, the project owner has 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 required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.

VERIFICATION: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within 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. 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 the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

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

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A construction storm water pollution prevention plan (SWPPP);
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the 2013 CBC.

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

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen

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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.

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

CIVIL-3 The project owner shall perform inspections in accordance with the 2013 CBC. 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. 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.

VERIFICATION: Within 30 days (or project owner- and CBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were

completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. 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, the project owner shall submit plans, calculations and other supporting documentation to the CBO for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

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

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;
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;
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; and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

VERIFICATION: At least 60 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

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

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2013 CBC.

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. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

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

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2013 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

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

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2013 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 time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in the CBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

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

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- NACE R.P. 0169-83;
- NACE R.P. 0187-87;
- NFPA 56;
- 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
- City of Huntington Beach codes.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

VERIFICATION: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

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

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

The project owner shall:

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

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

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

MECH-3 The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or

refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

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

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

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 110 Volts or higher (see a representative list, below) the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. 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. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

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

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3. lightning protection system; and
 4. hazard area classification plan.
- B. Final plant calculations must establish:
1. short-circuit ratings of plant equipment;
 2. ampacity of feeder cables;
 3. voltage drop in feeder cables;
 4. system grounding requirements;
 5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
 6. system grounding requirements;
 7. lighting energy calculations; and
 8. 110 volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.
- C. The following activities shall be reported to the CPM in the monthly compliance report:
1. Receipt or delay of major electrical equipment;
 2. Testing or energization of major electrical equipment; and
 3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission decision.

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

CONDITIONS OF CERTIFICATION
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TRANSMISSION SYSTEM ENGINEERING

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: Prior to the start of construction of transmission facilities, 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 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

For the power plant switchyard, outlet line and termination, the project owner shall not begin any construction until plans for that increment of construction 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: 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 verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.

TSE-3 The project owner shall ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, and 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. Once approved, the project owner shall inform the CPM and CBO of any anticipated changes to the design, and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and CBO for review and approval.

- a) The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards.
- b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to 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 of the project.
- e) Termination facilities shall comply with applicable SCE interconnection standards.
- f) The project owner shall provide to the CPM:
 - i) Special Protection System (SPS) sequencing and timing if applicable,

- ii) A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable,
- iii) A copy of the executed LGIA signed by the California ISO and the project owner and approved by the Federal Energy Regulatory Commission.

VERIFICATION: Prior to the start of construction or start of modification of transmission facilities, the project owner shall submit to the CBO for approval:

- a) Design drawings, specifications, and calculations conforming with CPUC General Order 95 or 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, 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”¹ and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC), and related industry standards;
- c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements **TSE-3** a) through f);
- d) Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM.

¹ Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

- e) A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable,
- f) A copy of the executed LGIA signed by the CAISO and the project owner and approved by the Federal Energy Regulatory Commission.

Prior to the start of construction of or modification of transmission facilities, the project owner shall inform the CBO and the CPM of any anticipated changes to the design that are different from the design previously submitted and approved and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and CBO for review and approval.

TSE-4 The project owner shall provide the following Notice to the California Independent System Operator (CAISO) 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 CAISO 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 CAISO Outage Coordination Department.

VERIFICATION: The project owner shall provide copies of the CAISO letter to the CPM when it is sent to the CAISO one week prior to initial synchronization with the grid. The project owner shall contact the CAISO 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 CAISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-5 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in

writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

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

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

TRANSMISSION LINE SAFETY AND NUISANCE

TLSN-1 The project owner shall construct the proposed 230-kV transmission line according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and Southern California Edison's EMF reduction guidelines.

VERIFICATION: At least 30 days prior to start of construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall a qualified individual to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity at the edge of the right-of-way as reflected in the estimates provided by the applicant. The measurements shall be made before and after energization according to the of standard procedures measure the maximum strengths of the line electric and magnetic fields at the edge of the right-of-way to validate the estimates the applicant has provided for these fields. These measurements shall be made (a) according to the standard procedures of the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) and, (b) before and after energization. The measurements shall be completed no later than six months after the start of operations.

VERIFICATION: The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements. CPM shall determine the need for further mitigation from these field measurements that staff would assess the need for further mitigation.

TLSN-3 The project owner shall ensure that the route of the proposed transmission line is kept free of combustible material, as required under the provisions of GO-95 and California Code of Regulations, title 14, section 1250.

VERIFICATION: During the first five (5) years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the proposed route and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

TLSN-4 The project owner shall ensure that all permanent metallic objects within the proposed route are grounded according to industry standards.

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

AIR QUALITY

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 duration of project site 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 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 may be replaced only after compliance with the selection process outlined below. of the Compliance Project Manager (CPM).

VERIFICATION: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM delegates. The AQCMM and all delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP)

The project owner shall provide, for approval, an AQCMP that details the steps to be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5**.

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

AQ-SC3 Construction Fugitive Dust Control

Project owner shall implement the following control measures to mitigate for any increases in regional criteria pollutants during construction, including fugitive dust.

The AQCMM shall submit documentation to the CPM in each monthly compliance report (MCR) that demonstrates compliance with the Air

Quality Construction Mitigation Plan (AQCMP) mitigation measures for purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes from leaving the project's boundary. The following fugitive dust mitigation measures shall be included in the AQCMP required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

- a. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemical, replacement parts, etc.) will be paved prior to taking initial deliveries.
- b. All unpaved construction roads and unpaved operation site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project construction site shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.
- c. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

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- d. The construction site entrances shall be posted with visible speed limit signs.
- e. Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt prior to leaving the site.
- f. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- g. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- h. 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. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent, so long as this condition does not conflict with the requirements of the Storm Water Pollution Prevention Plan (SWPPP).
- j. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- k. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or run-off resulting from the construction site activities is visible on the public paved roadways. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
- l. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or treated with appropriate dust suppressant compounds.

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- m. When bulk materials are transported offsite, all materials that have the 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 two feet of freeboard.
- n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

VERIFICATION: The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

- A. a summary of all actions taken to maintain compliance with this condition; and
- B. Copies of any air quality-related complaints filed with the air district or facility representatives in relation to project construction; and
- C. Any other documentation deemed necessary by the CPM or 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 off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner indicates 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 activity. 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 AQCMM shall provide the CPM a Monthly Compliance Report to include:

- A. a summary of all actions taken to maintain compliance with this condition;
- B. copies of any air quality-related complaints filed with the district or facility representatives in relation to project construction; and
- C. 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, a table that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related combustion emissions. Any deviation from the AQCMP mitigation measures requires prior CPM notification and approval.

All off-road diesel construction equipment used in the construction of this facility shall be powered by the cleanest engines available that also comply with the California Air Resources Board's (ARB's) Regulation for In-Use Off-Road Diesel Fleets and shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**. The AQCMP

measures shall include the following, with the lowest-emitting engine chosen in each case, as available:

- a. All off-road vehicles with compression ignition engines shall comply with the California Air Resources Board's (ARB's) Regulation for In-Use Off-Road Diesel Fleets (California Code of Regulation Title 13, Article 4.8, Chapter 9, §2449 et. seq.).
- b. To meet the highest level of emissions reduction available for the engine family of the equipment, each piece of diesel-powered equipment shall be powered by a Tier 4 engine (without add-on controls) or Tier 4i engine (without ad-on controls), or a Tier 3 engine with a post-combustion retrofit device verified by the ARB or the US EPA. For PM, the retrofit device shall be a particulate filter if verified, or a flow-through filter, or at least an oxidation catalyst. For NOx, the device shall meet the latest Mark level verified to be available.
- c. For diesel powered equipment where the requirements of Part "b" cannot be met, the equipment shall be equipped with a Tier 3 engine without retrofit control devices or with a Tier 2 or lower Tier engine using retrofit controls verified by ARB or US EPA as the best available control device to reduce exhaust emissions of PM and nitrogen oxides (NOx) unless certified by engine manufacturers or the on-site AQCM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices can be considered "not practical" for the following, as well as other, reasons:
 1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
 2. The use of the retrofit device would unduly restrict the vision of the operator such that the vehicle would be unsafe to operate because the device would impair the operator's vision to the front, sides, or rear of the vehicle, or

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3. The construction equipment is intended to be on site for 10 work days or less.
- d. The CPM may grant relief from a requirement in Part “b” or “c” if the AQCMM can demonstrate a good faith effort to comply with the requirement and that compliance is not practical.
- e. The use of a retrofit control device may be terminated immediately provided that the CPM is informed within 10 working days of the termination and a replacement for the equipment item in question meeting the level of control required occurs within 10 work days of termination of the use (if the equipment would be needed to continue working at this site for more than 15 work days after the use of the retrofit control device is terminated) if one of the following conditions exists:
 1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in exhaust back pressure.
 2. The retrofit control device is causing or is reasonably expected to cause engine damage.
 3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.
- f. All equipment with engines meeting the requirements above shall be properly maintained and the engines tuned to the engine manufacturer’s specifications. Each engine shall be in its original configuration and the equipment or engine must be replaced if it exceeds the manufacturer’s approved oil consumption rate.
- g. Construction equipment will employ electric motors when feasible.
- h. If the requirements detailed above cannot be met, the AQCMM shall certify that a good faith effort was made to meet these

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requirements and this determination must be approved by the CPM.

- i. All off-road 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.

VERIFICATION: The AQCMM shall include in the MCR the following to demonstrate control of diesel construction-related emissions:

- A. A summary of all actions taken to control diesel construction related emissions;
- B. A list of all heavy equipment used on site during that month, showing the tier level of each engine and the basis for alternative compliance with this condition for each engine not meeting Part “b” or Part “c” requirements. The list shall include the owner of the equipment and a letter from each owner indicating that the equipment has been properly maintained; and
- C. 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 Construction Particulate Matter Mitigation Plan

During the construction phase of this project, the project owner shall conduct a local street sweeping program to provide at least 8.26 lbs/day PM10 and 0.79 lbs/day PM2.5 of emissions reductions. The project owner shall provide, for approval, a Construction_Particular Particulate Matter Mitigation Plan (CPMMP) that details the steps to be taken and the reporting requirements necessary to ensure the implementation of the local street sweeping program provide the equivalent of at least 8.26 lbs/day PM10 and 0.79 lbs/day PM2.5 of emissions reductions during the construction phase of the project. Construction emission reduction measures can include: localized street sweepers or programs; local ban of leaf blowing or blowers; sodding of local parks or playfields; fireplace or woodstove replacements; offsets or emission reduction credits; or other measures that can provide local emission reductions coincident with construction emissions.

VERIFICATION: At least 90 days prior to the start of any ground disturbance, the project owner shall submit the CPMMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of

receipt. The CPMMP must be approved by the CPM before the start of ground disturbance. During construction the project owner shall provide the records of the CPMMP in the Monthly Compliance Report.

AQ-SC7 Permit-to-Construct (PTC) and Permit-to-Operate (PTO)

The project owner shall provide the CPM copies of all district issued Permit-to-Construct (PTC) and Permit-to-Operate (PTO) documents for the facility. The project owner shall submit an amendment request 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 PTC, PTO, and proposed air permit modifications 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-SC8 Quarterly Operation Reports

The project owner shall submit to the CPM Quarterly Operation Reports, following the end of each calendar quarter, that include operational and emissions information as necessary to demonstrate compliance with the Conditions of Certification herein. The Quarterly Operation Report shall specifically note or highlight incidences of noncompliance.

VERIFICATION: The project owner shall submit the Quarterly Operation Reports to the CPM and APCO no later than 30 days following the end of each calendar quarter.

DISTRICT FINAL DETERMINATION OF COMPLIANCE CONDITIONS

The following SCAQMD conditions (**AQ-1** to **AQ-43**) apply to each unit of equipment and the proposed HBEP facility as a whole.

FACILITY

AQ-1 The project owner shall limit emissions from this facility as follows:

CONTAMINANT	EMISSIONS LIMIT
PM	Less than 100 TONS IN ANY ONE YEAR

For purposes of this condition, the PM shall be defined as particulate matter with aerodynamic diameter of 2.5 microns or less.

For purposes of demonstrating compliance with the 100 tons per year limit the project owner shall sum the PM2.5 emissions for each of the major sources at this facility by calculating a 12 month rolling average using the calendar monthly fuel use data and following emission factors for each turbine PM2.5 = 3.36 lbs/mmcf with no duct firing and PM2.5 = 5.22 lbs/mmcf with duct firing, for Boiler 1 PM2.5 = 1.86 lbs/mmscf, for Boiler 2 PM2.5 = 2.1 lbs/mmscf.

The project owner may apply to change the factors, via permit application, once a different value is demonstrated, subject to SCAQMD review of testing procedures and protocols.

The project owner shall submit written reports of the monthly PM2.5 compliance demonstrations required by this condition. The report submittal shall be included with the semiannual Title V report as required under Rule 3004(a)(4)(f). Records of the monthly PM2.5 compliance demonstrations shall be maintained on site for at least five years and made available upon SCAQMD request.

[Rule 1325, 40CFR 51, Appendix S]

VERIFICATION: The project owner shall submit to the CPM and the District the facility annual operating and emissions data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Report (**AQ-SC8**).

AQ-2 This facility is subject to the applicable requirements of the following rules or regulations:

The facility shall submit a detailed retirement plan for the permanent shutdown of Huntington Beach (HB) Boilers 1 and 2 and Redondo Beach (RB) Boilers 6 and 8 describing in detail the steps and schedule that will be taken to render the boilers permanently inoperable. The retirement plan shall be submitted to SCAQMD within 60 days after the Permits to Construct for gas turbine Units 1A, 1B, 1C, 2A, 2B, and 2C are issued.

The retirement plan must be approved in writing by SCAQMD. AES shall not commence any construction of HB Boilers 1 and 2 and RB Boilers 6

and 8 repowering project equipment including gas turbines 1A, 1B, 1C, 2A, 2B, 2C, steam turbines 1 and 2, SCR/CO catalysts for gas turbines 1A, 1B, 1C, 2A, 2B, and 2C, or the oil water separator, before the retirement plan is approved in writing by SCAQMD. If SCAQMD notifies AES that the plan is not approvable, AES shall submit a revised plan addressing SCAQMD's concerns within 30 days.

Within 30 calendar days of actual shutdown, or by no later than December 31, 2018, AES shall provide SCAQMD with a notarized statement that HB Beach Boilers 1 and 2 and RB Boilers 6 and 8 are permanently shut down and that any restart or operation of the units shall require new Permits to Construct and be subject to all requirements of non-attainment new source review and the prevention of significant deterioration program.

AES shall notify SCAQMD 30 days prior to the implementation of the approved retirement plan for permanent shutdown of HB Boilers 1 and 2 and RB Boilers 6 and 8, or advise SCAQMD as soon practicable should AES undertake permanent shutdown prior to December 31, 2018.

AES shall cease operation of RB Boilers 6 and 8 within 90 calendar days of the first fire of Units 1A, 1B, or 1C, and AES shall cease operation of HB Boilers 1 and 2 within 90 calendar days of the first fire of Units 2A, 2B, or 2C.

[Rule 1304 – Modeling and Offset Exemption]

VERIFICATION: The project owner shall submit the retirement plan and any modifications to the plan to the CPM within five working days of its submittal either by: 1) the project owner to district, or 2) receipt of proposed modifications from district. The project owner shall make site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-3 This facility is subject to the applicable requirements of the following rules or regulations:

For all circuit breakers at the facility utilizing SF₆, the project owner shall install, operate, and maintain enclosed-pressure SF₆ circuit breakers with a maximum annual leak rate of 0.5 percent by weight. The circuit breakers shall be equipped with a 10 percent by weight leak detection system. The leak detection system shall be calibrated in accordance with

manufacturer's specifications. The manufacturer's specifications and all records of calibrations shall be maintained on site.

The total CO₂e emissions from all circuit breakers shall not exceed 6.8 tons per calendar year.

[Rule 1714]

VERIFICATION: The project owner shall make site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

EACH GAS TURBINE

AQ-4 The project owner shall limit emission from this equipment as follows:

CONTAMINANT	EMISSION LIMIT
PM10	4,278.0 LBS IN ANY ONE MONTH
CO	12,776.2 LBS IN ANY ONE MONTH
VOC	7,487.2 LBS IN ANY ONE MONTH

The above limits apply after the equipment is commissioned. The above limits apply to each turbine.

The project owner shall calculate compliance with the emission limit(s) by using fuel use data and the following emission factors: VOC: 2.94 lbs/mmcf, PM10: 3.36 lbs/mmcf with no duct burner firing, 5.22 lbs/mmcf with duct burner firing.

The project owner may apply to change the factors, via permit application, once a different value is demonstrated, subject to SCAQMD review of testing procedures and protocols.

The project owner shall calculate compliance with the emission limits for CO after the CO CEMS certification based upon readings from the SCAQMD certified CEMS.

The project owner shall limit the annual firing hours for each turbine to 6370 hours including no more than 470 hours with duct firing (this does not include start up and shutdown hours)

[Rule 1303 – Offsets]

VERIFICATION: The project owner shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-5 The project owner shall limit emission from this equipment as follows:

CONTAMINANT	EMISSION LIMIT
PM10	2,930 LBS IN ANY ONE MONTH
CO	112,882 LBS IN ANY ONE MONTH
VOC	14,121 LBS IN ANY ONE MONTH

The above limits apply during commissioning. The above limits apply to each turbine.

The project owner shall calculate compliance with the emission limit(s) by using fuel use data and the following emission factors: VOC: 21.74 lbs/mmcf, PM10: 4.51 lbs/mmcf, and CO: 173.80 lbs/mmcf.

VERIFICATION: The project owner shall provide emissions summary data in compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-6 The 12.75 LBS/MMCF NOx emission limits shall only apply during turbine operation prior to CEMS certification for reporting NOx emissions.

[Rule 2012]

VERIFICATION: The project owner shall demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-7 The 2.0 PPMV NOX emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry. This limit shall not apply during commissioning, turbine start ups and turbine shutdowns.

[Rule 1703-PSD, Rule 2005]

VERIFICATION: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

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AQ-8 The 2.0 PPMV CO emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry. This limit shall not apply during commissioning, turbine start ups and turbine shutdowns.

[Rule 1703-PSD]

VERIFICATION: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-9 The 2.0 PPMV VOC emission limit(s) is averaged over 60 minutes at 15 percent O₂, dry. This limit shall not apply during commissioning, turbine start ups and turbine shutdowns.

[Rule 1303(a) – BACT, Rule 1303(b)(1) – Modeling, Rule 1303(b)(2) - Offsets]

VERIFICATION: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-10 The 1100 lbs/net MWH CO₂ limit is averaged over 12 rolling months. This limit only applies if the capacity factor of the unit exceeds 60% on an annual basis.

VERIFICATION: The project owner shall demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-SC8). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-11 For the purpose of determining compliance with District Rule 475, combustion contaminants emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[Rule 475]

VERIFICATION: The project owner shall demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-12 The project owner shall not use natural gas containing the following specified compounds:

Compound	Grains per 100 scf
H ₂ S	Greater than 0.25

This concentration limit is an annual average based on monthly sample of natural gas composition or gas supplier documentation. Gaseous fuel samples shall be tested using District Method 307-91 for total sulfur calculated as H₂S.

[Rule 1303(b) – Offset]

VERIFICATION: The project owner shall submit fuel usage records and calculations required to demonstrate compliance with this condition as part of the Quarterly Operational Reports (**AQ-SC8**).

AQ-13 The project owner shall limit the number of startups to no more than 90 in any one calendar month.

The number of cold start ups shall not exceed 5 per month, the number of warm start ups shall not exceed 25 per month, and the number of hot start ups shall not exceed 60 per month.

For the purposes of this condition:

A cold start up is defined as a startup which occurs after the steam turbine has been shut down for 49 hours or more. A cold start up shall not exceed 90 minutes. Emissions from a cold start up shall not exceed the following: NO_x - 29 lbs., CO – 116 lbs., VOC – 28 lbs.

A warm start up is defined as a startup which occurs after the steam turbine has been shut down for 9 – 49 hours. A warm start up shall not exceed 32.5 minutes. Emissions from a warm start up shall not exceed the following: NO_x - 17 lbs., CO – 46 lbs., VOC – 21 lbs.

A hot start up is defined as a startup which occurs after the steam turbine has been shut down for less than 9 hours. A hot start up shall not exceed 32.5 minutes. Emissions from a hot start up shall not exceed the following: NO_x - 17 lbs., CO – 34 lbs., VOC – 21 lbs.

CONDITIONS OF CERTIFICATION
APPENDIX "A"

The beginning of a start up occurs at initial fire in the combustor and the end of startup occurs when the BACT levels are achieved. If during start up the process is aborted the process will count as one start up.

The project owner shall maintain records, in a manner approved by the SCAQMD to demonstrate compliance with this condition.

[Rule 2005]

VERIFICATION: The project owner shall provide a table demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-14 The project owner shall limit the number of shutdowns to no more than 90 in any one calendar month.

Shutdown time shall not exceed 10 minutes per shutdown. Emissions from a shutdown shall not exceed the following: NO_x - 9 lbs., CO – 46 lbs., VOC – 31 lbs.

The project owner shall maintain records, in a manner approved by the SCAQMD to demonstrate compliance with this condition.

[Rule 2005]

VERIFICATION: The project owner shall provide a table demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-15 The project owner shall limit the power output of the plant to no more than 939 MWs. The 939 MW limit is based on the net power output.

The net electrical output shall be measured at the breaker of the transmission system interconnection point in the generation switchyard. The monitoring equipment shall meet ANSI Standard No. C12 or equivalent, and have an accuracy of +/-0.2 percent.

The net electrical output from each meter shall be recorded at the CEMS data acquisition system.

The project owner shall maintain records, for a minimum of five years, in a manner approved by the SCAQMD to demonstrate compliance with this condition.

[Rule 1304 - Modeling and Offset Exemption]

VERIFICATION: The project owner shall report the maximum net megawatts generated monthly to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-16 The project owner shall limit the power output of the plant to no more than 972 MW gross.

The 972 MW limit is based on the gross power output.

The gross electrical output shall be measured at the each of the 8 generators.

The monitoring equipment shall meet ANSI Standard No. C12 or equivalent, and have an accuracy of +/-0.2 percent.

The gross electrical output from generators shall be recorded at the CEMS data acquisition system.

The project owner shall maintain records, for a minimum of five years, in a manner approved by the SCAQMD to demonstrate compliance with this condition.

[Rule 1304 - Modeling and Offset Exemption]

VERIFICATION: The project owner shall report the maximum gross megawatts generated monthly to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-17 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NO _x emissions	District Method 100.1	1 hour	Outlet of the SCR
CO emissions	District Method 100.1	1 hour	Outlet of the SCR
SO _x emissions	Approved District method	District approved averaging time	Fuel Sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR
PM10 emissions	Approved District method	District approved averaging time	Outlet of the SCR
PM2.5	Approved District method	District approved averaging time	Outlet of the SCR
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted after SCAQMD approval of the source test protocol, but no later than 180 days after initial start-up. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate in cubic feet per hour (CFH), the flue gas flow rate, and the turbine generating output in MW net and MW gross.

CONDITIONS OF CERTIFICATION
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The test shall be conducted in accordance with an SCAQMD approved test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 45 days before the proposed test date and shall be approved by the SCAQMD before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at loads of 100 and 70 percent without duct firing, and 100 percent with duct firing.

For natural gas fired turbines only, volatile organic compound (VOC) compliance shall be demonstrated as follows: a) stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) analysis of canisters are per EPA Method TO-12 (with pre concentration) and temperature of canisters when extracting samples for analysis is not below 70 deg F. The use of this alternative method is solely for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines. The results shall be reported with two significant digits.

[Rule 1303(a)(1) – BACT, Rule 1303(b)(2) – Offset, Rule 1703-PSD, Rule 2005]

VERIFICATION: The project owner shall submit the proposed protocol for the initial source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM. The project owner shall notify the District and CPM no later than 10 days prior to the proposed initial source test date and time.

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AQ-18 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
NH ₃ emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted and the results submitted to the District within 60 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall submit the proposed protocol for the source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 10 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-19 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant to be tested	Required Test Method(s)	Averaging Time	Test Location
SOX emissions	Approved District method	District approved averaging time	Fuel Sample
VOC emissions	Approved District method	1 hour	Outlet of the SCR
PM10 emissions	Approved District method	District approved averaging time	Outlet of the SCR

The test shall be conducted at least once every three years.

The test shall be conducted and the results submitted to the SCAQMD within 60 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted when this equipment is operating at 100 percent of maximum heat input.

For natural gas fired turbines only, volatile organic compound (VOC) compliance shall be demonstrated as follows: a) stack gas samples are extracted into Summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) pressurization of canisters are done with zero gas analyzed/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) analysis of canisters are per EPA Method TO-12 (with pre concentration) and temperature of canisters when extracting samples for analysis is not below 70 deg F.

The use of this alternative method is solely for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines. The results shall be reported with two significant digits.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emission limit.

[Rule 1303(a)(1) – BACT, Rule 1303(b)(2) – Offset, Rule 475]

CONDITIONS OF CERTIFICATION
APPENDIX "A"

VERIFICATION: The project owner shall submit the proposed protocol for the source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 10 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-20 The project owner shall install and maintain a continuous emissions monitoring system (CEMS) to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis. The CEMS shall be installed and operating no later than 90 days after initial startup of the turbine, in accordance with approved SCAQMD Rule 218 CEMS plan application. The project owner shall not install the CEMS prior to receiving initial approval from SCAQMD.

The CEMS shall be installed and operated to measure the CO concentration over a 15 minute averaging time period.

The CEMS shall convert the actual CO concentrations to mass emission rates (lbs/hr) using the equation below and record the hourly emission rates on a continuous basis.

CO Emission Rate, lbs/hr = $K \cdot C_{co} \cdot F_d \left[\frac{20.9}{(20.9\% - \%O_2)} \right] \left[\frac{Q_g \cdot HHV}{10E6} \right]$, where

$K = 7.267 \cdot 10^{-8}$ (lbs/scf)/ppm

C_{co} = Average of 4 consecutive 15 min. average CO concentrations, ppm

F_d = 8710 dscf/MMBTU natural gas

$\%O_2, d$ = Hourly average % by volume O_2 dry, corresponding to C_{co}

Q_g = Fuel gas usage during the hour, scf/hr

HHV = Gross high heating value of the fuel gas, BTU/scf

[Rule 1303 – BACT, Rule 1703-PSD]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

CONDITIONS OF CERTIFICATION
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AQ-21 The project owner shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis. The CEMS shall be installed and operating no later than 90 days after initial startup of the turbine, in accordance with approved SCAQMD Regulation XX CEMS plan application. The project owner shall not install the CEMS prior to receiving initial approval from SCAQMD.

Rule 2012 provisional relative accuracy test audit (RATA) testing shall be completed and submitted to the SCAQMD within 90 days of the conclusion of the turbine commissioning period. During the interim period between the initial start up and the provisional certification date of the CEMS, the project owner shall comply with the requirements of Rule 2012(h)(2) and 2012(h)(3).

[Rule 1703 – PSD, Rule 2005, Rule 2012]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-22 The project owner shall install this equipment according to the following requirements:

Construction shall commence within 12 months of the date of the permit to construct unless the permit is extended, but in no case should the start of construction exceed 18 months from the date of the permit to construct. Construction shall not be discontinued for a period of 18 months or more.

[Rule 205, 40 CFR Part 52]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-23 The project owner shall upon completion of the construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 12-AFC-02 project.

[CEQA]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-24 The project owner shall install this equipment according to the following requirements:

Total commissioning hours shall not exceed 491 hours of operation for each turbine from the date of initial turbine start up. Total commissioning hours without control shall not exceed 47 hours of operation for each turbine. Only one turbine shall undergo steam blows at any one time and at a load of no more than 50%. During steam blows, the other two turbines in the block shall not be fired. During all other commissioning activities outside of steam blows, a maximum of 2 turbines may be operated at any one time.

The project owner shall vent this equipment to the CO oxidation catalyst and SCR control system whenever the turbine is in operation after commissioning.

The project owner shall provide SCAQMD with written notification of the initial startup date. Written records of commissioning start ups, and shutdowns shall be maintained and be made available upon request from SCAQMD.

[Rule 1303 – BACT, Rule 1303 – Offsets, Rule 1703 – PSD, Rule 2005]

VERIFICATION: The project owner shall submit CEMS records to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-25 The project owner shall, upon completion of the construction, operate and maintain this equipment according to the following specifications:

The project owner shall record the total net ~~and gross~~ power generated in a calendar month in megawatt-hours.

The project owner shall calculate and record greenhouse gas emissions for each calendar month using the following formula:

$$\text{GHG} = 60.08 * \text{FF}$$

Where, GHG is the greenhouse gas emissions in tons of CO₂ and FF is the monthly fuel usage in millions standard cubic feet.

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The project owner shall calculate and record the GHG emissions in pounds per net megawatt-hour on a 12-month rolling average. The GHG emissions from this equipment shall not exceed 652,827 tons per year on a 12-month rolling average basis. The calendar annual average GHG emissions shall not exceed 1,053.7 lbs per net megawatt-hour (1,138.0 lbs per net megawatt hour inclusive of equipment degradation).

The project owner shall maintain records in a manner approved by the SCAQMD to demonstrate compliance with this condition. The records shall be made available to SCAQMD upon request.

[Rule 1714]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-26 The project owner shall, upon completion of the construction, operate and maintain this equipment according to the following specifications:

The project owner shall record the total gross power generated in a calendar month in megawatt-hours.

The project owner shall calculate and record greenhouse gas emissions for each calendar month using the following formula:

$$\text{GHG} = 60.08 * \text{FF}$$

Where, GHG is the greenhouse gas emissions in tons of CO₂ and FF is the monthly fuel usage in millions standard cubic feet.

The project owner shall calculate and record the GHG emissions in pounds per gross megawatt-hours on a 12-month rolling average. The calendar annual average GHG emissions shall not exceed 1,000 lbs per gross megawatt-hour, or the applicable limit which is published in the final EPA rule.

The project owner shall maintain records in a manner approved by the SCAQMD to demonstrate compliance with this condition. The records shall be made available to SCAQMD upon request.

[40 CFR60 Subpart KKKK]

The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-27

This equipment shall not be operated unless the facility holds 39,854 pounds of NO_x RECLAIM Trading Credits (RTCs) in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 62,507 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[Rule 2005]

VERIFICATION: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

AQ-28

This equipment shall not be operated unless the facility holds 2,694 pounds of SO_x RECLAIM Trading Credits (RTCs) in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 3,798 pounds of SO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[Rule 2005]

VERIFICATION: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

AQ-29 The project owner shall provide to the District a source test report in accordance with the following specifications:

- Source test results shall be submitted to the District no later than 60 days after the source tests required under conditions **AQ-17**, **AQ-18**, and **AQ-19** are conducted.
- Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lb/hr), and lb/MMCF. In addition, solid particulate matter (PM) emissions, if required to be tested, shall also be reported in terms of grains/dry standard cubic feet.
- All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute. All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (cubic feet per hour), the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[Rule 1303(a)(1) – BACT, Rule 1303(b)(2) – Offset]

VERIFICATION: The project owner shall submit the proposed protocol for the initial source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM. The project owner shall notify the District and CPM no later than 10 days prior to the proposed initial source test date and time.

AQ-30 The project owner shall keep records in a manner approved by the District, for the following parameter(s) or item(s):

Commissioning hours and type of control and fuel use

Date, time, and duration of each start-up and shutdown, and the type of startup (cold, warm, or hot).

In addition to the requirements of a certified continuous emissions monitoring system (CEMS), natural gas fuel use records shall be kept during and after the commissioning period and prior to CEMS certification

Minute by minute data (NO₂ and O₂ concentration and fuel flow rate at a minimum) for each turbine start up

Monthly number of hours each turbine is operated with duct firing

Total annual power output in MWh

[Rule 1303(b)(2) - Offsets]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

DUCT BURNER

AQ-31 This equipment shall not be operated unless the facility holds 13,488 pounds of NO_x RECLAIM Trading Credits (RTCs) in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 21,155 pounds of NO_x RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[Rule 2005]

VERIFICATION: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

AQ-32 This equipment shall not be operated unless the facility holds 912 pounds of SO_x RECLAIM Trading Credits (RTCs) in its allocation account to offset the annual emissions increase for the first year of operation. The RTCs

held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds 1,286 pounds of SOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

[Rule 2005]

VERIFICATION: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

SCR

AQ-33 The 5 ppmv NH₃ emission limit is averaged over 60 minutes at 15% O₂, dry basis. The project owner shall calculate and continuously record the NH₃ slip concentration using the following:

$$\text{NH}_3 \text{ (ppmv)} = [a - b \cdot (c \cdot 1.2) / 1\text{E}+06] \cdot 1\text{E}+06 / b$$

where,

a = NH₃ injection rate (lbs/hr)/17(lb/lb-mol)

b = dry exhaust gas flow rate (standard cubic feet (scf)/hr)/385.3 scf/lb-mol)

c = change in measured NO_x across the SCR (ppmvd at 15% O₂)

The project owner shall install and maintain a NO_x analyzer to measure the SCR inlet NO_x ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months. The NO_x analyzer shall be installed and operated within 90 days of initial start-up.

The project owner shall use the above described method or another alternative method approved by the Executive Officer.

CONDITIONS OF CERTIFICATION APPENDIX "A"

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall include exceedances of the hourly ammonia slip limit as part of the Quarterly Operation Reports (**AQ-SC8**). Exceedances of the ammonia limit shall be reported as prescribed herein. Chronic exceedances of the ammonia slip limit shall be identified by the project owner and confirmed by the CPM within 60 days of the fourth quarter Quarterly Operation Report (**AQ-SC8**) being submitted to the CPM. If a chronic exceedance is identified and confirmed, the project owner shall work in conjunction with the CPM to develop a reasonable compliance plan to investigate and redress the chronic exceedance of the ammonia slip limit within 60 days of the above confirmation. The project owner shall include all calibration results performed as part of Quarterly Operation Reports (**AQ-SC8**).

AQ-34 The project owner shall install and maintain a flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia.

The project owner shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

The injected ammonia rate shall be maintained within 11.8 gal/min and 33 gal/min except during start ups and shutdowns

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-35 The project owner shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor.

The project owner shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

CONDITIONS OF CERTIFICATION
APPENDIX "A"

The exhaust temperature at the inlet of the selective catalytic reduction shall be maintained between 400-700 deg F except during start up and shutdowns

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-36 The project owner shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the selective catalytic reduction catalyst bed in inches of water column.

The project owner shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

The differential pressure shall be maintained between 1.5 “ WC and 3.5 “ WC.

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-37 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number **AQ-34**

Condition Number **AQ-35**

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-38 For the purpose of the following condition numbers, continuous monitoring shall be defined as measuring at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.

Condition Number: **AQ-36**

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-39 The project owner shall upon completion of the construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 12-AFC-2 project.

[CEQA]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

CO CATALYST

AQ-40 The project owner shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the CO Catalyst.

The project owner shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every twelve months.

[Rule 1303(a)(1) – BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AMMONIA STORAGE TANK

AQ-41 The project owner shall vent this equipment, during filling, only to the vessel from which it is being filled.

[Rule 1303(a)(1)-BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-42 The project owner shall install and maintain a pressure relief valve set at 50 pounds per square inch gage (psig).

[Rule 1303(a)(1)-BACT]

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-43 The project owner shall upon completion of the construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the final California Energy Commission decision for the 12-AFC-2 project.

VERIFICATION: The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

WORKER SAFETY & FIRE PROTECTION

WORKER SAFETY-1 PROJECT CONSTRUCTION SAFETY AND HEALTH PROGRAM

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 Huntington Beach 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 Huntington Beach Fire Department stating the fire department's timely comments on the Construction Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 PROJECT OPERATIONS AND MAINTENANCE SAFETY AND HEALTH PROGRAM

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 Plan (8 Cal Code Regs. § 3221); and
- Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401—3411).

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The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Huntington Beach 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 Huntington Beach Fire Department stating the fire department's timely comments on the Operations Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-3 CONSTRUCTION SAFETY SUPERVISOR

The project owner shall assign a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is has knowledge of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- assure that the safety program for the project complies with Cal/OSHA and 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 and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- assure that all the plans identified in Conditions of Certification Worker Safety-1 and -2 are implemented.

VERIFICATION: At least 60 days prior to the start of site mobilization, the project owner shall submit the name and contact information for the CSS to the CPM for review and approval. 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 SAFETY MONITOR

The project owner shall, through an agreement with the Chief Building Official (CBO), obtain and pay for the services of a Safety Monitor. The services of the Safety Monitor 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 Condition of Certification Worker Safety-3, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall have full access to the project site to conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

VERIFICATION: At least 60 days 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 AUTOMATIC EXTERNAL DEFIBRILLATOR

The project owner shall ensure that a portable automatic external defibrillator (AED) is located and properly maintained and functioning on site during all demolition, construction, and operations. The project owner shall prepare and implement a training program for all on the use of the AED. The training program shall be submitted to the CPM for review and approval. During construction and commissioning, the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate,

the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use.

VERIFICATION: At least 60 days prior to the start of site mobilization, the project owner shall submit the AED training program to the CPM for review and approval. The project owner shall also submit proof that a portable automatic external defibrillator (AED) exists on site in the Monthly Compliance Report and the Annual Compliance Report.

WORKER SAFETY-6 EMERGENCY ACCESS PLAN

The project owner shall prepare an Emergency Access Plan that shows all of the following: (1) a 26-foot wide fire lane that will provide a continuous loop around HBEP Block 1; (2) a 26-foot wide fire lane that will provide a continuous loop around HBEP Block 2; (3) a 26-foot wide fire lane from the HBEP main entrance to the continuous loops referenced in (1) and (2) above; and (4) a 26-foot wide fire lane from a secondary access point to the continuous loops referenced in (1) and (2) above. Both access lanes shall connect to a public street. The 26-foot wide fire lanes shall meet the applicable requirements of the California Fire Code, City of Huntington Beach Municipal Code Chapter 17.56 - Huntington Beach Fire Code, and the Huntington Beach Fire Department City Specifications.

VERIFICATION: At least 60 days prior to the start of construction of any structures or components listed in the CBO-approved master drawing and master specification list, or within a timeframe approved by the CPM, the project owner shall submit the Emergency Access Plan to the City Fire Department for review and timely comment, and to the CPM and CBO for review and approval.

HAZARDOUS MATERIALS

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix B, below, or in greater quantities or strengths than those identified by chemical name in Appendix B, 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) prepared pursuant to the California Accidental Release Program (CalARP) to the Huntington Beach Fire Department and the CPM for review. After receiving comments from the Huntington Beach Fire Department 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 Huntington Beach Fire Department for information and to the CPM for approval.

VERIFICATION: At least thirty (30) 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 thirty (30) days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the Certified Unified Program Agency (the Huntington Beach Fire Department) for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia and other liquid hazardous materials by tanker truck. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials including provisions to maintain lockout control by a power plant employee not involved in the delivery or transfer operation. This plan shall be applicable during construction, commissioning, and operation of the power plant.

VERIFICATION: At least thirty (30) days prior to the delivery of any liquid hazardous material 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 containment basis shall incorporate a vented cover that allows free flow of any aqueous ammonia release into the containment, yet limits the total vent area to not more than 16 square ft. 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 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 thirty (30) days prior to receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (I-405 to Beach Boulevard (State Highway 39), south onto Pacific Coast Highway (State Highway 1), and left onto Newland Street, then right into the HBEP 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-7 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-8 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that will be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (and with slats or other methods to restrict visibility if a fence is selected);
2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
 - A. a statement (refer to sample, **ATTACHMENT A**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be

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conducted in accordance with state and federal laws regarding security and privacy;

- B. a statement(s) (refer to sample, **ATTACHMENT B**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;
- 6. site access controls for employees, contractors, vendors, and visitors;
 - 7. a statement(s) (refer to sample, **ATTACHMENT C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
 - 8. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) with cameras able to pan, tilt, and zoom, have low-light capability, and are able to view 100% of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate; and,
 - 9. additional measures to ensure adequate perimeter security consisting of either:
 - A. security guard(s) present 24 hours per day, 7 days per week; or
 - B. power plant personnel on site 24 hours per day, 7 days per week, and perimeter breach detectors or on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require

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additional measures such as protective barriers for critical power plant components— transformers, gas lines, and compressors—depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with both appropriate law enforcement agencies and the applicant.

HAZ-9: The project owner shall not allow any fuel gas pipe cleaning activities on site, either before placing the pipe into service or at any time during the lifetime of the facility, that involve “flammable gas blows” where natural (or flammable) gas is used to blow out debris from piping and then vented to atmosphere. Instead, an inherently safer method involving a non-flammable gas (e.g. air, nitrogen, steam) or mechanical pigging shall be used as per NFPA 56. A written procedure shall be developed and implemented as per NFPA 56, section 4.3.1

VERIFICATION: At least 30 days before any fuel gas pipe cleaning activities begin, the project owner shall submit a copy of the Fuel Gas Pipe Cleaning Work Plan (as described in NFPA 56, section 4.3.1) which shall indicate the method of cleaning to be used, what gas will be used, the source of pressurization, and whether a mechanical PIG will be used, to the CBO for information and to the CPM for review and approval.

At least thirty (30) days prior to the initial receipt of hazardous materials on site, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I, _____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for employment at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 ____.

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

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SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I, _____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for contract work at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

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SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I, _____

(Name of person signing affidavit) (Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

(Company name)

for hazardous materials delivery to

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

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WASTE MANAGEMENT

WASTE-1 The project owner shall ensure that the HBEP project site is properly characterized and remediated as necessary pursuant to the corrective action plans reviewed by DTSC, the Huntington Beach Fire Department and/or the Orange County Health Care Agency, and approved by the Energy Commission CPM. In no event shall project construction commence in areas requiring characterization and remediation until the CPM determines, with confirmation from the appropriate regulatory agency, that all necessary remediation has been accomplished.

All soils at the site shall conform to city of Huntington Beach's Specification # 431-92 Soil Clean-Up Standards Soil testing for the contaminants identified in City Specification 431-92 and for Methane Gas, in accordance with City Specification 429, shall be completed as follows:

Soil Sampling Work Plan: A qualified environmental consultant shall prepare and submit a soil sampling work plan (for contaminants identified in City Specification 431-92 and for methane gas) to the CPM and the Huntington Beach Fire Department HBFD for review and timely comment. Once the HBFD reviews and the CPM approves the work plan, the sampling may commence.

Note: Soil shall not be exported to other city of Huntington Beach locations without first being demonstrated to comply with City Specification 431-92 Soil Clean Up Standards. Also, any soil proposed for import to the site shall first be demonstrated to comply with City Specification 431-92.

Soil Sampling Lab Results: Conduct the soil sampling in accordance with the HBFD approved work plan. After the sampling is conducted, the lab results (along with the Environmental Consultants summary report) for methane and 431-92 testing shall be submitted to the CPM and HBFD. for review.

Remediation Action Plan: If contamination is identified, provide a Fire Department approved Remediation Action Plan (RAP) based on requirements found in Huntington Beach *City Specification #431-92, Soil Cleanup Standard*. All soils shall conform to City Specification # 431-92 Soil Clean-Up Standards prior to the issuance of a grading or building permit.

Prior to and during grading and construction, discovery of additional soil contamination or underground pipelines, etc., must be reported to the CPM and the HBFD immediately and the approved work plan modified accordingly in compliance with City Specification #431-92 Soil Clean-Up Standards.

Outside City Consultants: The HBFD review of this project and subsequent plans will require the use of City consultants. The Huntington Beach City Council approved fee schedule allows the Fire Department to recover consultant fees from the applicant, developer or other responsible party.

The project owner shall furnish a final copy of. Items a. through e. to the Energy Commission CPM, DTSC, the Huntington Beach Fire Department and/or the Orange County Health Care Agency. An initial draft of the remedial documents shall be provided to the Energy Commission CPM, DTSC and the Huntington Beach Fire Department for review and timely comments. The final document shall be approved by the CPM. The final copy of the remedial plan shall reflect recommendations of the CPM, DTSC, and the Huntington Beach Fire Department, the project owner shall provide to the CPM for review and approval written notice from the appropriate regulatory agency that the HBEP site has been investigated and remediated as necessary in accordance with the corrective action plan.

VERIFICATION: At least 30 days prior to implementation the project owner shall submit the Soil Sampling Work Plan to the CPM for approval. Within 30 days of implementing the Soil Sampling Work Plan, the project owner shall submit copies of all soil sampling lab results with the summary report for review. At least 90 days prior to implementation the project owner shall submit the Remediation Action Plan to the CPM for review and approval. If additional soil contamination is encountered prior to or during grading the project owner will shall revise the approved work plan and submit it for CPM approval within 30 days after contamination is identified.

WASTE-2 Prior to demolition of existing structures associated with Units 1, 2, and 5, the project owner shall complete and submit a copy of a SCAQMD Asbestos Demolition Notification Form to the CPM and the SCAQMD for approval. After receiving approval, the project owner shall remove all Asbestos Containing Material (ACM) from the site prior to demolition.

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VERIFICATION: No less than sixty (60) days prior to commencement of structure demolition, the project owner shall provide the Asbestos Demolition Notification Form to the CPM for review and approval. The project owner shall inform the CPM via the monthly compliance report, of the data when all ACM is removed from the site.

WASTE-3 The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The professional engineer or professional 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 of the professional engineer or professional geologist to the CPM for review and approval.

WASTE-4 If potentially contaminated soil is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the professional engineer or professional geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, representatives of Department of Toxic Substances Control, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional 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 professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the CPM and representatives of the Department of Toxic Substances Control for guidance and possible oversight.

VERIFICATION: The project owner shall submit any final reports filed by the professional engineer or professional 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.

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WASTE-5 The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications;
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.
- a method for collecting weigh tickets or other methods for verifying the volume of transported and or location of waste disposal; and,
- a method for reporting to demonstrate project compliance with construction waste diversion requirements of 50 percent pursuant to the CalGreen Code and Construction and Orange County Construction & Demolition Recycling and Reuse Program.

VERIFICATION: The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

The project owner shall also document in each monthly compliance report (MCR) the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Construction Waste Management Plan; and update the Construction Waste Management Plan, as necessary, to address current waste generation and management practices.

WASTE-6 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 way project-related wastes are managed.

WASTE-7 The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and
- a detailed description of how facility wastes will be managed and disposed upon closure of the facility.

VERIFICATION: The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary.

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the

Operation Waste Management Plan as necessary to address current waste generation and management practices.

WASTE-8 The project owner shall ensure that all spills or releases of hazardous substances, materials, or waste are reported, cleaned up, and remediated as necessary, in accordance with all applicable federal, state, and local requirements.

VERIFICATION: The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; amount of contaminated soil/material generated; how release was managed and material cleaned up; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release. Copies of the unauthorized spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

BIOLOGICAL RESOURCES

BIO-1 APPOINTMENT AND QUALIFICATIONS OF DESIGNATED BIOLOGIST

The project owner shall assign at least one Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval and to the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) for review and comment.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least one year of field experience with biological resources found in or near the project area.

Current or prior possession of USFWS 10(a)(1)(A) permit and/or CDFW scientific collecting permit is preferred, but not required.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

The designated biologist may be replaced by submitting the required resume, references and contact information to the CPM, for consultation with CDFW and USFWS.

VERIFICATION: The project owner shall submit the specified information at least 75 days prior to the start of site mobilization or construction-related ground disturbance activities. No pre-construction site mobilization or construction related activities shall commence until a Designated Biologist has been approved by the CPM.

The project owner may replace a Designated Biologist by submitting the required resume, references and contact information to the CPM for review and approval and to the CDFW and USFWS for review and comment, at least ten working days prior to the

termination or release of the then-current Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

The CPM may withhold approval of a Designated Biologist based upon proof that a proposed Designated Biologist has repeatedly failed to comply with the conditions of any Energy Commission license as they pertain to biological resources. The CPM shall meet and confer with the project owner regarding the need to replace a Designated Biologist. Removal may occur if the CPM can establish that the Designated Biologist has repeatedly failed to comply with the conditions of the HBEP license that pertain to biological resources.

In the absence of comments, the CPM shall deem the Designated Biologist acceptable to USFWS and/or CDFW.

BIO-2 DUTIES OF DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR(S)

The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, demolition, and construction, activities. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the project owner and CPM. The Designated Biologist Duties shall include the following:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification;
2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) (Condition of Certification BIO-6) to be submitted by the project owner;
3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect or direct the site personnel how to inspect active construction areas where animals may have become trapped prior to construction commencing each day. Inspect or direct the site personnel how to inspect the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way. Inspect soil or spoil stockpiles and dust abatement watering for compliance with Condition of Certification **BIO-7**. Inspect erosion control materials (e.g., hay bales) to confirm weed-free certification. Inspect weed infestations and monitor eradication measures to determine success. Inspect trash receptacles, monitor site personnel compliance with trash handling, pet prohibitions, and all other WEAP components (Condition of Certification **BIO-5**);
6. Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification;
7. Respond directly to inquiries of the CPM regarding biological resource issues;
8. Maintain written records of the tasks specified above and those included in the BRMIMP;
9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits; and
10. Maintain the ability to be in regular, direct communication with representatives of CDFW, USFWS, and CPM, including notifying these agencies of dead or injured listed species and reporting special status species observations to the California Natural Diversity Database.

VERIFICATION: The Designated Biologist shall notify the CPM of any non-compliance or special-status species injury or mortality within one (1) working day of the incident. The Designated Biologist shall submit in the MCR to the CPM copies of all written reports and summaries that document construction activities that have the potential to affect biological resources. The Designated Biologist's written records will be made available for the CPM's inspection on request at any time during normal business hours. During project operation, the Designated Biologist(s) shall submit

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record summaries in the annual compliance report unless their duties cease, as approved by the CPM.

BIO-3 APPOINTMENT AND QUALIFICATIONS OF BIOLOGICAL MONITOR

The project owner shall submit the resume, at least three references, and contact information of the proposed Biological Monitor(s) to the CPM for approval. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

The project owner may replace a Biological Monitor by submitting the required resume, references and contact information to the CPM, for consultation with CDFW and USFWS, at least ten working days prior to the termination or release of the then-current Biological Monitor. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Biological Monitor is proposed to the CPM for consideration.

VERIFICATION: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any project-related site disturbance activities. Within 10 days of completion of training, the Designated Biologist shall submit a written statement to CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional biological monitors are needed during construction, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIO-4 POWERS OF DESIGNATED BIOLOGIST/BIOLOGICAL MONITOR(S)

The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification.

If required by the Designated Biologist and or Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;

2. Inform the project owner and the construction/operation manager when to resume activities; ~~and~~
3. Notify the CPM if there is a halt of any activities and advise the CPM of any corrective actions that have been taken or would be instituted as a result of the work stoppage; and

The CPM, in coordination with CDFW or USFWS as appropriate, will determine if corrective action has been effective and will direct the project owner to take further corrective action as needed.

If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

VERIFICATION: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem within one (1) working day of initiating the corrective action.

Whenever corrective action is taken by the project owner, a determination of success or failure would be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

**BIO-5 BIOLOGICAL RESOURCES WORKER ENVIRONMENTAL
AWARENESS PROGRAM (WEAP)**

The project owner shall develop and implement an HBEP-specific Worker Environmental Awareness Program (WEAP). and submit the WEAP to the CPM for review and approval and to the USFWS and CDFW for review and comment. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors. The WEAP shall be implemented during site mobilization, ground disturbance, grading, construction, operation, and closure. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which

supporting electronic media and written material is made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, explain the reasons for protecting these resources, and the function of flagging in designating sensitive resources and authorized work areas;
3. Discuss federal and state laws afforded to protect the sensitive species and explain penalties for violation of applicable laws, ordinances, regulations, and standards (e.g., federal, and state endangered species acts);
4. Place special emphasis on the light-footed clapper rail, western snowy plover, California least tern and Belding's savannah sparrow, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection and status, penalties for violations, reporting requirements, and protection measures;
5. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers to dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;
6. Include a discussion of the biological resources conditions of certification;
7. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
8. Include a training acknowledgment form to be signed by each worker indicating that they received the WEAP training and shall abide by the guidelines.

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

VERIFICATION: At least 45 days prior to the start of any planned project-related site disturbance activities, the project owner shall provide to the CPM a copy of the draft WEAP and all supporting written materials and electronic media prepared or reviewed by

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the Designated Biologist and a resume of the person(s) administering the program. The Notice to Proceed will not be issued until the WEAP has been approved by the CPM.

The project owner shall provide in the monthly compliance reports the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least six months after the start of commercial operation.

Throughout the life of the project, WEAP shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attend the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CMP upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate indicating that they have completed the required training.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least six months after the completion of all project construction activities. During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

In the absence of comments, the CPM shall deem the WEAP acceptable to USFWS and/or CDFW.

BIO-6 BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN (BRMIMP)

The project owner shall develop a BRMIMP and submit two copies of the proposed BRMIMP to the CPM for review and approval and to CDFW and USFWS for review and comment and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include the following:

1. All biological resource mitigation, monitoring, and compliance measures proposed and whether the project owner has agreed to the proposed measures;

2. All biological resource conditions of certification identified in the Commission Decision as necessary to avoid or mitigate impacts;
3. All biological resource mitigation, monitoring, and compliance measures required in other state agency terms and conditions, such as those provided in the National Pollution Discharge Elimination System (NPDES) Construction Activities Stormwater General Permit;
4. A list or tabulation of all sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;
5. All required mitigation measures for each sensitive biological resource;
6. A detailed description of measures that shall be taken to avoid or mitigate disturbances from construction and demolition activities;
7. All locations, shown on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
8. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities prior to any site or related facilities mobilization disturbance, for comparison with aerial photographs at the same scale to be provided and subsequent to completion of project construction (see Verification).
9. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
10. Performance standards from each biological resource condition of certification to determine if mitigation and conditions are or are not successful;
11. Remedial measures to be implemented if performance standards are not met;
12. A discussion of biological resources-related facility closure measures including a description of funding mechanism(s);
13. A process for proposing BRMIMP modifications to the CPM and appropriate agencies for review and approval; and

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14. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Database (CNDDDB) per CDFW requirements.

VERIFICATION: No fewer than 45 days prior to planned start of construction, the project owner will submit a draft BRMIMP to the CPM for review and approval and to CDFW and USFWS for review and comment. The Notice to Proceed will not be issued until the BRMIMP has been approved by the CPM. In the absence of comments, the CPM shall deem the BRMIMP acceptable to USFWS and/or CDFW.

If the National Pollution Discharge Elimination System (NPDES) Construction Activities Stormwater General Permit or any other permits has not have not yet been received when the BRMIMP is first submitted, those permits shall be submitted to the CPM, the CDFW, and USFWS within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit conditions, if any.

Prior to implementing any changes to the approved BRMIMP, the project owner shall provide a draft of the proposed modification to the CPM for review and approval and to CDFW and USFWS for review and comment. No modification shall be implemented until approved by the CPM. In the absence of comments, the CPM shall deem the modification to the BRMIMP acceptable to USFWS and/or CDFW.

Implementation of all BRMIMP measures shall be reported in the monthly compliance reports by the Designated Biologist (i.e., survey results, construction activities that were monitored, species observed). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed; a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases; and which mitigation and monitoring items are still outstanding. The Construction Closure Report will include a set of aerial photographs of the site at an approved scale for comparison with the pre-construction set (Item 8 above).

BIO-7

DUTIES OF DESIGNATED BIOLOGIST

The project owner shall implement the following measures during site mobilization, construction, operation, and closure to manage their project site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. The boundaries of all areas to be temporarily or permanently disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to demolition or construction activities in consultation with the Designated Biologist. Spoils shall be stockpiled in disturbed areas, which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, vehicles, and equipment shall be confined to the flagged areas.
2. At the end of each work day, the Designated Biologist or Biological Monitor, shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If site personnel are inspecting trenches, bores, and other excavations and wildlife is trapped, they will immediately notify the Designated Biologist and/or Biological Monitor. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access. Should wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the animal to a safe location. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.
3. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) *Suggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Reducing Avian Collisions with Power Lines* (APLIC 2012) to reduce the likelihood of large bird electrocutions and collisions.

4. Spoils shall not be stockpiled adjacent to the southeastern fence line to minimize potential for spoils to enter into adjacent wetlands.
5. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.
6. To the extent feasible, FAA visibility lighting shall employ only strobed, strobe-like or blinking incandescent lights, preferably with all lights illuminating simultaneously. Minimum intensity, maximum “off-phased” dual strobes are preferred, and no steady burning lights (e.g., L-810s) shall be used.
7. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract California least tern predators to construction sites. During construction, site personnel shall patrol these areas to ensure water does not puddle and attract crows and other wildlife to the site, and shall take appropriate action to reduce water application rates where necessary.
8. During construction, each employee shall report all deaths, including road kill, and injuries of special-status species to the Designated Biologist or Biological Monitor immediately upon discovery. The Designated Biologist or Biological Monitor shall remove the carcass or injured animal promptly. The Designated Biologist or Biological Monitor shall immediately report any dead or injured animals to CDFW and/or USFWS and the CPM, and the project owner shall follow instructions that are provided by CDFW or USFWS. The Designation Biologist shall maintain a record of all dead or injured animals, including species name, physical characteristics of the animal (sex, age class, length, weight), disposition of the animal, and other pertinent information and shall include this information in the MCR.

During operations, each employee shall report all deaths, including road kill, and injuries of special-status species to the Project Environmental Compliance Monitor immediately upon discovery. shall be notified. The Project Environmental Compliance Monitor shall remove the carcass or injured animal promptly. The Project

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Environmental Compliance Monitor shall immediately report any dead or injured animals to CDFW and/or USFWS and the CPM, and the project owner shall follow instructions that are provided by CDFW or USFWS. The Project Environmental Compliance Monitor shall maintain a record of all dead or injured animals, including species name, physical characteristics of the animal (sex, age class, length, weight), disposition of the animal, and other pertinent information.

9. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan (see Condition of Certification HAZ-2). Hazardous spills shall be immediately cleaned up and the contaminated soil will be properly disposed of at a licensed facility. Any on-site servicing of vehicles or construction equipment shall take place only at a designated area approved by the Designated Biologist. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.
10. During construction all trash and food-related waste shall be placed in self-closing containers and removed weekly or more frequently from the site. Workers shall not feed wildlife or bring pets to the project site.
11. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
12. The project owner shall implement the following measures during construction and operation to prevent the spread and propagation of nonnative, invasive weeds:
13. Limit the size of any vegetation and/or ground disturbance to the minimum area needed for safe completion of project activities, and limit ingress and egress to defined routes;
14. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations. Invasive non-native species shall not be used in landscaping plans and erosion control. Monitor and

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rapidly implement control measures to ensure early detection and eradication of weed invasions.

15. During construction and operation, the project owner shall conduct pesticide management in accordance with standard BMPs. The BMPs shall include non-point source pollution control measures. The project owner shall use a licensed herbicide applicator and obtain recommendations for herbicide use from a licensed Pest Control Advisor. Herbicide applications must follow EPA label instructions. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to non-target plants and wildlife. The project owner shall only use pesticides for which a “no effect” determination has been issued by the EPA’s Endangered Species Protection Program for any species likely to occur within the project area or adjacent wetlands. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used.

VERIFICATION: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the monthly compliance reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written Construction Completion Report identifying how measures have been completed (see Condition of Certification **BIO-6** verification).

Monthly and annual compliance reports will include results of all regular inspections by the Designated Biologist and Biological Monitor(s), including but not limited to the requirements cited above and in Condition of Certification BIO-2.

The project owner must maintain written records of vehicle and equipment inspection and maintenance, and provide summaries in each monthly and annual compliance report. The complete written vehicle maintenance record will be available for the CPM’s inspection during normal business hours.

The BRMIMP (Condition of Certification **BIO-6**) must include affirmation by the project owner that:

- All electrical component design conforms to applicable APLIC guidelines; and
- All soil binders conform to the requirements stated above.

BIO-8 Pre-Construction Nest Surveys

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Pre-construction nest surveys shall be conducted if construction or demolition activities will occur from February 1 through August 31. The Designated Biologist or Biological Monitor shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat and substrate within the project site and areas surrounding the project site within 300 feet of the project boundary.
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. Pre-construction surveys shall be conducted no more than 14 days prior to initiation of construction activity. One survey needs to be conducted within the 3-day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks during February 1 through August 31 in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.
3. If active nests are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest) shall be established around each nest. Specific buffer distances are provided below for applicable avian groups (Biological Resources Table 1); these buffers may be modified with the CPM's approval. For special-status species, if an active nest is identified, the size of each buffer zone shall be determined by the Designated Biologist in consultation with the CPM (in coordination with CDFW and USFWS). Nest locations shall be mapped using GPS technology.

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**Biological Resources Table 1
HBEP Construction and Demolition Buffers for Active Nests**

<u>Avian Group</u>	<u>Species Potentially Nesting in the Project Vicinity</u>	<u>Buffer for Construction and Demolition Activities (feet)</u>
Bitterns and herons	Black-crowned night heron, great blue heron, great egret, green heron, snowy egret	250
Cormorants	Double-crested cormorant	100
Doves	Mourning dove	25
Geese and ducks	American widgeon, blue-winged teal, cinnamon teal, Canada goose, gadwall, mallard, northern pintail, ruddy duck	100
Grebes	Clark's grebe, eared grebe, horned grebe, pied-billed grebe, western grebe	100
Hummingbirds	Allen's hummingbird, Anna's hummingbird, black-chinned hummingbird	25
Plovers	Black-bellied plover, killdeer	50
Raptors (Category 1)	American kestrel, barn owl, red-tailed hawk	50
Raptors (Category 2)	Cooper's hawk, red-shouldered hawk, sharp-shinned hawk	150

<u>Avian Group</u>	<u>Species Potentially Nesting in the Project Vicinity</u>	<u>Buffer for Construction and Demolition Activities (feet)</u>
Raptors (Category 3)	Northern harrier, white-tailed kite	These are special-status species; buffer determined in consultation with CPM
Stilts and Avocets	American avocet, black-necked stilt	150
Terns	Elegant tern, Forster's tern, royal tern	100
Passerines (cavity and crevice nesters)	House wren, Say's phoebe, western bluebird	25
Passerines (bridge, culvert, and building nesters)	Black phoebe, cliff swallow, house finch, Say's phoebe	25
Passerines (ground nesters, open habitats)	Horned lark	100

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<u>Avian Group</u>	<u>Species Potentially Nesting in the Project Vicinity</u>	<u>Buffer for Construction and Demolition Activities (feet)</u>
Passerines (understory and thicket nesters)	American goldfinch, blue-gray gnatcatcher, bushtit, California towhee, common yellowthroat, red-winged blackbird, song sparrow, Swainson's thrush	25
Passerines (scrub and tree nesters)	American crow, American goldfinch, American robin, blue-gray gnatcatcher, Bullock's oriole, bushtit, Cassin's kingbird, common raven, hooded oriole, house finch, lesser goldfinch, northern mockingbird	25
Passerines (tower nesters)	Common raven, house finch	25
Passerines (marsh nesters)	Common yellowthroat, red-winged blackbird	25
Species not covered under MBTA	Domestic waterfowl, including domesticated mallards, feral (rock) pigeon, European starling, and house sparrow	N/A

4. If active nests are detected during the survey, the Designated Biologist or Biological Monitor shall monitor all nests with buffers at least once per week, to determine whether birds are being

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disturbed. If signs of disturbance or distress are observed, the Designated Biologist or Biological Monitor shall immediately implement adaptive measures to reduce disturbance in coordination with the CPM. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound dampening structures between the nest and construction activity.

5. If active nests are detected during the survey, the Designated Biologist shall prepare a Nest Monitoring Plan. The Designated Biologist or Biological Monitor shall monitor the nest until he or she determines that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the Designated Biologist or Biological Monitor, disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a determination is made.
6. The Designated Biologist shall conduct a habitat assessment for light-footed clapper rail shall be conducted in Magnolia and Upper Magnolia Marshes during the breeding season (March 1 to August 1) immediately preceding the commencement of construction and demolition activities. If suitable breeding habitat for the light-footed clapper rail is identified, focused surveys will be conducted prior to any construction or demolition activities. Surveys are not required if no suitable habitat is present. If clapper rails are detected during the breeding season, the CPM, CDFW, and USFWS will be notified and the project owner will consult with the USFWS for incidental take authorization, if required.

VERIFICATION: The project owner shall provide notification to the CPM, CDFW, and USFWS at least 2 weeks prior to initiating the habitat assessment and any subsequent surveys for light-footed clapper rail; notification will include the name and resume of the biologist(s) conducting the habitat assessment and surveys and the timing of the surveys. Within ten (10) days of completion of the field work, the project owner shall provide the CPM, CDFW, and USFWS a -report describing the findings of the preconstruction nest surveys and the light-footed clapper rail habitat assessment and focused survey (if surveys were conducted), including a description and representative photographs of habitat in the marshes; the time, date, methods, and

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duration of the surveys; identity and qualifications of the surveyor(s); and a list of species observed. If active nests are detected during the surveys, the reports shall include a map or aerial photo identifying the location of the nest(s) and shall depict the boundaries of the proposed no disturbance buffer zone around the nest(s). The CPM will consider any timely comments received from CDFW and USFWS in review of the report. In the absence of comments within that timeframe, the CPM shall deem the report acceptable to USFWS and/or CDFW.

Additionally, the nest monitoring plan shall be submitted to the CPM for review and approval and to USFWS and CDFW for review and comment prior to any planned demolition or construction activities in the vicinity of any active nest. No such demolition or construction activities may proceed without CPM approval of the nest monitoring plan..If light-footed clapper rails are documented during the breeding season in Upper Magnolia or Magnolia Marshes, prior to any planned pile driving on the site or demolition or construction activities within 400 feet of the marsh boundary, the project owner will notify the CPM and will consult with the USFWS for incidental take authorization or a determination that no incidental take authorization is required. All impact avoidance and minimization measures related to nesting birds shall be included in the BRMIMP and implemented. In the absence of comments within that timeframe, the CPM shall deem the nest monitoring plan acceptable to USFWS and/or CDFW.

Implementation of the measures shall be reported in the monthly compliance reports by the Designated Biologist.

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SOIL AND WATER RESOURCES

NPDES CONSTRUCTION PERMIT REQUIREMENTS

SOIL&WATER-1: The project owner shall manage stormwater pollution from HBEP construction activities by fulfilling the requirements contained in State Water Resources Control Board's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002)* and all subsequent revisions and amendments. The project owner shall develop and implement a construction Storm Water Pollution Prevention Plan (SWPPP) for the construction of the HBEP project.

VERIFICATION: Thirty (30) days prior to site mobilization of HBEP construction activities, the project owner shall submit the construction SWPPP to the CBO and CPM for review and the SWRCB for review and timely comment. A copy of the approved construction SWPPP shall be kept accessible onsite at all times. Within 10 days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the Santa Ana Regional Water Quality Control Board about the general NPDES permit for discharge of stormwater associated with construction and land disturbance activities. This information shall include a copy of the notice of intent and the notice of termination submitted by the project owner to the SWRCB.

HYDROSTATIC WATER DISCHARGE PERMIT REQUIREMENTS

SOIL&WATER-2: Prior to initiation of hydrostatic testing water discharge to surface waters, the project owner shall obtain a National Pollutant Discharge Elimination System permit for discharge to the Pacific Ocean. The project owner shall comply with the requirements of the Permit Order No. R8-2009-0003, NPDES NO. CAG998001 for hydrostatic testing water discharge. The project owner shall provide a copy of all permit documentation sent to the Santa Ana Regional Water Quality Control Board or State Water Quality Control Board to the CPM and notify the CPM in writing of any reported non-compliance.

VERIFICATION: Prior to construction mobilization, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the Santa Ana Regional Water Quality Control Board or State Water Quality Control Board. Thirty (30) days prior to HBEP operation, the project owner shall submit to the CPM a

copy of the relevant plans and permits received. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the Board regarding NPDES permits in the annual compliance report.

GROUNDWATER DISCHARGE PERMIT REQUIREMENTS

SOIL&WATER-3: Prior to any groundwater dewatering, the project owner shall submit a dewatering plan to the CPM for review and approval. The dewatering plan shall include maximum daily and average daily pumping rates, and total volume expected to be pumped during dewatering, as well as the dates expected to be used for dewatering. The plan will also include estimates of drawdown that may occur at the adjacent marsh land, water levels that would trigger mitigation such as changes in pumping or use of alternative dewatering methods, discussion of methods that would be used and under what circumstances they would be implemented

Discharge of dewatering water shall comply with the Santa Ana Regional Water Quality Control Board (RWQCB) and State Water Resources Control Board regulatory requirements. The project owner shall submit a Report of Waste Discharge (RWD) to the compliance project manager (CPM) and RWQCB for determination of which regulatory waiver or permit applies to the proposed discharges. The project owner shall pay all necessary fees for filing and review of the RWD and all other related fees. Checks for such fees shall be submitted to the RWQCB and shall be payable to the State Water Resources Control Board. The project owner shall ensure compliance with the provisions of the waiver or permit applicable to the discharge. Where the regulatory requirements are not applied pursuant to a National Pollutant Discharge Elimination System permit, it is the Commission's intent is that the requirements of the applicable waiver or permit be enforceable by both the Commission and the RWQCB. In furtherance of that objective, the Commission hereby delegates the enforcement of the waiver or permit requirements, and associated monitoring, inspection, and annual fee collection authority, to the RWQCB. Accordingly, the Commission and the RWQCB shall confer with each other and coordinate, as needed, in the enforcement of the requirements.

VERIFICATION: At least ninety (90) days prior to dewatering, the project owner shall submit a dewatering plan to the CPM for review and approval. The project owner shall

provide a report on the dewatering daily average and maximum rate and total daily volumes in each monthly compliance report when dewatering occurs. The report will also include data from the monitoring program implemented to ensure there are no offsite impacts.

At least 30 days prior to any planned dewatering water discharge, the project owner shall submit a RWD to the RWQCB to obtain the appropriate waiver or permit.

The project owner shall submit a copy of any correspondence between the project owner and the RWQCB regarding the waiver or permit and all related reports to the CPM within 10 days of correspondence receipt or submittal.

NPDES INDUSTRIAL PERMIT REQUIREMENTS

SOIL&WATER-4: Prior to mobilization for construction, the project owner shall obtain a National Pollutant Discharge Elimination System permit for industrial waste and stormwater discharge to the Pacific Ocean. The project owner shall discharge to the same outfall currently utilized by the Huntington Beach Generating Station under the requirements of Order No. R8-2010-0062, NPDES No. CA0001163. The project owner shall provide a copy of all permit documentation sent to the Santa Ana or State Water Board to the CPM and notify the CPM in writing of any reported non-compliance.

VERIFICATION: Prior to construction mobilization, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the Santa Ana or State Water Board. Thirty (30) days prior to HBEP operation, the project owner shall submit to the CPM a copy of the Industrial SWPPP. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the Board regarding NPDES permits in the annual compliance report.

WATER AND SEWER CONNECTIONS

SOIL&WATER-5: The project owner shall pay the city of Huntington Beach all fees normally associated with industrial connections to the city's sanitary sewer or water supply system as defined in the city's code, Title 14 Water and Sewers.

VERIFICATION: Prior to the use of the city's water or sewer system the owner shall provide the CPM documentation indicating that the city has accepted the project's connections to the water and sewer systems. Fees paid to the city shall be reported in the Annual Compliance Report (ACR) for the life of the project.

WATER USE AND REPORTING

SOIL&WATER-6: Water supply for project operation and construction shall be potable water supplied from the city of Huntington Beach. Water use for operation of the Huntington Beach Energy Project shall not exceed 134 AFY; water use for construction shall not exceed 22 AFY. A monthly summary of water use shall be submitted to the CPM.

VERIFICATION: The project owner shall record HBEP operation water use on a daily basis and shall notify the CPM within 14 days upon forecast to exceed the maximum annual use as described above. Prior to exceeding the maximum use, the owner shall provide a plan to modify operations.

The project owner shall record HBEP construction water use on a daily basis and shall notify the CPM within 14 days upon forecast to exceed the maximum annual use of 22 AFY of potable water. Prior to exceeding the maximum use, the owner shall provide a plan to modify construction practices or offset excess water use.

The project owner shall submit a water use summary report to the CPM monthly during construction and annually in the ACR during operations for the life of the project. The annual report shall include calculated monthly range, monthly average, daily maximum within each month and annual use by the project in both gallons per minute and acre-feet. After the first year and for subsequent years, this information shall also include the yearly range and yearly average potable water used by the project.

WATER METERING

SOIL&WATER-7: Prior to the use of a water source during commercial operation, 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 volume(s) of water supplied to the HBEP from the water source. Those metering devices shall be operational for the life of the project and must be able to record the volume from each source separately.

VERIFICATION: At least thirty (30) days prior to use of any water source for HBEP operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the ACR.

CULTURAL RESOURCES

CUL-1 APPOINTMENT AND QUALIFICATIONS OF CULTURAL RESOURCES SPECIALIST (CRS)

A. CULTURAL RESOURCE SPECIALIST

1. Appointment and Qualifications

The project owner shall assign at least one Cultural Resources Specialist (CRS) to the project. The project owner shall submit the resume of the proposed CRS, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for review and approval.

The CRS and alternate CRS(s) shall include have training and background that conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS and alternate CRS(s) shall have the following qualifications:

1. A background in anthropology, archaeology, history, architectural history, or a related field;
2. At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;
3. At least one year of field experience in California; and
4. At least three years of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

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.

The project owner may replace the CRS by submitting the required resume, references and contact information of the proposed alternate to the CPM.

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2. Duties of Cultural Resources Specialist

The CRS shall manage all cultural resource monitoring, mitigation, curation, and reporting activities, and any post-certification cultural resource activities (as defined above), unless management of these is otherwise provided for in accordance with the cultural resource conditions of certification (conditions). The CRS shall serve as the primary point of contact on all cultural resource matters for the Energy Commission. The CRS may elect to obtain the services of Cultural Resource Monitors (CRMs), Native American Monitors (NAMs), and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner.

After all ground disturbances is completed and the CRS has fulfilled all responsibilities specified in these cultural resources conditions, the project owner may discharge the CRS, after receiving approval from the CPM.

The Conditions of Certification described in this subsection of the FSA shall continue to apply during operation of the proposed power plant.

B. CULTURAL RESOURCES MONITORS

1. Appointment and Qualifications

The project owner may assign Cultural Resources Monitors (CRMs). CRMs shall have the following qualifications:

1. B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field; and one year of archaeological field experience in California; or
2. A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years of archaeological field experience 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 archaeological field experience in California.

C. NATIVE AMERICAN MONITORS

1. Appointment and Qualifications:

If required pursuant to Condition of Certification **CUL-6**, the project owner shall obtain the services of qualified Native American Monitors (NAMs). Preference in selecting NAMs shall be given to Native Americans with:

1. traditional ties to the area to be monitored, and
2. the highest qualifications as described by the Native American Heritage Commission (NAHC) document entitled: *Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites* (NAHC 2005).

VERIFICATION: The project owner shall submit the specified information at least 75 days prior to the start of (1) ground disturbance (as defined in the Compliance Conditions section); (2) post-certification cultural resources activities (including, but not limited to, “survey”, “in-field data recording,” “surface collection,” “testing,” “data recovery” or “geoarchaeology”); or (3) site preparation or subsurface soil work during pre-construction activities or site mobilization², the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRS.

The project owner may replace a CRS by submitting the required resume, references and contact information to the CPM at least ten working days prior to the termination or release of the then-current CRS. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration.

At least 20 days prior to Cultural Resources Ground Disturbances, the CRS shall provide proof of qualifications for any anticipated CRMs and additional specialists for the project to the CPM.

At least 5 days prior to additional CRMs or NAMs beginning on-site duties during the project, the CRS shall review the qualifications of the proposed CRMs or NAMs and

² For purposes of the Conditions of Certification for Cultural Resources, we will refer to these activities as “Cultural Resources Ground Disturbances”.

send approval letters to the CPM, identifying the monitors and attesting to their qualifications.

At least 10 days prior to any technical specialists beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of construction-related ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.

No Cultural Resources Ground Disturbances shall occur prior to CPM approval of the CRS and alternates, unless such activities are specifically approved by the CPM.

CUL-2 INFORMATION TO BE PROVIDED TO CRS

Prior to the start of Cultural Resources Ground Disturbances , the project owner shall provide the CRS with copies of the AFC, data responses, confidential cultural resources reports, all supplements, the Energy Commission staff's cultural resources FSA, and the cultural resources Conditions of Certification from the Final Decision for the project if the CRS has not previously worked on the project . The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:24,000 and 1 inch = 200 feet, respectively) for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

Maps shall include any NRHP/CRHR-eligible historic built environment resources identified in the FSA.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

The project owner shall provide the documents described in the first paragraph of this condition to new CRSs in the event that the approved CRS is terminated or resigns.

1. At least 40 days prior to the start of ground disturbance, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, and Final Commission Decision have been provided to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.
2. 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 revised maps and drawings for the changes to the CRS and CPM.
3. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.
4. Weekly, during ground disturbance, a schedule of the next week's anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.
6. If a new CRS is approved by the CPM as provided for in CUL-1, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, Final Commission Decision, and maps and

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drawings have been provided to the new CRS within 10 days of such approval.

CUL-3 CULTURAL RESOURCES MITIGATION AND MONITORING PLAN (CRMMP)

Prior to the start of Cultural Resources Ground Disturbances, the project owner shall submit the Cultural Resources Mitigation and Monitoring Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall follow the content and organization of the draft model CRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall identify measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM. The CRMMP shall be designated as a confidential document if the location(s) of cultural resources are described or mapped.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. The following statement included in the 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. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources conditions of certification from the Commission Decision are contained in Appendix A."
2. A proposed general research design that includes a discussion of archaeological research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design.

The research design shall specify that the preferred treatment strategy for any buried archaeological deposits is avoidance. A specific mitigation plan shall be prepared for any unavoidable impacts to any CRHR-eligible (as determined by the CPM) resources. A prescriptive treatment plan may be included in the CRMMP for limited data types.

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project.
4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.
6. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related effects.
7. A statement that all encountered cultural resources over 50 years old shall be recorded on DPR 523 forms and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's (SHRC) *Guidelines for the Curation of Archaeological Collections* (SHRC 1993), into a retrievable storage collection in a public repository or museum.
8. A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during

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cultural resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.

9. A statement demonstrating when and how the project owner will comply with Health and Human Safety Code, section 7050.5(b) and Public Resources Code, section 5097.98(b) and (e), including the statement that the project owner will notify the CPM and the NAHC of the discovery of human remains.
10. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during ground disturbance and cannot be treated prescriptively.
11. A description of the contents, format, and review and approval process of the final cultural resources report (CRR), which shall be prepared according to *Archaeological Resource Management Report (ARMR)* guidelines.
12. Upon approval of the CRS proposed by the project owner, the CPM will provide to the project owner an electronic copy of the draft model CRMMP for the CRS.
13. At least 30 days prior to the start of Cultural Resources Ground Disturbances, the project owner shall submit the CRMMP to the CPM for review and approval.
14. At least 30 days prior to the start of Cultural Resources Ground Disturbances, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, and data recovery).
15. Within 90 days after completion of Cultural Resources Ground Disturbances (including landscaping), if cultural materials requiring curation were generated or collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from a curation facility that meets the standards stated in SHRC (1993), to accept the cultural materials from this project.

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Any agreements concerning curation will be retained and available for audit for the life of the project.

CUL-4 FINAL CULTURAL RESOURCES REPORT (CRR)

The project owner shall submit the final cultural resources report (CRR) to the CPM for approval. The final CRR shall be written by, or under the direction of, the CRS and shall be provided in the ARMR format. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. The final CRR shall be a confidential document if it describes or maps the location(s) of cultural resources. All survey reports, DPR 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) shall be included as appendices to the final CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval.

VERIFICATION:

1. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.
2. Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.
3. Within 10 days after CPM approval of the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the State Historic Preservation Officer, the CHRIS, the curating institution, if archaeological materials were collected, and to the tribal chairpersons of any Native American groups requesting copies of project-related reports.

CUL-5 CULTURAL RESOURCES WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to and for the duration of Cultural Resources Ground Disturbances, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The cultural resources part of this 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 is encouraged to include a Native American presenter in the training to contribute the Native American perspective on archaeological and ethnographic resources. During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.

VERIFICATION: The training shall include:

1. A discussion of applicable laws and penalties under law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
6. Instruction that employees, if the CRS, alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural resources discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

7. An informational brochure that identifies reporting procedures in the event of a discovery;
8. An acknowledgement form signed by each worker indicating that they have received the training; and
9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.
10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.
11. At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the cultural resources WEAP training program draft text and/or training video, including Native American participation, and graphics and the informational brochure to the CPM for review and approval.
12. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.
13. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 UNDISCOVERED CULTURAL RESOURCES

The project owner shall ensure that a CRS, alternate CRS, or CRMs shall be on site for any Cultural Resources Ground Disturbance that extends into the initial one-third of any previously undisturbed area (that is, into native soils, as described in this Decision). If any resources are found, a CRS, alternate CRS, or CRMs shall remain on site during any remaining Cultural Resources Ground Disturbances into previously undisturbed areas. If no resources are found, a CRS, alternate CRS, or CRMs shall only be available for consultation.

Only Cultural Resources Ground Disturbances that occur in the following areas shall be subject to this Condition of Certification:

- Block 1 STG foundation
- Block 1, two generator step-up transformers west of gas compression building

- Block 1 gas compression building foundation
- Relocated gas metering station
- Ammonia tank spill containment basin
- Ammonia tank refilling station
- Perimeter grounding cable
- Grounding rods
- No monitoring shall be required for the following project components:
- Block 2 CCGT/HRSG foundation slab
- Block 2, two easternmost transformer foundations
- Block 2 STG foundation
- Block 2 ACC pile caps

No monitoring shall be required for the following project components:

- Block 2 CCGT/HRSG foundation slab
- Block 2, easternmost transformer foundations
- Block 2, STG foundation
- Block 2 ACC pile caps

Prior to the start of Cultural Resources Ground Disturbances, the project owner shall notify the CPM and all interested Native Americans of the date on which ground disturbance will commence. Archaeological monitoring for the project shall be required during the ground-disturbing activities only as described above. The project owner is not required to monitor construction of other project components (that is, those not listed immediately above) unless the CRS or CPM determine that observable conditions in the field warrant monitoring. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than 50 feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

In the event that the CRS believes that the required number of monitors is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the number of monitors shall be provided to the

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CPM for review and approval prior to any change in the number of monitors.

The project owner shall obtain the services of one or more NAMs to monitor construction-related ground disturbance in areas where Native American artifacts have been discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the NAHC. Preference in selecting an NAM shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified NAM are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow construction-related ground disturbance to proceed without an NAM.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered. On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the conditions and/or applicable LORS. The daily monitoring logs shall at a minimum include the following:

- First and last name of the CRM and any accompanying NAM.
- Time in and out.
- Weather. Specify if weather conditions led to work stoppages.
- Work location (project component). Provide specifics—e.g., power block, landscaping.
- Proximity to site location. Specify if work conducted within 1000 feet of a known cultural resource.
- Work type (machine).
- Work crew (company, operator, foreman).
- Depth of excavation.
- Description of work.
- Stratigraphy.
- Artifacts, listed with the following identifying features:
- Field artifact #: When recording artifacts in the daily monitoring logs, the CRS shall institute a field numbering system to reduce the likelihood of repeat artifact numbers. A typical numbering system could include a project abbreviation, monitor's initials, and a set of numbers given to that monitor: e.g., HBEP-MB-123.

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- Description.
- Measurements.
- Universal Transverse Mercator coordinates.
- Whether artifacts are likely to be isolates or components of larger resources.
- Assessment of significance of any finds.
- Actions taken.
- Plan for the next work day.
- A cover sheet shall be submitted with each day's monitoring logs, and shall at a minimum include the following:
- Count and list of first and last names of all CRMs and of all NAMs for that day.
- General description (in paragraph form) of that day's overall monitoring efforts, including monitor names and locations.
- Any reasons for halting work that day.
- Count and list of all artifacts found that day: include artifact #, location (i.e., grading in Unit X), measurements, UTM's, and very brief description (i.e., historic can, granitic biface, quartzite flake).
- Whether any artifacts were found out of context (i.e., in fill, caisson drilling, flood debris, spoils pile).

Copies of the daily monitoring logs and cover sheets shall be provided by email from the CRS to the CPM, as follows:

- Each day's monitoring logs and cover sheet shall be merged into one PDF document
- The PDF title and headings, and emails shall clearly indicate the date of the applicable monitoring logs.
- PDFs for any revised or resubmitted versions shall use the word "revised" in the title.

Daily and/or weekly maps shall be submitted along with the monitoring logs as follows:

- The CRS shall provide daily and/or weekly maps of artifacts at the request of the CPM. A map shall also be provided if artifact locations show complexity, high density, or other unique considerations.

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- Maps shall include labeled artifacts, project boundaries, previously recorded sites and isolates, aerial imagery background, and appropriate scales.

From the daily monitoring logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

- The Cultural Resources section of the MCR shall be prepared in coordination with the CRS, and shall include a monthly summary report of cultural resources-related monitoring. The summary shall:
 - List the number of CRMs and NAMs on a daily basis, as well as provide monthly monitoring-day totals.
 - Give an overview of cultural resource monitoring work for that month, and discuss any issues that arose.
 - Describe fulfillment of requirements of each cultural mitigation measure.
 - Summarize the confidential appendix to the MCR, without disclosing any specific confidential details.
 - Include the artifact concordance table (as discussed under the next bullet point), but with removal of UTM numbers.
 - Each MCR, prepared under supervision of the CRS, shall be accompanied by a confidential appendix that contains completed DPR 523A forms for all artifacts recorded or collected in that month. For any artifact without a corresponding DPR form, the CRS shall specify why the DPR form is not applicable or pending (i.e. as part of a larger site update).
 - A concordance table that matches field artifact numbers with the artifact numbers used in the DPR forms shall be included. The sortable table shall contain each artifact's date of collection and UTM numbers, and note if an artifact has been deaccessioned or otherwise does not have a corresponding DPR form. Any post-field log recordation changes to artifact numbers shall also be noted.
 - DPR forms shall be submitted as one combined PDF.
 - The PDF shall organize DPR forms by site and/or artifact number.
 - The PDF shall include an index and bookmarks.

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- If artifacts from a given site location (in close proximity of each other or an existing site) are collected month after month, and if agreed upon with the CPM, a final updated DPR for the site may be submitted at the completion of monitoring. The monthly concordance table shall note that the DPR form for the included artifacts is pending.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The CRS, at his or her discretion, or at the request of the CPM, 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.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM.

The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

1. At least 30 days prior to the start of ground disturbance, the project owner will notify all Native Americans with whom Energy Commission staff communicated during the project review of the date on which the project's ground disturbance will begin.

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2. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log and information to be included in the cover sheet for the daily monitoring logs
3. While monitoring is on-going, the project owner shall submit each day's monitoring logs and cover sheet merged into one PDF document by email within 24 hours.
4. The CRS and/or project owner shall notify the CPM of any incidents of non-compliance with the Conditions and/or applicable LORS by telephone or email within 24 hours
5. The CRS shall provide daily maps of artifacts along with the daily monitoring logs if more than 10 artifacts are found per day, or as requested by the CPM.
6. The CRS shall provide weekly maps of artifacts if there more than 50 artifacts are found per week, or as requested by the CPM. The map shall be submitted within two business days after the end of each week.
7. If resources are discovered as outlined in this Condition of Certification, the project owner shall notify all local Native American groups of the discovery of the resource within 48 hours of its discovery. If resources are discovered as outlined in this Condition of Certification, the project owner shall appoint one or more NAMs. Within 15 days of receiving from a local Native American group a request that a NAM be employed, the project owner shall submit a copy of the request and a copy of a response letter to the CPM. The project owner shall include a copy of this Condition of Certification in any response letter.
8. While monitoring is on-going, the project owner shall submit monthly MCRs and accompanying weekly summary reports. The project owner shall attach any new DPR 523A forms, under confidential cover, completed for finds treated prescriptively, as specified in the CRMMP.

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9. Final updated DPRs with sites (where artifacts are collected month after month) can be submitted at the completion of monitoring, as agreed upon with the CPM.
10. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.
11. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.
12. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-7 POWERS OF CRS

The CRS shall have the authority to halt ground disturbance in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CRS), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. If the discovery includes human remains, the project owner shall comply with the requirements of Health and Human Safety Code, section 7050.5(b) and notify the CPM and the NAHC of the discovery of human remains. No action with respect to the disposition of human remains of Native American origin shall be initiated without direction from the CPM. Monitoring, including Native American monitoring, and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities on other areas of the project site, while the halting or

redirection of ground disturbance in the vicinity of the discovery shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday, and provided a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR/NRHP eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR/NRHP eligibility has been made.
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary Record" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary Record" form shall include a recommendation on the CRHR/NRHP eligibility of the discovery. The project owner shall submit completed forms to the CPM.
4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.
5. Ground disturbance may resume only with the approval of the CPM.
6. 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 ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the

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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.

7. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.
8. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery, and the CRS must inform the CPM when the notifications are complete.
9. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.
10. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-8 FILL SOILS

If fill soils must be acquired from a non-commercial borrow site or disposed of to a non-commercial disposal site, the CRS shall survey the borrow or disposal site(s) for cultural resources and record on DPR 523 forms any that are identified. This survey shall not be required if there is a survey of the location that is less than five years old and if the site is approved by the CPM.

When any non –commercial borrow site or non-commercial disposal site survey is completed, the CRS shall convey the results and recommendations for further action to the project owner and the CPM. The CPM shall determine, in his/her sole discretion, whether significant archaeological resources that cannot be avoided are present at the borrow or disposal site. If the CPM determines that significant archaeological resources that cannot be avoided are present at the borrow or disposal site, the project owner must either select another borrow or disposal site or implement **CUL-7** prior to any use of the site. The CRS shall report on the methods and results of these surveys in the final CRR.

1. As soon as the project owner knows that a non-commercial borrow site and/or disposal site will be used, he/she shall notify the CRS and CPM and provide documentation of previous archaeological survey, if any, dating within the past five years, for CPM approval.
2. In the absence of documentation of recent archaeological survey, at least 30 days prior to any soil borrow or disposal activities on the non-commercial borrow and/or disposal sites, the CRS shall survey the site(s) for archaeological resources. The CRS shall notify the project owner and the CPM of the results of the cultural resources survey, with recommendations, if any, for further action.

GEOLOGY AND PALEONTOLOGY

GEO-1 SOILS ENGINEERING REPORT REQUIRED

A Soils Engineering Report as required by Section 1803 of the California Building Code (CBC 2013), shall specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity; liquefaction; dynamic compaction; compressible soils; corrosive soils; and tsunamis. In accordance with CBC 2013, the report should also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present. The project owner shall conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown effects of that dewatering. If the investigation shows that dewatering is likely to affect nearby wetlands or environmentally sensitive habitat areas, mitigation measures shall be incorporated into the final design plans required pursuant to Condition of Certification **GEN-2**.

VERIFICATION: The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for strong seismic shaking; liquefaction; dynamic compaction; settlement due to compressible soils; corrosive soils; and tsunamis, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.

GEO-2 COMPLIANCE WITH CITY OF HUNTINGTON BEACH MUNICIPAL CODE SECTION 17.04.085.

The project owner shall comply with the requirements of Huntington Beach Municipal Code Section 17.04.085 to ensure the existing and previously identified abandoned gas well on the site, and any additional wells that may be identified during grading and construction, are appropriately mitigated and made safe. The project owner shall consult with the Fire Chief to determine whether any of the following requirements of the municipal code apply, and shall submit the recommendations of the Fire Chief to the CPM for review and approval.

As required, the permit shall specifically include:

1. a site soil testing plan capable of detecting the presence of methane in the near surface soils,
2. field testing as specified in the approved plan,
3. laboratory test data,
4. pre-site disturbance mitigation if high concentrations of methane are discovered during testing,
5. site audits, and
6. area well documentation and review.

In accordance with City Specification No, 429, the permit shall also include designs for recommended methane control systems necessary to mitigate these potential hazards, if present.

VERIFICATION: The project owner shall include in the application for a Methane District Building Permit a copy of the construction project Site Plan Review approved by the California Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR) that is on file with the Huntington Beach Fire Department PetroChem section. A copy of the site plan review, application for the Methane District Building Permit and any comments by Huntington Beach Fire Chief are to be provided to the CPM at least 30 days prior to initiation of grading.

PAL-1 APPOINTMENT AND QUALIFICATIONS OF PALEONTOLOGICAL RESOURCE SPECIALIST (PRS)

The project owner shall provide at least one paleontological resource specialist (PRS) to the project. The project owner shall submit the resume of the proposed PRS, with at least three references and contact information, to the Energy Commission compliance project manager (CPM) for review and approval.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontological resources monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by the Society of Vertebrate Paleontology (SVP 2010). 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 or combination of the following qualifications approved by the CPM:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or

Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

The project owner may replace the PRS by submitting the required resume, references and contact information of the proposed alternate to the CPM.

VERIFICATION: At least 60 days prior to ground disturbance, the project owner shall submit the resume of the proposed PRS, with at least three references and contact information, to the CPM for review and approval.

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. The letter shall state

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that the identified monitors meet the minimum qualifications for paleontological resource monitoring as required by this condition of certification. 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 for approval no later than one week prior to the monitor's beginning on-site duties.

The project owner may replace a PRS by submitting the required resume, references and contact information to the CPM at least ten working days prior to the termination or release of the then-current CRS. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration.

PAL-2 DOCUMENTS PROVIDED TO THE PRS

The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences 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 the following week, until ground disturbance is completed.

VERIFICATION: At least 30 days prior to ground disturbance, At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 PALEONTOLOGICAL RESOURCES MONITORING AND MITIGATION PLAN (PRMMP)

The project owner shall ensure that the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) and submits the PRMMP to the CPM for review and approval. 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. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and 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 2010) 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 PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and these 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 sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place in which geologic units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations;
6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and (d) 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 meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation, and how they will be met, and the name and phone number of the contact person at the institution; and
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. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

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PAL-4

PREPARATION OF WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to ground disturbance the project owner and the PRS shall prepare a CPM-approved Worker Environmental Awareness Program (WEAP).

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize paleontologic resources and identify procedures they should follow to ensure there are no impacts to sensitive paleontologic resources. The WEAP shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to stop or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall also submit the training script and, if the project owner is planning to use a video for training, a copy of the training video with the set of reporting procedures for workers to follow that will be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontologic resources.

1. At least 30 days prior to ground disturbance, the project owner shall submit to the CPM for review and comment the draft WEAP, including the brochure and sticker. The submittal shall also include

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a draft training script and, if the project owner is planning to use a video for training, a copy of the training video with the set of reporting procedures for workers to follow.

2. At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final WEAP and training script.

PAL-5 WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP) TRAINING

No worker shall excavate or perform any ground disturbance activity prior to receiving CPM-approved WEAP training by the PRS, unless specifically approved by the CPM.

Prior to project kick-off and ground disturbance the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. Following project kick-off, 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 other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

VERIFICATION: 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 and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

If the project owner requests an alternate paleontological WEAP 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 WEAP training prior to CPM authorization.

PAL-6 DUTIES OF THE PRS AND PRM

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 potential 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 stop 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 from the accepted schedule 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 be 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) keep a daily monitoring log 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 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 event, when construction has been stopped because of a paleontological find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities that will be included in each 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, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a

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list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or 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 that 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-7 PALEONTOLOGICAL RESOURCES REPORT (PRR)

The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; and the PRS' description of sensitivity and significance of those resources.

VERIFICATION: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

PAL-8 DISPOSITION OF FOSSIL MATERIAL

The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated as a result of paleontological mitigation. The project owner shall also provide the curator with

documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

VERIFICATION: Within 60 days after the submittal of the PRR, the project owner shall submit documentation to the CPM showing fees have been paid for curation and the owner relinquishes control and ownership of all fossil material.

LAND USE

LAND-1 The project owner shall comply with Appendix B(g)(3)(c) of the Siting Regulations (Title 20, California Code of Regulations) by ensuring that the HBEP site, excluding linear and temporary lay down or staging area, as shown in Figure/Table/Whatnot, will be located on a single legal parcel.

VERIFICATION: At least 30 days prior to construction of the first power block, the project owner shall submit evidence to the compliance project manager (CPM), indicating approval of a Lot Line Adjustment by the city of Huntington Beach, establishing a single parcel for the 28.6 acre HBEP site. The submittal to the CPM shall include evidence of compliance with all conditions and requirements associated with the approval of the Lot Line Adjustment by the city.

TRAFFIC & TRANSPORTATION

ROADWAY USE PERMITS AND REGULATIONS

TRANS-1 The project owner shall apply to each jurisdiction along the route of travel from the Port of Long Beach to the AGS and/or project site and shall comply with all conditions imposed by the California Department of Transportation (Caltrans) and other relevant jurisdictions, including, but not limited to, Orange County, Los Angeles County, and the cities of Huntington Beach, Long Beach, and Seal Beach, on vehicle sizes and weights, driver licensing, and truck routes.

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

RESTORATION OF ALL PUBLIC ROADS, EASEMENTS, AND RIGHTS-OF-WAY

TRANS-2 The project owner shall restore all public rights-of-way, including but not limited to streets, highways, roads, easements, and intersections, that have been damaged due to project-related construction and demolition activities. Restoration of significant damage which could cause hazards (such as potholes) must take place immediately after the damage has occurred. The restoration shall be completed in a timely manner to the road's original condition in compliance with the applicable jurisdiction's standards.

VERIFICATION: Prior to the start of site mobilization, the project owner shall photograph or videotape all public rights-of-way segments that may be affected by project-related traffic. The project owner shall provide the photograph or videotape to the CPM and the affected local jurisdiction(s). The project owner shall coordinate with each jurisdiction regarding planned improvement activities on affected public rights-of-way to obtain postponement and/or coordination of any concurrent construction-related activities that cannot be postponed.

If damage to public roads, easements, or rights-of-way occurs is detected, the project owner shall notify the CPM and shall enter into an agreement with each affected local jurisdiction for implementing a roadway repair/rehabilitation program, including any necessary repairs before the end of construction. At a minimum, roads damaged by

construction and demolition activities shall be repaired to a structural condition equal to that which existed prior to construction and demolition activity. Following completion of any public right-of-way repairs, the project owner shall provide proof to the CPM from each affected jurisdiction of its satisfaction with the repairs.

TRAFFIC CONTROL PLAN

TRANS-3 The project owner shall prepare and implement a Traffic Control Plan (TCP) for the HBEP's construction and operations traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules and designated workforce and delivery routes. The project owner shall consult with Caltrans and all applicable local jurisdictions, including, but not limited to, Orange County, Los Angeles County, and the cities of Huntington Beach, Long Beach, and Seal Beach, in the preparation and implementation of the Traffic Control Plan (TCP). The project owner shall submit the proposed TCP to Caltrans and applicable local jurisdictions in sufficient time for review and comment, and to the CPM for review and approval prior to the proposed start of demolition and construction and implementation of the plan.

The Traffic Control Plan (TCP) shall include:

- Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction related traffic flow,
- Placement of necessary signage, lighting, and traffic control devices at the project construction site and lay-down areas;
- A heavy-haul plan addressing the transport and delivery of heavy and oversized loads requiring permits from the California Department of Transportation (Caltrans), other state or federal agencies, and/or the affected local jurisdictions including Los Angeles county, Orange county, city of Long Beach, city of Seal Beach, and city of Huntington Beach;
- Location and details of construction along affected roadways at night, where permitted;
- Temporary closure of travel lanes or disruptions to street segments and intersections during construction activities;
- Traffic diversion plans (in coordination all applicable local jurisdictions and Caltrans) to ensure access during temporary lane/road closures;

- Access to residential and/or commercial property located near construction work and truck traffic routes;
- Assurance of access for emergency vehicles to the project site;
- Advance notification to residents, businesses, emergency providers, and hospitals that would be affected when roads may be partially or completely closed;
- Identification of safety procedures for exiting and entering the site access gate;
- Parking/Staging Plan for all phases of project construction and operation to require all project-related parking to be on-site or in designated off-site parking areas.

VERIFICATION: At least 60 calendar days prior to the start of construction, the project owner shall submit the TCP to the applicable agencies for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the agencies requesting review and comment.

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

ENCROACHMENT INTO PUBLIC RIGHTS-OF-WAY

TRANS-4 Prior to any ground disturbance, improvements, or obstruction of traffic within any public road, easement, or right-of-way, the project owner or its contractor(s) shall coordinate with all relevant jurisdictions, including, but not limited to, Orange County, Los Angeles County, and the cities of Huntington Beach, Long Beach, and Seal Beach, and Caltrans, to obtain all required encroachment permits and comply with all applicable regulations.

VERIFICATION: At least 10 days prior to ground disturbance or interruption of traffic in or along any public road, easement, or right-of-way, the project owner shall provide copies of all permit(s) received from Caltrans or any other affected jurisdiction/s to the CPM. In addition, the project owner shall retain copies of the issued/approved permit(s) and supporting documentation in its compliance file for a minimum of 6 months after the start of commercial operation.

HAZARDOUS MATERIALS

TRANS-5 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol, Caltrans and all other relevant jurisdictions for the transport of hazardous materials.

VERIFICATION: The project owner shall include in the MCRs copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances during that reporting period.

OBSTRUCTION MARKING AND LIGHTING

TRANS-6 The project owner shall install blinking obstruction marking and lighting on any construction equipment that exceeds 200 feet in height in accordance with FAA requirements, as expressed in the following documents:

- FAA Advisory Circular 70/7460-1K
- FAA Safety Alert for Operators (SAFO) 09007.
- Lighting shall be operational 24 hours a day, 7 days a week for the duration of project construction. Upgrades to the required lighting configurations, types, location, or duration shall be implemented consistent with any changes to FAA obstruction marking and lighting requirements.

VERIFICATION: At least 60 days prior to the presence of any construction equipment which exceeds 200 feet in height, the project owner shall submit to the CPM for approval final design plans for construction equipment depicting the required air traffic obstruction marking and lighting.

At least 60 days prior to plant operation, the project owner shall install of permanent obstruction marking and lighting consistent with FAA requirements and shall inform the CPM in writing within 10 days of installation. The lighting shall be inspected and approved by the CPM (or designated inspector) within 30 days of installation.

At least 10 days prior to installation of permanent obstruction marking and lighting, the project owner shall provide the CBO and CPM proof in writing of approval by the FAA for all structure marking and lighting.

PILOT NOTIFICATION AND AWARENESS

TRANS-7 The project owner shall initiate the following actions to ensure pilots are aware of the project location and potential hazards to aviation:

- Submit a letter to the FAA requesting a Notice to Airmen (NOTAM) be issued advising pilots of the location of the HBEP and recommending avoidance of overflight of the project site below 1,740 feet AGL. The letter should also request that the NOTAM be maintained in active status until all navigational charts and Airport Facility Directories (AFDs) have been updated.
- Submit a letter to the FAA requesting a power plant depiction symbol be placed at the HBEP site location on the San Diego Sectional Chart with a notice to “avoid overflight below 1,740 feet AGL”.
- Request that Southern California TRACON submit aerodrome remarks describing the location of the HBEP plant and advising against direct overflight below 1,740 feet AGL to the:
 - FAA AeroNav Services, formerly the FAA National Aeronautical Charting Office (Airport/Facility Directory)
 - Jeppesen Sanderson Inc. (JeppGuide Airport Directory, Western Region)
 - Airguide Publications (Flight Guide, Western States)

VERIFICATION: Within 30 days following the start of construction, the project owner shall submit draft language for the letters of request to the FAA (including Southern California TRACON) to the CPM for review and approval.

At least 60 days prior to the start of operations, the project owner shall submit the required letters of request to the FAA and request that Southern California TRACON submit aerodrome remarks to the listed agencies. The project owner shall submit copies of these requests to the CPM. A copy of any resulting correspondence shall be submitted to the CPM within 10 days of receipt.

If the project owner does not receive a response from any of the above agencies within 45 days of the request (or by 15 days prior to the start of operations) the project owner shall follow up with a letter to the respective agency/ies to confirm implementation of the request. A copy of any resulting correspondence shall be submitted to the CPM within 10 days of receipt.

The project owner shall contact the CPM within 72 hours if notified that any or all of the requested notices cannot be implemented. Should this occur, the project owner shall appeal such a determination, consistent with any established appeal process and in consultation with the CPM. A final decision from the jurisdictional agency denying the request, as a result of the appeal process, shall release the project owner from any

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additional action related to that request and shall be deemed compliance with that portion of this condition of certification.

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SOCIOECONOMICS

SOCIO-1 The project owner shall pay the one-time statutory school facility development fees to the Huntington Beach Union High School District as required by Education Code Section 17620.

VERIFICATION: At least 30 days prior to the start of project construction, the project owner shall provide to the Compliance Project Manager (CPM) proof of payment to the Huntington Beach Union High School District of the statutory development fee.

SOCIO-2 The project owner shall pay the following one-time Development Impact Fees to the City of Huntington Beach as required by Chapter 17 of the Huntington Beach municipal code:

- Police Facilities Development Impact Fees
- Parkland Acquisition and Park Facilities Development Impact Fees

VERIFICATION: At least 90 days prior to the start of commercial operation, the project owner shall confer with the CEC's assigned Chief Building Official (CBO) for HBEP to calculate the applicable one-time development impact fee(s) as set forth in Chapter 17 of the Huntington Beach Municipal Code. At least 30 days prior to commercial operation, the project owner shall provide to the Compliance Project Manager (CPM) proof of payment to the city of Huntington Beach of the required Development Impact Fee(s).

NOISE AND VIBRATION

PUBLIC NOTIFICATION PROCESS

NOISE-1 Prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site and one-half mile of the linear facilities, by mail or by 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 a 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, or a similarly effective telephone number, shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

VERIFICATION: At least 15 days 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. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide 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 legitimate project-related noise complaints³. 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 project-related noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;

³ A legitimate complaint refers to a complaint about noise that is caused by the HBEP project as opposed to another source (as verified by the CPM). A legitimate complaint constitutes a violation by the project of any noise condition of certification (as confirmed by the CPM), which is documented by an individual or entity affected by such noise.

- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that states that the noise problem has been resolved to the complainant's satisfaction.

VERIFICATION: Within five days of receiving a legitimate noise complaint⁴, the project owner shall file with the CPM a Noise Complaint Resolution Form, shown below, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three business-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

EMPLOYEE NOISE CONTROL PROGRAM

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 (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.

VERIFICATION: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. 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 the operation of the project will not cause the noise levels due to normal steady-state plant operation alone, to exceed an hourly average of 61 dBA L₅₀ measured at or near monitoring location M2.

Also, the project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the

⁴ For the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**.

project will not cause the noise levels due to plant operation alone, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{90} measured at or near monitoring location M3 and an average of 49 dBA L_{90} measured at or near monitoring location M4.

No new pure-tone components (as defined in **Noise Table A1**, below) shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints⁵.

When the project first achieves a sustained output of 85 percent or greater of its rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring locations M2, M3 and M4, or at a closer location acceptable to the CPM and include L_{eq} and L_{90} readings. This survey shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

If the results from the noise survey indicate that the power plant noise at the affected receptor sites exceed the above values, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to reduce the pure tones to a level that complies with **Noise Table A1**, below.

VERIFICATION: The above noise survey shall be conducted in two parts. Part one shall take place within 90 days of Power Block 1 (PB-1) first achieving a sustained

⁵ For the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**.

output of 85 percent or greater of its rated capacity. Part 2 of this survey shall be performed within 90 days of Power Block 2 (PB-2) first achieving 85 percent or greater of its rated capacity and shall include the combined operation of PB-1 and PB-2 at 85 percent or greater of the overall plant rated capacity with all turbine generators operating. The exception to the above is that for the daytime portions of the survey only (between 7:00 a.m. and 10:00 p.m.) the above rated capacity can be 80 percent or higher rather than 85 percent or higher.

Within 15 days after completing each part, the project owner shall submit a summary report to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are implemented and 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.

OCCUPATIONAL NOISE SURVEY

NOISE-5 Following PB-1's attainment of a sustained output of 90 percent or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas in the facility. Following PB-2's attainment of a sustained output of 90 percent or greater of its rated capacity, the project owner shall repeat this survey.

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 to be employed in order to comply with the applicable California and federal regulations.

VERIFICATION: Within 30 days after completing each 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 from OSHA and Cal-OSHA.

CONSTRUCTION RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy⁶ construction work relating to any project features, including pile driving, shall be restricted to the times delineated below:

Mondays through Saturdays: 7:00 a.m. to 8:00 p.m.

Sundays and Federal Holidays: Construction not allowed

Limited construction activities may be performed outside of the above hours, with CPM approval.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and other state-required noise attenuation devices. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use (jake braking) 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.

In consultation with the CPM, construction equipment generating excessive noise⁷ shall be updated or replaced if beneficial in reducing the noise and if feasible. In addition, temporary acoustic barriers shall be installed around stationary construction noise sources if beneficial in reducing the noise and if feasible. The project owner shall reorient construction equipment, and relocate construction staging areas, when possible, to minimize the noise impact at nearest noise-sensitive receptors.

At least 15 days prior to working outside of the above hours, the project owner shall submit a statement to the CPM, specifying the time of night and the number of nights for which activities will occur, the approximate distance of activities to residential receptors, and the expected sound levels at these receptors, stating that the activities will be performed in a manner to ensure excessive noise is prohibited as much as practicable. At the same time, the project owner shall notify the residents within one mile of this work. In this notification, the project owner shall state that it will perform this activity in a

⁶ Noise that draws legitimate complaint (for the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**)

⁷ Noise that draws a legitimate complaint (for the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**)

manner to ensure excessive noise is prohibited as much as practicable. The project owner shall submit a copy of this notification to the CPM prior to the start of pile driving.

STEAM BLOW RESTRICTIONS

NOISE-7 If a traditional, high-pressure steam blow process is used the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 50 feet. The steam blows shall be conducted between 8:00 a.m. and 6:00 p.m. A new high-pressure steam blow shall not be initiated after 5:00 p.m. If a low-pressure, continuous steam blow process is used, the project owner shall submit to the CPM a description of the process, with expected noise levels and planned hours of steam blow operation.

VERIFICATION: At least 15 days prior to the first steam blow, the project owner shall notify all residents or business owners within one mile of the project site boundary. The notification may be in the form of letters, phone calls, fliers, or other effective means, as approved by the CPM. The notification shall include a description of the purpose and nature of the steam blow(s), the planned schedule, expected sound levels, and explanation that it is a one-time activity and not part of normal plant operation.

PILE DRIVING MANAGEMENT

NOISE-8 The project owner shall perform pile driving in a manner to reduce the potential for any legitimate noise complaints. The project owner shall notify the residents in the vicinity of pile driving prior to start of pile driving activities.

VERIFICATION: At least 15 days prior to first pile driving, the project owner shall submit to the CPM a description of the pile driving technique to be employed, including calculations showing its projected noise impacts at monitoring locations M2-M4.

At least 10 days prior to first production pile driving, the project owner shall notify the residents within one-half mile of the pile driving. In this notification, the project owner shall state that it will perform this activity in a manner to reduce the potential for any legitimate noise complaints, as much as practicable. The project owner shall submit a copy of this notification to the CPM prior to the start of pile driving.

NOISE COMPLAINT RESOLUTION FORM

Huntington Beach Energy Project (12-AFC-02)	
NOISE COMPLAINT LOG NUMBER _____	
Complainant's name and address: 	
Phone number: _____	
Date complaint received: _____	
Time complaint received: _____	
Nature of noise complaint: 	
Definition of problem after investigation by plant personnel: 	
Date complainant first contacted: _____	
Initial noise levels at 3 feet from noise source _____	dBA Date: _____
Initial noise levels at complainant's property: _____	dBA Date: _____
Final noise levels at 3 feet from noise source: _____	dBA Date: _____
Final noise levels at complainant's property: _____	dBA Date: _____
Description of corrective measures taken: 	
Complainant's signature: _____	Date: _____
Approximate installed cost of corrective measures: \$ _____	
Date installation completed: _____	
Date first letter sent to complainant: _____ (copy attached)	
Date final letter sent to complainant: _____ (copy attached)	
This information is certified to be correct:	
Plant Manager's Signature: _____	

(Attach additional pages and supporting documentation, as required).

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VISUAL RESOURCES

VISUAL SCREENING AND ENHANCEMENT PLAN FOR PROJECT STRUCTURES – PROJECT OPERATION

VIS-1 Prior to submitting the master drawings and master specifications list for the project to the Chief Building Official (CBO) and the Compliance Project Manager (CPM), the project owner shall prepare and submit a Visual Screening and Enhancement Plan for Project Structures (Plan) that includes methods and materials to visually screen and treat surfaces of publicly visible power plant structures. (Condition of Certification GEN-2 in the Facility Design section of the Commission Decision addresses requirements pertaining to the master drawings and master specifications list.)

The submitted Plan will include evidence of review by a licensed structural or civil engineer and an assessment of the feasibility and structural integrity of the architectural and decorative screening elements contained in the Plan. The licensed engineer's report and other comments shall be attached to the Plan. Any design changes recommended by the licensed structural or civil engineer to ensure the structural soundness and safety of the project and the architectural design elements shall be incorporated in the Plan *before* its submittal to the CPM.

The project owner shall not submit instructions for architectural screens and other structures and colors and finishes to manufacturers or vendors of project structures, or perform final field treatment on any structures, until written approval of the final Plan is received from the CPM. Modifications to the final Plan shall not occur without the CPM's approval.

The Visual Screening and Enhancement Plan for Project Structures shall be consistent with Resolution No. 2014-18 adopted by the City of Huntington Beach City Council on April 7, 2014 (TN #202084). Surface treatments for publicly visible power plant structures shall be included in the Plan. Proposed surface treatments shall minimize the potential visual effects of glare from project surfaces. Methods to visually screen and enhance the project site shall visually unify the project so that proposed architectural screening and other enhancements for one air cooled condenser are similar to or the same for the other.

The monopoles for the on-site 230-kV transmission line shall have a surface treatment that enables them to blend with the environment to the greatest extent feasible, and the finish shall appear as a matte patina. Unpainted exposed lagging and surfaces of steel structures that are visible to the public shall be embossed or otherwise treated to reduce glare.

The Plan shall meet the following minimum content requirements:

- Inventory of major project structures and buildings specifying the architectural and decorative screening structures and materials to visually screen and enhance those structures. The inventory shall specify height, length, and width or diameter for each major structure, and scale plans and elevation views shall be included in the Plan with architectural and project structures clearly identified.
- List of colors and finishes that will be applied to architectural screening structures and directly to power plant structures (e.g., paint scheme and finish types for the air cooled condenser). Proposed colors must be identified by vendor, name, and number, or according to a universal designation system.
- Electronic files and a set of print copies of 11-inch by 17-inch (or larger, if necessary) color visual simulations at life-size scale showing the architectural screening structures and surface treatments proposed for the project. Key observation point (KOP) 1, KOP 4, and KOP 5 shall be used to prepare images showing the completed Visual Screening and Enhancement Plan for Project Structures. Colors must be identified by vendor, name, and number, or according to a universal designation system.
- Schedule for completing construction of architectural and decorative screening structures and the surface treatments for all publicly visible power plant structures during the construction timeline.
- Procedure and maintenance schedule to ensure that surface treatments and architectural structures are well maintained and consistent with the approved Plan for the life of the project.

Supplement to the Visual Screening and Enhancement Plan for Project Structures. Prior to submitting instructions and orders for architectural screening materials, prefabricated project structures, and paints and other surface treatments to manufacturers or vendors of project

structures, the project owner shall submit a Supplement to the Visual Screening and Enhancement Plan for Project Structures (Supplement). The Supplement shall include color brochures, color chips, and/or physical samples showing each proposed color and finish that will be applied to architectural screening structures and directly to power plant structures. Electronic files showing proposed colors may not be submitted in place of original samples. Colors must be identified by vendor, name, and number, or according to a universal designation system.

The project owner shall meet these plan review and approval requirements:

- The submitted Visual Screening and Enhancement Plan for Project Structures shall include evidence of review by a qualified structural or civil engineer and an assessment of the feasibility and structural integrity of the architectural and decorative screening elements contained in the plan. The qualified engineer's report and other comments shall be attached to the plan.
- The Visual Screening and Enhancement Plan for Project Structures shall be submitted to the CPM for review and approval, and to the City of Huntington Beach Planning and Building Department and the Executive Director of the Coastal Commission for timely review and comment. City staff requests seven sets of plans. Any comments on the plan from the City and the Coastal Commission shall be provided to the CPM. The project owner shall not submit instructions for architectural screens and other structures and colors and finishes to manufacturers or vendors of project structures, or perform final field treatment on any structures, until written approval of the final plan is received from the CPM. Modifications to the Visual Screening and Enhancement Plan for Project Structures are prohibited without the CPM's approval.

VERIFICATION: At least 30 calendar days before submitting the master drawings and master specifications list to the CBO (in accordance with the requirements of **GEN-2**), the project owner shall submit a Visual Screening and Enhancement Plan for Project Structures to the CPM for review and approval. The project owner shall, simultaneously with the submission to the CPM, submit seven copies of the Visual Screening and Enhancement Plan to the City-of Huntington Beach Planning and Building Department

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and one copy to the Executive Director of the Coastal Commission for review and comment.

At least 60 calendar days before submitting instructions or orders for architectural screening, prefabricated project structures, and paints and other surface treatment materials, the project owner shall submit a Supplement to the Visual Screening and Enhancement Plan for Project Structures simultaneously to the CPM for review and approval, and to the City's Planning and Building Department for review and comment. City staff requires seven copies of the Supplement text and one set of physical samples of paint colors and other surface treatments.

If the CPM determines that the Plan and/or its Supplement require revisions, the project owner shall provide an updated version with the specified revision(s) for review and approval by the CPM. Copies of the revised Plan and/or the Supplement (if either is required) shall be provided to the City for review and comment. City staff requires seven copies of the revised Plan or Supplement. A copy of the revised Plan (if it is required) shall be provided to the Executive Director of the Coastal Commission for review and comment.

The project owner shall provide the CPM with copies of the transmittal letters submitted to the City and the Coastal Commission requesting those agencies' respective ~~timely~~ reviews of the Plan, the Supplement, and any revisions. Review comments from the City and/or the Coastal Commission must be submitted to the project owner within 30 calendar days of receiving any of the stated plans. In the absence of comments within that timeframe, the CPM shall deem the Plan, the Supplement, and any revisions acceptable to the City and/or the Coastal Commission. Those agencies' comments on the stated plans shall be provided to the CPM within 3 business days of receipt.

At least 10 calendar days before commercial operation of Power Block 1, the project owner shall notify the CPM in writing with information on 1) the status of implementing the requirements set forth in the Visual Screening and Enhancement Plan for Project Structures and 2) a schedule for completing the remaining Plan requirements during the construction timeline. These steps shall be repeated for commercial operation of Power Block 2.

The project owner shall schedule periodic site visits with the CPM to view progress on implementing the Plan. At a minimum, site visits shall be scheduled within 30 calendar days of commercial operation of Power Block 1 and again within 30 calendar days of commercial operation of Power Block 2. The Plan shall be fully implemented within 90 calendar days of completing demolition of the Huntington Beach Generating Station

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Units 1 and 2. The project owner shall verify in writing when the Plan is fully implemented and the facility is ready for inspection. The project owner shall obtain written confirmation from the CPM that the project complies with the Visual Screening and Enhancement Plan for Project Structures.

The project owner shall provide a status report regarding maintenance of the architectural screens and surface treatments in the Annual Compliance Report for the project. At a minimum, the report shall include:

- Descriptions of the condition of the architectural screening structures and treated surfaces of publicly visible structures at the power plant site.
- Descriptions of major maintenance and painting work required to maintain the original condition of architectural screening structures and treated surfaces during the reporting year.
- Electronic photographs showing the results of maintenance and painting work.

PERIMETER SCREENING AND ON-SITE LANDSCAPE AND IRRIGATION PLAN – PROJECT OPERATION

VIS-2 The project owner shall prepare and implement a Perimeter Screening and On-site Landscape and Irrigation Plan (Plan) to screen views of power plant structures. The Plan shall achieve a goal to screen and soften views of the power plant from Magnolia Marsh, the Huntington Beach Wetlands & Wildlife Care Center, the Huntington By-The-Sea Mobile Estates and RV Park, and along Newland Street, Magnolia Street, and the Pacific Coast Highway.

The Plan shall be prepared with the direct involvement of a licensed professional landscape architect familiar with local growing conditions, suitable native and non-invasive plant species for the project area, and local availability of proposed species. The licensed landscape architect's report and other comments shall be attached to the Plan. Any changes recommended by the licensed landscape architect shall be incorporated in the Perimeter Screening and On-site Landscape and Irrigation Plan *before* its submittal to the CPM for approval. The Perimeter Screening and On-site Landscape and Irrigation Plan shall comply with the landscape and irrigation requirements of the City of Huntington Beach General Plan and the Huntington Beach Zoning & Subdivision Ordinance.

The submitted Plan shall show evidence of participation by a wildlife biologist qualified to comment on tree species proposed for planting adjacent to Magnolia Marsh and confirm that those species will not introduce new opportunities for raptors to prey on special-status birds in the marsh.

Design and submittal of the Perimeter Screening and On-site Landscape and Irrigation Plan shall occur *after* completion of the project's final general arrangement/site plan to accurately show interior area constraints (e.g., paved interior site access and emergency response roads).

The Perimeter Screening and On-site Landscape and Irrigation-Plan shall include construction of an 8-foot-tall decorative masonry wall to extend along the site boundary adjacent to the Huntington Beach Wetlands & Wildlife Care Center and parking lot and along Magnolia Marsh (i.e., the southwest-west and southeast-east boundaries). All existing site perimeter chain-link fencing shall be replaced with an 8-foot-tall decorative masonry wall.

The project owner shall not purchase or order plants, landscape and irrigation supplies and materials, or construction materials for the masonry wall until written approval of the final Plan is received from the CPM. Modifications to the final Plan shall not occur without the CPM's approval.

The Perimeter Screening and On-site Landscape and Irrigation Plan shall meet the following minimum requirements:

- Provide a detailed landscape and irrigation plan at a scale of 1 inch to 40 feet (1:40) (or similar scale) listing proposed plant species, and installation sizes, quantities, and spacing. The plan shall include expected heights at 10 years and maturity and expected growth rates to maturity. To achieve year-round screening, only evergreen species shall be used. No new or replacement lawn areas shall be planted anywhere on the site interior.
- Proposed tree species shall be 24-inch box size unless the licensed landscape architect recommends a different size for a species. Except for areas where planting of new or replacement trees at the site periphery is infeasible (based on the final general arrangement/site plan), spacing of trees shall be sufficiently dense to ensure maximum screening by the tree canopy at maturity. Faster-growing tree species

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shall be included provided that those species are non-invasive and suited to the coastal environment.

- Proposed shrub species shall be selected to achieve maximum screening effectiveness. Shrubs planted inside the 8-foot-tall masonry wall along Magnolia Marsh shall be selected to achieve a mature height of 12 feet to 15 feet, with a goal to increase the effectiveness of visual screening provided by the wall. Shrubs shall be installed at 5-gallon size unless the licensed landscape architect recommends a different size for a species.
- Proposed tree species along the site boundary adjacent to Magnolia Marsh shall be selected with a goal to discourage perching by raptors and minimize predation on special-status birds. Tree species with droopy branches or dense foliage that would not attract perching raptors are preferred.
- Provide electronic files and sets of print copies of 11-inch by 17-inch (or larger, if necessary) color visual simulations at life-size scale showing the landscape plantings at the time of installation and 10 years after installation. Key observation point (KOP) 1, KOP 4, and KOP 5 shall be used to prepare the visual simulations.
- Provide discussions of plans and methods to efficiently irrigate landscape plantings to ensure their survival and maintain optimal growth rates.
- Provide a plan view of the project site that clearly shows the planting plan for the site and the existing and new ~~solid~~ 8-foot-tall decorative masonry walls along the site perimeter. Details on the materials and design of the masonry wall shall be included in the plan.
- Provide a detailed schedule for completing installation of landscape plantings during the project construction schedule and the masonry walls along the site perimeter.
- Provide a procedure for maintaining and monitoring the landscape and irrigation system and replacing all unsuccessful plantings for the life of the project.
- Provide a table summarizing the project's conformance with the City's landscape screening and irrigation regulations, including applicable goals, objectives, and policies in the Urban Design Element, Circulation Element, and Coastal Element of the General Plan. The table shall include applicable chapters and sections of the Huntington

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Beach Zoning & Subdivision Ordinance, as identified in **VISUAL RESOURCES APPENDIX-4** of the Final Staff Assessment.

VERIFICATION: At least 90 calendar days before site mobilization, the project owner shall submit the Perimeter Screening and On-site Landscape and Irrigation Plan to the CPM for review and approval. The project owner shall, simultaneously with the submission to the CPM, submit seven copies of the Perimeter Screening and On-site Landscape and Irrigation Plan to the City of Huntington Beach Planning and Building Department and one copy to the Executive Director of the Coastal Commission for review and comment.

If the CPM determines that the plan requires revision, the project owner shall provide an updated version with the specified revision(s) for review and approval by the CPM. The project owner shall, simultaneously with the submission to the CPM, submit seven copies of the revised Perimeter Screening and On-site Landscape and Irrigation Plan to the City of Huntington Beach Planning and Building Department and one copy to the Executive Director of the Coastal Commission for review and comment.

The project owner shall provide the CPM with copies of the transmittal letters submitted to the City and the Coastal Commission requesting those agencies' respective reviews of the Plan and any revisions. Review comments from the City and/or the Coastal Commission must be submitted to the project owner within 30 calendar days of receiving any of the stated plans. In the absence of comments within that time, the CPM may deem the Plan and any revisions acceptable to the City and/or the Coastal Commission. Those agencies' comments on the stated plans shall be provided to the CPM within 3 business days of receipt.

At least 10 calendar days before commercial operation of Power Block 1, the project owner shall notify the CPM in writing with information on 1) the status of implementing the requirements set forth in the Perimeter Screening and On-site Landscape and Irrigation Plan, and 2) a schedule for completing the remaining Plan requirements during the construction timeline. These steps shall be repeated for commercial operation of Power Block 2.

The project owner shall schedule periodic site visits with the CPM to view progress on implementing the Plan. At a minimum, site visits shall be scheduled within 30 calendar days of commercial operation of Power Block 1 and again within 30 calendar days of commercial operation of Power Block 2. The Plan shall be fully implemented within 90 calendar days of completing demolition of the Huntington Beach Generating Station Units 1 and 2. The project owner shall verify in writing when the Plan is fully

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implemented and the facility is ready for inspection. The project owner shall obtain written confirmation from the CPM that the project complies with the Perimeter Screening and On-site Landscape and Irrigation Plan.

The project owner shall provide a status report describing landscape maintenance activities in the Annual Compliance Report for the project. At a minimum, the report shall describe:

- Overall condition of the landscape areas and irrigation system at the power plant site.
- Major activities that occurred during the reporting year, including replacement of dead or dying vegetation.
- Maintenance of the site periphery masonry wall and any other elements included in the plan.

LONG-TERM CONSTRUCTION SCREENING, LANDSCAPE PROTECTION, AND SITE RESTORATION PLAN – PROJECT DEMOLITION, CONSTRUCTION, AND COMMISSIONING

VIS-3 Prior to the start of site mobilization, the project owner shall prepare and implement a Construction Screening, Landscape Protection, and Site Restoration Plan describing methods and materials that will be used during each project phase to screen project construction and parking areas and views of the project site from areas where construction activities have the potential to be visible during a phase. The Construction Screening, Landscape Protection, and Site Restoration Plan will describe methods and materials to identify and protect existing landscape trees and shrubs. The Construction Screening, Landscape Protection, and Site Restoration Plan will identify existing landscaped areas where plantings will be retained and where they will be permanently removed. The Construction Screening, Landscape Protection, and Site Restoration Plan will include provisions to restore areas where ground disturbance occurred during construction.

To minimize the adverse visual impacts of project construction during each project phase, the project owner shall install and maintain construction screening fencing along the perimeters of the project site areas where there could be views from public use areas of construction activities during a phase. The project owner will consult with the CPM to

determine areas where screening fencing is required during a project phase or phases. Depending on the location of on-site construction work, the areas requiring screening include the perimeter of the wetland along the southeast-east site boundary, the west side perimeter of the project site on Newland Street, and the southwest-west perimeter of the site along the Huntington Beach Wetlands Conservancy. The screening fencing for the power plant site shall be no less than 12 feet tall.

Brightly-colored construction exclusion fencing shall be used on-site to clearly delineate areas where existing landscape plantings will be protected and retained.

Condition of Certification **VIS-2** includes construction of an 8-foot-tall decorative masonry wall to extend along the site boundary adjacent to the Huntington Beach Wetlands & Wildlife Care Center and the wetland. Upon completing installation of the masonry wall, the CPM shall allow the project owner to remove all construction screening fencing from those portions of the site boundary.

Screening fencing shall be installed to visually screen the open lots that will be used for parking on Newland Street across from the project site and along the Pacific Coast Highway (PCH) at Beach Boulevard. The screening fencing for the parking lots shall be no less than 6 feet tall and shall meet the City of Huntington Beach corner lot visibility requirements specified in Title 23, Chapter 230, "Site Standards," of the Huntington Beach Municipal Code (i.e., 25-foot by 25-foot corner visibility triangle).

The Construction Screening, Landscape Protection, and Site Restoration Plan shall provide images showing options for site perimeter screening materials; examples shall include fencing materials in unobtrusive shades of green or brown as well as printed decorative designs. Possible options include knitted polyethylene material, bottom-locking fence slats with chain-link fencing, pre-printed mesh fabric, or printable mesh vinyl. All site perimeter screening fencing and construction exclusion fencing shall be well maintained and repaired or replaced as necessary for the duration of project demolition, construction, and commissioning.

When construction is finished, all evidence of construction activities shall be removed and disturbed areas restored to their original or better condition. The Construction Screening, Landscape Protection, and Site

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Restoration Plan shall describe the methods and schedule for the restoration work to occur.

The Construction Screening, Landscape Protection, and Site Restoration Plan shall be submitted to the CPM for review and approval, and to the City of Huntington Beach Planning and Building Department and the Executive Director of the Coastal Commission for timely review and comment. City staff requests seven sets of plans. Any comments on the plan from the City and the Coastal Commission shall be provided to the CPM. The project owner shall not purchase or order any materials for site perimeter screening fencing until written approval of the final Construction Screening, Landscape Protection, and Site Restoration Plan is received from the CPM. Modifications to the Construction Screening, Landscape Protection, and Site Restoration Plan are prohibited shall not occur without the CPM's approval.

VERIFICATION: At least 60 calendar days before the start of site mobilization, the project owner shall submit a Construction Screening, Landscape Protection, and Site Restoration Plan to the CPM for review and approval. Simultaneously with the submission of a Construction Screening, Landscape Protection, and Site Restoration Plan to the CPM, the project owner shall submit seven copies of a Construction Screening, Landscape Protection, and Site Restoration Plan to the City of Huntington Beach Planning and Building Department for-review and comment.

If the CPM determines that the Plan requires revision, the project owner shall provide an updated version with the specified revision(s) for review and approval by the CPM. Simultaneously with the submission of a Construction Screening, Landscape Protection, and Site Restoration Plan to the CPM, a copy shall be send to the Executive Director of the California Coastal Commission and seven copies shall be submitted to the city of Huntington Beach Planning and Building Department for review and comment.

Review comments from the City must be submitted within 30 calendar days of receiving the Construction Screening, Landscape Protection, and Site Restoration Plan to the CPM and the project owner. Plan and any revisions. In the absence of comments within that timeframe, the CPM shall deem the Construction Screening, Landscape Protection, and Site Restoration Plan to the CPM Plan and any revisions acceptable to the City and the Coastal Commission. The project owner shall provide comments received from the City and/or the Coastal Commission to the CPM within 3 business days of receipt.

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Before the start of ground disturbance at the project site, the project owner shall install site perimeter screening fencing and construction exclusion and parking area fencing at the locations agreed upon in consultation with the CPM. The project owner shall notify the CPM within 7 calendar days of installing the fencing that it is ready for inspection.

The project owner shall report any work required to repair or replace temporary screening and construction exclusion fencing in the Monthly Compliance Report for the project.

Within 10 calendar days of receipt of confirmation from the project owner that the permanent 8-foot-tall masonry wall has been completed, the CPM shall notify the project owner that construction screening fencing can be removed from the portions of the site boundaries where the masonry wall is erected.

Within 30 calendar days of completing construction of the HBEP power blocks and buildings, including demolition of HBGS Units 1 and 2, the project owner shall notify the CPM in writing of the status of implementing the requirements set forth in the Construction Screening, Landscape Protection, and Site Restoration Plan. Such notification shall include a schedule for completing the Plan requirements. The Plan shall be fully implemented within 90 calendar days of completing demolition and construction. The project owner shall verify in writing that the Plan is implemented and restored areas are ready for inspection. The project owner shall obtain written confirmation from the CPM that the project complies with the Plan.

LONG-TERM LIGHTING – PROJECT DEMOLITION, CONSTRUCTION, AND COMMISSIONING

VIS-4 Consistent with applicable worker safety regulations, the project owner shall ensure that lighting of on-site construction areas, construction worker parking lots, and construction laydown areas minimizes potential adverse night lighting impacts by implementing the following measures:

- All fixed-position lighting shall be hooded and shielded to direct light downward and toward the construction area to be illuminated to prevent illumination of the night sky and minimize light trespass (i.e., direct light extending beyond the boundaries of the construction worker parking lots and construction sites, including any security-related boundaries).
- Lighting of any tall construction equipment (e.g., scaffolding, derrick cranes, etc.) shall be directed toward areas requiring illumination and shielded to the maximum extent practicable.

- Task-specific lighting shall be used to the maximum extent practicable.
- Wherever and whenever feasible, lighting shall be kept off when not in use and motion sensors shall be used to the maximum extent practicable.
- The Compliance Project Manager (CPM) shall be notified of any construction-related lighting complaints. Complaints shall be documented using a form in the format shown in **Attachment 1**, and completed forms shall record resolution of each complaint. A copy of each completed complaint form shall be provided to the CPM. Records of lighting complaints shall also be kept in the compliance file at the project site.

VERIFICATION: Within 7 calendar days after the first use of fixed-position parking area and construction-related lighting for major HBEP construction milestones, the project owner shall notify the CPM that the lighting is ready for inspection. Verification is to be repeated for these three construction milestones:

- demolition of HBGS Unit 5 and east fuel oil tank and construction of Power Block 1,
- construction of Power Block 2, and
- demolition of HBGS Units 1 and 2 and construction of Buildings 33 and 34.

If the CPM determines that modifications to the lighting are needed for any construction milestone, within 14 calendar days of receiving that notification, the project owner shall correct the lighting and notify the CPM that modifications have been completed.

Within 48 hours of receiving a lighting complaint for any construction activity, the project owner shall provide a copy of the complaint report and resolution form to the CPM, including a schedule for implementing corrective measures to resolve the complaint.

The project owner shall report any lighting complaints and document their resolution in the Monthly Compliance Report for the project, accompanied by copies of completed complaint report and resolution forms for that month.

LIGHTING MANAGEMENT PLAN – PROJECT OPERATION.

VIS-5 Prior to commercial operation of the HBEP Power Block 1, the project owner shall prepare and implement a comprehensive Lighting Management Plan for the HBEP.

Consistent with applicable worker safety regulations, the project owner shall ensure the design, installation, and maintenance of all permanent

exterior lighting such that light sources are not directly visible from areas beyond the project site, reflected glare is avoided, and night lighting impacts are minimized or avoided to the maximum extent feasible. All lighting fixtures shall be selected to achieve high energy efficiency for the HBEP facility.

The project owner shall not purchase or order any lighting fixtures or apparatus until written approval of the final plan is received from the Compliance Project Manager (CPM). Modifications to the final Lighting Management Plan shall not occur without the CPM's approval.

The project owner shall meet these requirements for permanent project lighting:

- A Lighting Management Plan shall be prepared that integrates efficient technologies and designs into lighting systems. The plan shall include evidence of that—a certified lighting professional participated in plan preparation.
- Exterior lights shall be hooded and shielded and directed downward or toward the area to be illuminated to prevent obtrusive spill light (i.e., light trespass) beyond the project site.
- Exterior lighting shall be designed to minimize backscatter to the night sky to the maximum extent feasible.
- Energy efficient lighting products and systems shall be used for all permanent new lighting installations. Smart bi-level exterior lighting using high efficiency directional LED fixtures shall be used as appropriate for exterior installations. The lighting system shall work in conjunction with occupancy sensors, photo sensors, wireless controls, and/or other scheduling or controls technologies to provide adequate light for security and worker safety, and to maximize energy savings.
- Lighting fixtures shall be kept in good working order and continuously maintained according to the original design standards.
- The CPM shall be notified of any complaints about permanent lighting at the project site. Complaints shall be documented using a form in the format shown in **Attachment 1**, and completed forms shall record resolution of each complaint. A copy of each completed complaint form shall be provided to the CPM. Records of lighting complaints shall also be kept in the compliance file at the project site.

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The project owner shall meet these plan submittal and review requirements:

- The project owner shall submit the comprehensive Lighting Management Plan to the CPM for review and approval. Simultaneously with the submission of the Lighting Management Plan to the CPM, the project owner shall submit one copy to the Executive Director of the Coastal Commission and seven copies to the City of Huntington Beach Planning and Building Department for review and comment.. The project owner shall provide any comments on the plan received from the City and/or the Coastal Commission to the CPM.
- The project owner shall not purchase or order any lighting fixtures or apparatus until written approval of the final plan is received from the CPM. Modifications to the Lighting Management Plan are prohibited without the CPM's approval. Installation of lighting must be completed by the start of commercial operation of Power Block 1.

VERIFICATION: At least 90 calendar days before ordering any permanent lighting equipment for Power Block 1 and related facilities and structures, the project owner shall submit a comprehensive Lighting Management Plan to the CPM for review and approval. Simultaneously with the submission of the Lighting Management Plan to the CPM, the project owner shall submit one copy to the Executive Director of the Coastal Commission and seven copies to the City of Huntington Beach Planning and Building Department for review and comment.. The project owner shall provide any comments on the plan received from the City and/or the Coastal Commission to the CPM.

If the CPM determines that the Plan requires revision, the project owner shall provide a an updated version with the specified revision(s) for review and approval by the CPM. A copy of the revised Lighting Management Plan shall be provided to the Executive Director of the Coastal Commission and seven copies shall be provided to the City of Huntington Beach Planning and Building Department for review and comment.

The project owner shall provide the CPM with copies of the transmittal letters-requesting reviews of the Lighting Management-Plan and any plan revisions. Review comments from the City and the Coastal Commission must be submitted to the project owner within 30 calendar days of receiving the Plan and any revisions. In the absence of comments within that timeframe, the CPM shall deem the Lighting Management Plan and any revisions acceptable to the City and to the Coastal Commission. The project

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owner shall provide any comments received from the City and/or the Coastal Commission to the CPM within 3 business days of receipt.

Prior to the start of commercial operation of Power Block 1, the project owner shall notify the CPM in writing that installation of permanent lighting for Power Block 1 has been completed and that the lighting is ready for inspection. If the CPM notifies the project owner that modifications to the lighting system are required, within 30 days of receiving that notification, the project owner shall implement all specified changes and notify the CPM that the modified lighting system(s) is ready for inspection. The project owner shall obtain written confirmation from the CPM that the project complies with the Plan.

Within 48 hours of receiving a complaint about permanent project lighting, the project owner shall provide a copy of the complaint report and resolution form to the CPM, including a schedule for implementing corrective measures to resolve the complaint.

The project owner shall report any complaints about permanent lighting and document their resolution in the Annual Compliance Report for the project, accompanied by copies of completed complaint report and resolution forms for that year.

LIGHTING MANAGEMENT PLAN, REVIEW AND LETTER REPORT – PROJECT OPERATION.

VIS-6 Prior to commercial operation of the HBEP Power Block 2, the project owner shall conduct a full review of the approved Lighting Management Plan to determine whether updates to the Plan are needed (e.g., to implement lighting technology changes). Review of the Plan shall include preparation and submittal of a letter report summarizing conclusions and recommendations for the lighting plan. The letter report shall include evidence that a certified lighting professional participated in Plan review.

The plan review and letter report shall be submitted to the Compliance Project Manager (CPM) for review and approval and the City of Huntington Beach Planning and Building Department for timely review and comment. Any comments on the letter report from the City shall be provided to the CPM.

The project owner shall not purchase or order any permanent lighting for Power Block 2 or new buildings (including administrative or maintenance buildings or warehouses) until written approval of the final plan is received from the CPM. Modifications to the Lighting Management Plan are

prohibited without the CPM's approval. Installation of lighting must be completed by the start of commercial operation of Power Block 2.

VERIFICATION: At least 60 calendar days before ordering any permanent lighting for Power Block 2 and other buildings and structures, the project owner shall submit a comprehensive Lighting Management Plan to the CPM for review and approval. Simultaneously with the submission of the Lighting Management Plan to the CPM, the project owner shall submit one copy to the Executive Director of the Coastal Commission and seven copies to the City of Huntington Beach Planning and Building Department for review and comment.. The project owner shall provide any comments on the plan received from the City shall be provided to the CPM within 3 business days of receipt.

If the CPM determines that the Plan requires revision, the project owner shall provide an updated version with the specified revision(s) for review and approval by the CPM. A copy of the revised Lighting Management Plan shall be provided to the Executive Director of the Coastal Commission and seven copies shall be provided to the City of Huntington Beach Planning and Building Department for review and comment.

The project owner shall provide the CPM with copies of the transmittal letters requesting reviews of the Lighting Management-Plan and any plan revisions. Review comments from the City and the Coastal Commission must be submitted to the project owner within 30 calendar days of receiving the Plan and any revisions. In the absence of comments within that timeframe, the CPM shall deem the Lighting Management Plan and any revisions acceptable to the City and to the Coastal Commission. The project owner shall provide any comments received from the City and/or the Coastal Commission to the CPM within 3 business days of receipt.

Prior to the start of commercial operation of Power Block 2, the project owner shall notify the CPM in writing that installation of permanent lighting has been completed and that the lighting is ready for inspection. If the CPM notifies the project owner that modifications to the lighting system are required, within 30 days of receiving that notification, the project owner shall implement all specified changes and notify the CPM that the modified lighting system(s) is ready for inspection. The project owner shall obtain written confirmation from the CPM that the project complies with the Lighting Management Plan.

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Complaint Report and Resolution Form

Facility Name: Huntington Beach Energy Project	Complaint Log No:
Complainant's name and address:	Phone No:
Date and time complaint received:	
Complaint filed: <input type="checkbox"/> By Telephone <input type="checkbox"/> In Writing (attach letter) <input type="checkbox"/> In Person	
Date of first occurrence:	
Description of the complaint (lighting, duration, etc.):	
Findings of investigation by AES personnel:	
Indicate if complaint relates to a violation of an Energy Commission condition: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date complainant contacted to discuss findings:	
Description of corrective measures taken or other complaint resolution:	
Indicate if complainant agrees with proposed resolution:	
In not, explain:	
Additional relevant information:	
If corrective action necessary, date completed:	
Date of first response to complainant:	(attach copy)
Date of final response to complainant:	(attach copy)
This information is certified to be correct:	
Plant or project manager's signature:	Date:

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COMPLIANCE AND CLOSURE

COM-1: UNRESTRICTED ACCESS. The project owner shall take all steps necessary to ensure that the CPM, responsible Energy Commission staff, and delegated agencies or consultants have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on-site to facilitate audits, surveys, inspections, and general or closure-related site visits. Although the CPM shall 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, whether such visits are by the CPM in person or through representatives from Energy Commission staff, delegated agencies, or consultants.

COM-2: COMPLIANCE RECORD. The project owner shall maintain electronic copies of all project files and submittals on-site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. the facility's Application(s) for Certification;
2. all amendment petitions and Energy Commission orders;
3. all site-related environmental impact and survey documentation;
4. all appraisals, assessments, and studies for the project;
5. all finalized original and amended structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals and training documentation required by the conditions of certification or applicable LORS.

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

COM-3: COMPLIANCE VERIFICATION SUBMITTALS. Verification lead times associated with the start of construction or closure may require the project owner to file submittals during the AFC process, particularly if construction is planned to commence shortly after certification. The verification

procedures, unlike the conditions, may be modified as necessary by the CPM.

A cover letter from the project owner or an authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by AFC number, cite the appropriate condition(s) of certification number(s), and give a brief description of the subject of the submittal. When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and the condition(s) of certification applicable.

All reports and plans required by the project's conditions of certification shall be submitted in a searchable electronic format (.pdf, MS Word, or Excel, etc.) and include standard formatting elements such as a table of contents, identifying by title and page number each section, table, graphic, exhibit, or addendum. All report and/or plan graphics and maps shall be adequately scaled and shall include a key with descriptive labels, directional headings, a bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM, whether the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be accompanied by an electronic copy on an electronic storage medium, or by e-mail, as agreed upon by the CPM. If hard-copy submittals are required, please address as follows:

Compliance Project Manager
Huntington Beach Energy Project (12-AFC-02)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

COM-4: PRE-CONSTRUCTION MATRIX AND TASKS PRIOR TO START OF CONSTRUCTION. Prior to start of construction, the project owner shall submit to the CPM a compliance matrix including only those conditions that must be fulfilled before the start of construction. The matrix shall be included with the project owner's first compliance submittal or prior to the

first pre-construction meeting, whichever comes first, and shall be submitted in a format similar to the description below.

Site mobilization and construction activities shall not start until all of the following occur: the project owner has submitted the pre-construction matrix and all submittals required by compliance verifications pertaining to all pre-construction conditions of certification, and the CPM has issued an authorization-to-construct letter to the project owner. The deadlines for submitting various compliance verifications to the CPM allow sufficient staff time to review and comment on, and if necessary, allow the project owner to revise the submittal in a timely manner. These procedures help ensure that project construction proceeds according to schedule. Failure to submit required compliance documents by the specified deadlines may result in delayed authorizations to commence various stages of the project.

If the project owner anticipates site mobilization immediately following project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting compliance verification requirements prior to these authorizations is at the owner's own risk. Any approval by Energy Commission staff prior to project certification is subject to change based upon the Commission Decision, or amendment thereto, and early staff compliance approvals do not imply that the Energy Commission will certify the project for actual construction and operation.

COM-5: COMPLIANCE MATRIX. The project owner shall submit a compliance matrix to the CPM with each MCR and ACR. The compliance matrix provides the CPM with the status of all conditions of certification in a spreadsheet format. The compliance matrix shall identify:

1. the technical area (e.g., biological resources, facility design, etc.);
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., sixty (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 CBO, CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., “not started,” “in progress,” or “completed” (include the date); and
8. if the condition was amended, the updated language and the date the amendment was proposed or approved.

The CPM can provide a template for the compliance matrix upon request.

COM-6: MONTHLY COMPLIANCE REPORTS AND KEY EVENTS LIST. The first MCR is due one (1) month following the docketing of the project’s Decision unless otherwise agreed to by the CPM. The first MCR shall include the AFC number and 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 Compliance Plan).

During project pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR within ten (10) business days after the end of each reporting month, unless otherwise specified by the CPM. MCRs shall be clearly identified for the month being reported. The searchable electronic copy may be filed on an electronic storage medium or by e-mail, subject to CPM approval. The compliance verification submittal condition provides guidance on report production standards, and the MCR 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 MCR; each of these items shall be identified in the transmittal letter, as well as the conditions they satisfy, and submitted as attachments to the MCR;
3. an initial, and thereafter updated, compliance matrix showing the status of all conditions of certification;

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4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to the conditions of certification;
7. a list of any filings submitted to, and permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months; the project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;
9. a list of the month's additions to the on-site compliance file; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the month; a description of the actions taken to date to resolve the issues; and the status of any unresolved actions.

COM-7: ANNUAL COMPLIANCE REPORTS. After construction is complete, the project owner must submit searchable electronic ACRs instead of MCRs. ACRs are due for each year of commercial operation and may be required for a specified period after decommissioning to monitor closure compliance, as specified by the CPM. The searchable electronic copies may be filed on an electronic storage medium or by e-mail, subject to CPM approval. Each ACR must include the AFC number, identify the reporting period, and contain the following:

1. an updated compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

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3. documents required by specific conditions to be submitted along with the ACR; each of these items shall be identified in the transmittal letter with the condition it satisfies and submitted as an attachment to the ACR;
4. a cumulative list of all post-certification changes approved by the Energy Commission or 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 list of filings submitted to, and permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a list of the year's additions to the on-site compliance file;
9. an evaluation of the Site Contingency Plan, including amendments and plan updates; and
10. a list of complaints, notices of violation, official warnings, and citations received during the year, a description of how the issues were resolved, and the status of any unresolved matters.

COM-8: CONFIDENTIAL INFORMATION. Any information that the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with an application for confidentiality, pursuant to Title 20, California Code of Regulations, section 2505(a). Any information deemed confidential pursuant to the regulations shall remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501.

COM-9: ANNUAL ENERGY FACILITY COMPLIANCE FEE. Pursuant to the provisions of section 25806 (b) of the Public Resources Code, the project owner is required to pay an annually adjusted compliance fee. Current compliance fee information is available on the Energy Commission's website at http://www.energy.ca.gov/siting/filing_fees.html. The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the Energy Commission docket its final

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Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-10: AMENDMENTS, STAFF-APPROVED PROJECT MODIFICATIONS, OWNERSHIP CHANGES, AND VERIFICATION CHANGES. The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to modify the design, operation, or performance requirements of the project or linear facilities, or to transfer ownership or operational control of the facility. The CPM will determine whether staff approval will be sufficient, or whether Commission approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1769. Section 1769 details the required contents for a Petition to Amend an Energy Commission Decision. The only change that can be requested by means of a letter to the CPM is a request to change the verification method of a condition of certification.

Implementation of a project modification without first securing Energy Commission, or Energy Commission staff, approval may result in an enforcement action, including civil penalties, in accordance with section 25534 of the Public Resources Code. If the Energy Commission's rules regarding amendments are revised, the rules in effect at the time the change is requested shall apply.

COM-11: REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS. Prior to the start of construction or decommissioning, the project owner shall send a letter to property owners within one (1) 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 twenty-four (24) hours per day, it shall include automatic answering with a date and time stamp recording.

The project owner shall respond to all recorded complaints within twenty-four (24) hours or the next business day. The project site shall post the telephone number on-site and make it easily visible to passersby during construction, operation, and closure. The project owner shall provide the contact information to the CPM who will post it on the Energy Commission's web page at http://www.energy.ca.gov/sitingcases/huntington_beach_energy/index.htm

I. The project owner shall report any disruption to the contact system or telephone number change to the CPM promptly, to allow the CPM to update the Energy Commission's facility webpage accordingly.

In addition to including all complaints, notices, and citations included with the MCRs and ACRs, within ten (10) days of receipt, the project owner shall report, and provide copies to the CPM, of all complaints, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the Noise and Vibration Conditions of Certification. All other complaints shall be recorded on the complaint form (Attachment A) at the end of this Compliance Plan.

COM-12: EMERGENCY RESPONSE SITE CONTINGENCY PLAN. No less than sixty (60) days prior to the start of commercial operation (or other date agreed to by the CPM), the project owner shall submit for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require the updating of the Contingency Plan over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock location (if applicable), the on- and off-site assembly areas, and the main roads and highways near the site;
3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;

5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for all personnel regularly on-site;
6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;
7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of certification for the technical areas of **PUBLIC HEALTH, WASTE MANAGEMENT, HAZARDOUS MATERIALS MANAGEMENT, and WORKER SAFETY**).

COM-13: INCIDENT-REPORTING REQUIREMENTS. Within one hour after it is safe and feasible, the project owner shall notify the CPM or Compliance Office Manager, by telephone and e-mail, of any incident at the power plant or appurtenant facilities that results, or could result, in any of the following:

1. health and safety impacts on the surrounding population;
2. property damage off-site;
3. response by off-site emergency response agencies;
4. serious on-site injury;
5. serious environmental damage; or
6. emergency reporting to any federal, state, or local agency.

The notice shall describe the circumstances, status, and expected duration of the incident. If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific conditions of certification for the technical areas of **HAZARDOUS MATERIALS MANAGEMENT and WASTE MANAGEMENT**).

Within one (1) week of the incident, the project owner shall submit to the CPM a detailed incident report, which includes, as appropriate, the following information:

1. a brief description of the incident, including its date, time, and location;
2. a description of the cause of the incident, or likely causes if it is still under investigation;
3. the location of any off-site impacts;
4. description of any resultant impacts;
5. a description of emergency response actions associated with the incident;
6. identification of responding agencies;
7. identification of emergency notifications made to federal, state, and/or local agencies;
8. identification of any hazardous materials released and an estimate of the quantity released;
9. a description of any injuries, fatalities, or property damage that occurred as a result of the incident;
10. fines or violations assessed or being processed by other agencies;
11. name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and
12. corrective actions to prevent a recurrence of the incident.

The project owner shall maintain all incident report records for the life of the project, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within twenty four (24) hours of a request.

COM-14: NON-OPERATION. If the facility ceases operation temporarily, either planned or unplanned, for longer than one (1) week (or other CPM-approved date), but less than three (3) months (or other CPM-approved date), the project owner shall notify the CPM, interested agencies, and nearby property owners. Notice of planned non-operation shall be given at least two (2) weeks prior to the scheduled date. Notice of unplanned non-

operation shall be provided no later than one (1) week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one (1) week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. identification of operational and non-operational components of the plant;
2. a detailed description of the repair or restoration activities;
3. a proposed schedule for completing the repair or restoration activities;
4. an assessment of whether or not the proposed activities would require changing, adding, and/or deleting any conditions of certification, and/or would cause noncompliance with any applicable LORS; and
5. planned activities during non-operation, including any measures to ensure continued compliance with all conditions of certification and LORS.

Written updates to the CPM for non-operational periods, until operation resumes, shall include:

1. progress relative to the schedule;
2. developments that delayed or advanced progress or that may delay or advance future progress;
3. any public, agency, or media comments or complaints; and
4. projected date for the assumption of operation.

During non-operation, all applicable conditions of certification and reporting requirements remain in effect. If, after one (1) year from the date of the project owner's last report of productive Repair/Restoration Plan work, the facility does not resume operation or does not provide a plan to

resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities. Within ninety (90) days of the Executive Director's determination, the project owner shall do one of the following:

1. If the facility has a closure plan, the project owner shall update it and submit it for Energy Commission review and approval.
2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for Energy Commission review and approval.

COM-15: FACILITY CLOSURE PLANNING. To ensure that a facility's eventual permanent closure and long-term maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the Energy Commission to plan and prepare for eventual permanent closure.

A. Provisional Closure Plan and Estimate of Permanent Closure Costs

To assure satisfactory long-term site maintenance and adequate closure for "the whole of a project," the project owner shall submit a Provisional Closure Plan and Cost Estimate for CPM review and approval within sixty (60) days after the start of commercial operation. The Provisional Closure Plan and Cost Estimate shall consider applicable final closure plan requirements, and reflect the use of an independent third party to carry out the permanent closure.

The Provisional Closure Plan and Cost Estimate shall provide for a phased closure process and include but not be limited to:

1. comprehensive scope of work and itemized budget;
2. closure plan development costs;
3. dismantling and demolition;
4. recycling and site clean-up;
5. mitigation and monitoring direct, indirect, and cumulative impacts;
6. site remediation and/or restoration;
7. interim and long term operation monitoring and maintenance, including long-term equipment replacement costs; and

8. contingencies.

The project owner shall include an updated Provisional Closure Plan and Cost Estimate in every fifth-year ACR for CPM review and approval. Each updated Provisional Closure Plan and Cost Estimate shall reflect the most current regulatory standards, best management practices, and applicable LORS.

B. Final Closure Plan and Cost Estimate

At least three (3) years prior to initiating a permanent facility closure, the project owner shall submit for Energy Commission review and approval, a Final Closure Plan and Cost Estimate, which includes any long-term, post-closure site maintenance and monitoring. Final Closure Plan and Cost Estimate contents include, but are not limited to:

1. a statement of specific Final Closure Plan objectives;
2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;
3. identification of any facility-related installations not part of the Energy Commission certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;
4. a comprehensive scope of work and itemized budget for permanent plant closure and site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
 - a. dismantling and demolition;
 - b. recycling and site clean-up;
 - c. impact mitigation and monitoring;
 - d. site remediation and/or restoration and;
 - e. any contingencies.
5. a revised/updated Final Cost Estimate for all closure activities, by phases, including site monitoring and maintenance costs, and long-term equipment replacement;

6. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the Energy Commission-certified project;
7. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above- and below-ground infrastructure inventory map and registered engineer's or delegate CBO's assessment of demolishing the facility; additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and Cost Estimate and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;
8. all information additionally required by the facility's conditions of certification applicable to plant closure;
9. an equipment disposition plan, including:
 - a. recycling and disposal methods for equipment and materials; and
 - b. identification and justification for any equipment and materials that will remain on-site after closure;
10. a site disposition plan, including but not limited to:
 - a. proposed rehabilitation, restoration, and/or remediation procedures, as required by the conditions of certification and applicable LORS; and
 - b. site maintenance activities.
11. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than-significant level; potential impacts to be considered shall include, but not be limited to:
 - a. traffic
 - b. noise and vibration
 - c. soil erosion
 - d. air quality degradation

CONDITIONS OF CERTIFICATION
APPENDIX "A"

- e. solid waste
 - f. hazardous materials
 - g. waste water discharges
 - h. contaminated soil
12. identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and proposed strategies for achieving and maintaining compliance during closure;
 13. updated mailing list or listserv of all responsible agencies, potentially interested parties, and property owners within one (1) mile of the facility;
 14. identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and
 15. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see conditions of certification for **PUBLIC HEALTH, WASTE MANAGEMENT, HAZARDOUS MATERIALS MANAGEMENT**, and **WORKER SAFETY**).

If implementation of an Energy Commission-approved Final Closure Plan and Cost Estimate is not initiated within one (1) year of its approval date, it shall be updated and re-submitted to the Commission for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one (1) year, or subsequently abandons the facility, the Final Closure Plan and Cost Estimate shall be resubmitted to the Commission for supplementary review and approval. The project owner remains liable for all costs of contingency planning and closure.

CONDITIONS OF CERTIFICATION
APPENDIX "A"

APPENDIX B



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Exhibit List

Docket: 12-AFC-02

Project Title: Huntington Beach Energy Project

Generated On: 9/2/2014 4:37:00 PM

Exhibit Number	Document Title and Description	Disposition
1001	TN # 66003 Application for Certification Volume I & II Found at: http://www.energy.ca.gov/sitingcases/huntington_beach_energy/documents/applicant/AFC/	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1002	TN # 66006 Applicant's Air Quality Air Dispersion Modeling Data (CD) and Air Quality Appendices 5.1A (HC) Applicant's Air Quality Air Dispersion Modeling Data (CD) and Air Quality Appendices 5.1A (HC)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1003	TN # 66057 Application for Confidential Designation - Cultural Resources Application for Confidential Designation - Cultural Resources	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1004	TN # 66490 Applicant's Data Adequacy Supplement Applicant's Data Adequacy Supplement	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1005	TN # 66491 Applicant's Dispersion Modeling Files - Data Adequacy Response 24 Applicant's Dispersion Modeling Files - Data Adequacy Response 24	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1006	TN # 66492 Applicant's Preliminary Geotechnical Report Applicant's Preliminary Geotechnical Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1007	TN # 66493 Repeated Application for Confidential Designation - Cultural Resources Repeated Application for Confidential Designation - Cultural Resources	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1008	TN # 66506 Applicant's Biological Resources 5.2-2CR to be included with the Applicant's Data Adequacy Supplement Dated August 7, 2012 Applicant's Biological Resources 5.2-2CR to be included with the Applicant's Data Adequacy Supplement Dated August 7, 2012	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1009	TN # 66913 Applicant's Letter Enclosing Correspondence to California Coastal Commission Regarding Proposed Project Applicant's Letter Enclosing Correspondence to California Coastal Commission Regarding Proposed Project	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1010	TN # 67020 Applicant's Comments on CEC Staff Issues Identification Report Applicant's Comments on CEC Staff Issues Identification Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1011	TN # 67110 Applicant's Site Visit & Informational Hearing Materials Applicant's Site Visit & Informational Hearing Materials	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1012	TN # 67316 AES's Application for Greenhouse Gas PSD Pre-Construction Permit AES's Application for Greenhouse Gas PSD Pre-Construction Permit	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1013	TN # 67317 AES Response to South Coast Air Quality Management District's Air Application AES Response to South Coast Air Quality Management District's Air Application	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1014	TN # 67902 Applicant's Request for Extension to Submit Data Responses, Set One 1-72 Applicant's Request for Extension to Submit Data Responses, Set One 1-72	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1015	TN # 68070 AES Response to SCAQMD Regarding Emission Rates and Modeling Results AES Response to SCAQMD Regarding Emission Rates and Modeling Results	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1016	TN # 68208 Applicant Huntington Beach Energy Project's Emission Rates and Modeling Results Applicant Huntington Beach Energy Project's Emission Rates and Modeling Results	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1017	TN # 68366 Applicant's Response to Staff's Data Request, Set 1A - no. 1-72 Applicant's Response to Staff's Data Request, Set 1A - no. 1-72	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1018	TN # 68384 Applicant's Air Quality Modeling Files Related to CEC Staff's Data Request Two Applicant's Air Quality Modeling Files Related to CEC Staff's Data Request Two	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1019	TN # 68416 Applicant's Correspondence to the USEPA Regarding to Greenhouse Gas Prevention of Significant Deterioration Pre-Construction Permit Found at: http://www.energy.ca.gov/sitingcases/huntington_beach_energy/documents/applicant/2012-11-07_Applicant_Correspondence_to_US-EPA_TN-68416.pdf	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1020	TN # 68743 Applicant's Request for Additional Extension of Time to Submit Responses to Staff's Data Requests, Set 1A (AQ-11, BIO-23, BIO-24, BIO-25, BIO-26) Applicant's Request for Additional Extension of Time to Submit Responses to Staff's Data Requests, Set 1A (AQ-11, BIO-23, BIO-24, BIO-25, BIO-26)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1021	TN # 68796 Applicant's Objections to Certain Data Requests Contained In Set One (#1-16) from Intervenor Pyle Applicant's Objections to Certain Data Requests Contained In Set One (#1-16) from Intervenor Pyle	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1022	TN # 68847 Applicant's Responses to Supplemental Data Responses No.36 (Cultural Resources) Applicant's Responses to Supplemental Data Responses No.36 (Cultural Resources)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1023	TN # 68848 Applicant's Correspondence Related to Air Quality Applicant's Correspondence Related to Air Quality	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1024	TN # 68849 Applicant's Supplemental Data Response to Data Request Number 68 - Visual Applicant's Supplemental Data Response to Data Request Number 68 - Visual	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1025	TN # 68850 Applicant's Response to SCAQMD's October 26, 2012 Email Request re Start/Stop Emissions and GHG Performance Applicant's Response to SCAQMD's October 26, 2012 Email Request re Start/Stop Emissions and GHG Performance	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1026	TN # 68867 CH2M Hill's Jerry Salamy Email to AES Southland's Stephen O'Kane and SCAQMD's Chris Perri re Start/Stop Emissions and GHG Performance CH2M Hill's Jerry Salamy Email to AES Southland's Stephen O'Kane and SCAQMD's Chris Perri re Start/Stop Emissions and GHG Performance	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1027	TN # 68876 Applicant's Responses to Intervenor Jason Pyle's Data Requests, Set 1 no.1-16 Applicant's Responses to Intervenor Jason Pyle's Data Requests, Set 1 no.1-16	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1028	TN # 68934 Huntington Beach Energy Project Email to SCAQMD Regarding GHG Calculations and Heat Rates Huntington Beach Energy Project Email to SCAQMD Regarding GHG Calculations and Heat Rates	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1029	TN # 69017 Applicant's Submittal of Email Correspondence Related to Air Quality Applicant's Submittal of Email Correspondence Related to Air Quality	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1030	TN # 69020 Applicant's Supplemental Response to Data Request Number 27 (Biological Resources) Applicant's Supplemental Response to Data Request Number 27 (Biological Resources)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1031	TN # 69074 Applicant's Request for Extension to Submit Certain Data Responses Contained in CEC Staff's Data Responses Set Two (Numbers 73-98) and Objections Applicant's Request for Extension to Submit Certain Data Responses Contained in CEC Staff's Data Responses Set Two (Numbers 73-98) and Objections	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1032	TN # 69098 U.S. EPA's Letter to AES Transferring PSD Permit to SCAQMD U.S. EPA's Letter to AES Transferring PSD Permit to SCAQMD	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1033	TN # 69179 Applicant's Air Quality Modeling Files Related to Applicant's Response to Staff's Data Request AQ-11 Applicant's Air Quality Modeling Files Related to Applicant's Response to Staff's Data Request AQ-11	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1034	TN # 69180 Applicant's Response to Jason Pyle's Data Request, Set One (Numbers 1 through 16) Applicant's Response to Jason Pyle's Data Request, Set One (Numbers 1 through 16)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1035	TN # 69182 Applicant's Responses to CEC Staff's Data Requests, Set One AQ-11, BIO-23 through BIO-26 Applicant's Responses to CEC Staff's Data Requests, Set One AQ-11, BIO-23 through BIO-26	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1036	TN # 69206 Applicant's Status Report Applicant's Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1037	TN # 69208 Applicant's Responses to Staff's Data Requests, Set 2 (Numbers 73 through 98) Applicant's Responses to Staff's Data Requests, Set 2 (Numbers 73 through 98)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1038	TN # 69214 Applicant's Supplemental Files in Response to Staff's Visual Resources Data Request 97 Applicant's Supplemental Files in Response to Staff's Visual Resources Data Request 97	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1039	TN # 69243 CH2MHILL Jerry Salamy Email Regarding Commissioning Emissions CH2MHILL Jerry Salamy Email Regarding Commissioning Emissions	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1040	TN # 69373 Applicant's Supplemental Files in Response to Staff's Informal Request Related to Visual Resources - KOP 1 through KOP 5 Applicant's Supplemental Files in Response to Staff's Informal Request Related to Visual Resources - KOP 1 through KOP 5	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1041	TN # 69415 Applicant's Correspondence Related to Socioeconomics Applicant's Correspondence Related to Socioeconomics	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1042	TN # 69422 Applicant's Correspondence Related to Air Quality - Ammonia Emissions Applicant's Correspondence Related to Air Quality - Ammonia Emissions	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1043	TN # 69446 Applicant's Request for Extension to Submit Responses to CEC Staff's Data Requests 74-77 Applicant's Request for Extension to Submit Responses to CEC Staff's Data Requests 74-77	Offered by Applicant Representative (Melissa A. Foster); Admitted.
1044	TN # 69514 Applicant's Email Regarding Existing and Proposed Workforce Staff at the Huntington Beach Generating Station	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
	Applicant's Email Regarding Existing and Proposed Workforce Staff at the Huntington Beach Generating Station	
1045	TN # 69545 Applicant's Responses to Data Requests, Set 3 Numbers 99-103 Applicant's Responses to Data Requests, Set 3 Numbers 99-103	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1046	TN # 69564 Applicant's Supplemental Responses to Data Requests, Set Two (Water Resources No. 80 through 83 and Traffic and Transportation No. 92 through 94) Applicant's Supplemental Responses to Data Requests, Set Two (Water Resources No. 80 through 83 and Traffic and Transportation No. 92 through 94)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1047	TN # 69631 Applicant's Responses to Data Requests, Set 2A - Public Health #74-77 Applicant's Responses to Data Requests, Set 2A - Public Health #74-77	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1048	TN # 69632 Applicant's Correspondence to Air Quality Modeling Files Related to Applicant's Responses to Staff's Data Requests, Set 2A Applicant's Correspondence to Air Quality Modeling Files Related to Applicant's Responses to Staff's Data Requests, Set 2A	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1049	TN # 69687 South Coast Air Quality Management District's Request for Additional Clarifying Information South Coast Air Quality Management District's Request for Additional Clarifying Information	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1050	TN # 69700 Applicant's Correspondence Related to Air Quality January - February 2013 Applicant's Correspondence Related to Air Quality January - February 2013	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1051	TN # 69878 Applicant's Response to E-Mail Request from CEC Staff on Use and Number of Stories for Specific HBEP Building Applicant's Response to E-Mail Request from CEC Staff on Use and Number of Stories for Specific HBEP Building	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1052	TN # 69888 Applicant's Supplemental Response to DR #31 (Biological Resources) Applicant's Supplemental Response to DR #31 (Biological Resources)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1053	TN # 69918 Applicant's Responses to Staff's Workshop Queries and Related AQ Modeling Files Applicant's Responses to Staff's Workshop Queries and Related AQ Modeling Files	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1054	TN # 69919 Applicant's Email Correspondence to Staff's Informal Inquiry Regarding the Existing HBGS Fuel Oil Tanks Applicant's Email Correspondence to Staff's Informal Inquiry Regarding the Existing HBGS Fuel Oil Tanks	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1055	TN # 69920 Applicant's Correspondence re Costa Mesa Meta Data and Related Air Quality Files Applicant's Correspondence re Costa Mesa Meta Data and Related Air Quality Files	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1056	TN # 69921 Applicant AES Southland Development, LLC's Email Correspondence dated March 12, 2013 from Applicant to CEC Staff Regarding Plot Plans for the Existing HBGS Applicant AES Southland Development, LLC's Email Correspondence dated March 12, 2013 from Applicant to CEC Staff Regarding Plot Plans for the Existing HBGS	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1057	TN # 69947 Applicant's Submittal of AutoCAD Files Related to Preliminary Grading and Drainage Plans (Water Resources) Applicant's Submittal of AutoCAD Files Related to Preliminary Grading and Drainage Plans (Water Resources)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1058	TN # 69948 Applicant's March 9, 2013 Correspondence Applicant's March 9, 2013 Correspondence	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1059	TN # 69961 Applicant's Revision to Construction and Demolition Schedule Applicant's Revision to Construction and Demolition Schedule	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1060	TN # 69967 Applicant's Submittal of Additional Construction and Demolition Information Applicant's Submittal of Additional Construction and Demolition Information	Offered by Applicant Representative (Melissa A. Foster); Admitted on 7/21/2014.
1061	TN # 69969 Applicant's Submittal of Information Regarding Construction Risk Value (Public Health) Applicant's Submittal of Information Regarding Construction Risk Value (Public Health)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1062	TN # 70167 Applicant's Correspondence, HARP Modeling Files and Historic Emission Estimates Dated March 25, 2013 to the SCAQMD Applicant's Correspondence, HARP Modeling Files and Historic Emission Estimates Dated March 25, 2013 to the SCAQMD	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1063	TN # 70291 Applicant's Status Report Applicant's Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1064	TN # 70403 Applicant's Geologic Resources - Final Site Investigation Report for Soil and Groundwater Applicant's Geologic Resources - Final Site Investigation Report for Soil and Groundwater	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1065	TN # 70762 Applicant's Correspondence Related to Air Quality Applicant's Correspondence Related to Air Quality	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1066	TN # 70865 Applicant's Responses to Data Requests, Set Five 107-109 (Public Health) Applicant's Responses to Data Requests, Set Five 107-109 (Public Health)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1067	TN # 70870 Applicant's Responses to Data Requests, Set Four, 104-106 (Air Quality) Applicant's Responses to Data Requests, Set Four, 104-106 (Air Quality)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1068	TN # 70957 Applicant's Status Report Number Three Applicant's Status Report Number Three	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1069	TN # 71338 Applicant's Responses to Staff's Informal Requests for Visual Resources Applicant's Responses to Staff's Informal Requests for Visual Resources	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1070	TN # 71513 Applicant's Correspondence Related to Air Quality Applicant's Correspondence Related to Air Quality	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1071	TN # 71529 Applicant's Status Report Four Applicant's Status Report Four	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1072	TN # 71601 Applicant's Correspondence with CEC's F. Miller Regarding Cheng Cycle Technology Information Applicant's Correspondence with CEC's F. Miller Regarding Cheng Cycle Technology Information	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1073	TN # 200042 AES response to SCAQMD Request for Information	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1074	TN # 200050 Applicant's Request for Scheduling Conference and or Scheduling Order	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1075	TN # 200362 AES Huntington Beach Response to SCAQMD's June 7, 2013 Data Request	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1076	TN # 200363 Applicants Offsite Consequence Analysis (Hazardous Materials Handling)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1077	TN # 200375 Correspondence re Air Quality relating to the AFC of the Huntington Beach Energy Project	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1078	TN # 200380 Applicant's Status Report (Sept. 1, 2013) Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1079	TN # 200424 Applicant's Response to Staff's Status Report and Request for Status Conference	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1080	TN # 200631 CAISO Phase I Interconnection Study Report for HBEP CAISO Phase I Interconnection Study Report for HBEP	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1081	TN # 200675 Applicant's Responses to Staff's Informal Data Requests Applicant's Responses to Data Request (Alternatives/Water Resources)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1082	TN # 200698 Applicant's Status Report (October 1, 2013) Applicant's Status Report (October 1, 2013)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1083	TN # 200949 AES HBEP 1-Hour N02 Competing Source Inventory 10-18-13	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1084	TN # 201096 Applicant's Status Report (November 1, 2013) Applicant's Status Report - November 1, 2013	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1085	TN # 201106 Applicant's Resubmission of Data Responses, Set 1B, 4 and 5 Resubmission of Data Responses, Set 1B, 4, and 5 (Updated Responses to Data Requests 23 to 26 [BR], 104 to 106 [AQ], and 107 to 109 [PH])	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1086	TN # 201109 Letter to F. Miller dated 11-4-13 re AQ Modeling Files Submitted with Revised Responses to Data Request Sets 1B, 4, and 5 Letter	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1087	TN # 201142 Applicant's Comments on PSA, Part A Applicant's Comments on PSA, Part A	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1088	TN # 201229 Air Quality Correspondence HBEP Air Quality Correspondence	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1089	TN # 201352 Applicant's Status Report (December 2013)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1090	TN # 201437 Applicant's Follow-up to PSA Part A Workshop	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1091	TN # 201471 Applicant's Receipt of Preliminary Staff Assessment - Part A, Supplemental Focused Analysis dated 12-23-13 Filed in replacement of TN #201468	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1092	TN # 201469 Huntington Beach Energy Project CAISO Cluster 5 Phase II Interconnection Study (App. A, Att. #4 submitted separately) Huntington Beach Energy Project CAISO Cluster 5 Phase II Interconnection Study (App. A, Att. #4 submitted separately)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1093	TN # 201501 Applicant's Status Report (January 2014)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1094	TN # 201570 HBEP Resubmission of Data Response, Set 4 (Updated Response to DR #104; Air Quality)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1095	TN # 201572 Enclosure Letter Submitting Air Quality Modeling Files Related to Applicant's Resubmittal of Response to DR Set 4 (#104; AQ) 4 discs received. Too large to upload. If you want to view please contact the Dockets Unit.	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1096	TN # 201582 Comments on Staff's Supplemental Focused Analysis, PSA Part A	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1097	TN # 201632 Applicant's Status Report (February 2014) Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1098	TN # 201820 Applicant's Status Report (March 2014) Applicant's Status Report (March 2014)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1099	TN # 201840 Applicant's Comments on SCAQMD's Preliminary Determination of Compliance	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1100	TN # 201938 Applicant's Status Report (April 2014)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1101	TN # 201969 Applicant's Comments on Preliminary Staff Assessment, Part B (April 7, 2014) Applicant's Comments on Preliminary Staff Assessment, Part B (April 7, 2014)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1102	TN # 201970 Applicant's Status Conference Statement, dated April 7, 2014 Applicant's Status Conference Statement, dated April 7, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1103	TN # 202003 South Coast Air Quality Management District's Preliminary Determination of Compliance South Coast Air Quality Management District's Preliminary Determination of Compliance, dated April 1, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1104	TN # 202095 Applicant's Revised TSE Figure 3.1-1R, dated April 17, 2014 Applicant's Revised TSE Figure 3.1-1R, dated April 17, 2014 and related cover letter	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1105	TN # 202108 Applicant's Letter to Felicia Miller re Follow-Up to PSA Part B Workshop Applicant's Letter to Felicia Miller re Follow-Up to PSA Part B Workshop, dated April 18, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1106	TN # 202186 Revised Data Responses 104 dated 4/22/14 Revised Data Responses 104 dated 4/22/14	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1107	TN # 202281 Applicant's May 2014 Status Report Applicant's May 2014 Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1108	TN # 202292 Applicant's Comments Dated 5-5-2014 re SCAQMD PDOC Comments Applicant's Comments dated 5-5-2014 re SCAQMD PDOC Comments	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1109	TN # 202414 Applicant's June 2014 Status Report Applicant's June 2014 Status Report	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1110	TN # 202479 City of Huntington Beach Urban Water Management Plan	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1111	TN # 202535 Applicant's Submittal of Historical HBGS Photographs circa 1959 Applicant's Submittal of Historical HBGS Photographs circa 1959	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1112	TN # 202598 Declaration of Lisa Valdez in Support of Applicant's Opening Testimony.pdf Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1113	TN # 202599 Declaration of Mark Bastasch in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1114	TN # 202600 Declaration of Jennifer Krenz-Ruark in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1115	TN # 202601 Declaration of Horacio Larios in Support of Applicants Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1116	TN # 202602 Declaration of Geoffrey Spaulding in Support of Applicants Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1117	TN # 202603 Declaration of Fatuma Yusuf, Ph.D. in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1118	TN # 202604 Applicant's Correspondence to SCAQMD re Class II Visibility Correspondence	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1119	TN # 202605 Applicant's Correspondence to SCAQMD re Verification of PDOC Public Notice Distribution Correspondence	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1120	TN # 202606 Declaration of Thomas Lae in Support of Applicants Opening Testimony.pdf Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1121	TN # 202607 Declaration of Robert Mason in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1122	TN # 202608 Declaration of Sarah Madams in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1123	TN # 202609 Declaration of Melissa Fowler in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1124	TN # 202610 Declaration of Matthew Franck in Support of Applicants Opening Testimony.pdf Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1125	TN # 202611 Declaration of Thomas J. Priestley, Ph.D. in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1126	TN # 202613 Declaration of Robert Sims in Support of Applicant's Opening Testimony Declaration of Robert Sims in Support of Applicant's Opening Testimony re TSE and TSLN	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1127	TN # 202614 Declaration of Robert J. Dooling in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1128	TN # 202615 Declaration of Clint Helton in Support of Applicant's Opening Testimony Declaration	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1129	TN # 202616 Declaration of Jerry Salamy in Support of Applicant's Opening Testimony.pdf Declaration of Jerry Salamy in Support of Applicant's Opening Testimony in Support of Air Quality, Public Health, and Alternatives	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1130	TN # 202626 Declaration of Stephen O'Kane in Support of Applicant's Opening Testimony	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
1131	TN # 202632 Applicant's Submittal of Correspondence re Air Quality	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1132	TN # 202635 Applicant's Opening Testimony re HBEP; FSA Comments Applicant's Opening Testimony re HBEP; FSA Comments, dated June 30, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1133	TN # 202669 Applicant's Prehearing Conference Statement, dated July 7, 2014 Applicant's Prehearing Conference Statement, dated July 7, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1134	TN # 202084 Resolution from the City of HB Supporting Proposed Architectural Improvements for the HBEP	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1135	TN # 202677 Supplemental Declaration of Jerry Salamy Declaration Jerry Salamy 7-10-14	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1136	TN # 202678 Supplemental Declaration of Stephen O'Kane Declaration Stephen O'Kane 7-10-14	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1137	TN # 202680 Applicant's Rebuttal Testimony in Support of the Huntington Beach Energy Project, dated July 11, 2014 Applicant's Rebuttal Testimony in Support of the Huntington Beach Energy Project, dated July 11, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1138	TN # 202710 Applicant's Email to Parties re HBEP Land Use LORS, dated July 14, 2014 Applicant's Email to Parties re HBEP Land Use LORS, dated July 14, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1139	TN # 202774 Final Determination of Compliance for the Huntington Beach Energy Project Final Determination of Compliance for the Huntington Beach Energy Project (issued by the SCAQMD)	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1140	TN # 202788 Applicant's Visual Resources Presentation, dated July 21, 2014 Applicant's Visual Resources Presentation, dated July 21, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1141	TN # 202787 Applicant's Cultural Resources Presentation, dated July 21, 2014 Applicant's Cultural Resources Presentation, dated July 21, 2014	Offered by Applicant (AES Southland Development LLC); Admitted on 7/21/2014.
1142	TN # 202855 Applicant's Prehearing Statement, dated July 31, 2014 Applicant's Prehearing Statement, dated July 31, 2014	Offered by Applicant (AES Southland Development LLC); Admitted.
1143	TN # 202862 Applicant's Responses to Questions in the Order After Prehearing Conference document	Offered by Applicant (AES Southland Development LLC); Admitted.
2000	TN # 202405 Final Staff Assessment	Offered by Commission Staff (Staff); Admitted on 7/21/2014.
2003	TN # 202882 CEC Staff Proposed Conditions of Certification (Revised)	Offered by Commission Staff (Staff); Admitted on 8/6/2014.
4000	TN # 202640 The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age Article from the New England Journal of Medicine	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4001	TN # 202666 SCAQMD Response Letter to Public Comment	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4002	TN # 202657 HBGS Viewed from Neighborhood	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4003	TN # 202658 HBGS Plume on a June Day 2013	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4004	TN # 202656 HBGS as Seen from Edison High Parking lot on a Overcast Day	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
4006	TN # 202797 HBGS Viewed from Newport Pier This is a photograph that was embedded in Rudman's opening testimony that shows how the powerplant dominates sensitive views.	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4007	TN # 202639 Beach Attendance and Bathing Rates for Southern California Beaches	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4009	TN # 202655 FERC Petition for Declaratory Order	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4010	TN # 202637 Unleashing Local Energy	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4011	TN # 202638 Teaching the Duck to Fly	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4012	TN # 202659 Family at Beach in 1999	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4013	TN # 202631 Opening Testimony of Monica Rudman on the Huntington Beach Energy Project	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4014	TN # 202647 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise p5-6	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4015	TN # 202648 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise p7-8	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4016	TN # 202649 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise P8-9	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4017	TN # 202650 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise p12-13	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4018	TN # 202651 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise p14-15	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4019	TN # 202652 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4020	TN # 202653 Potential Impacts of Increased Coastal Flooding in California due to Sea Level Rise p3-4	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4021	TN # 202684 Safeguarding California California's Adaptation Policy Draft Update	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4022	TN # 202686 Estimating Risks to California Energy Infrastructure from Projected Climate Change Intervenor Rudman's evidence on site hazards (Actual Docket Date: 7/14/14)	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4023	TN # 202687 The Impact of Sea Level Rise on the California Coast PIER Research Report which finds that the powerplant in Huntington Beach is vulnerable to sea level rise (Actual Docket Date: 7/14/14)	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4024	TN # 202688 Briefing on Offshore Fracking and Other Well Stimulation Treatments Ca Coastal Commission Briefing and Intervenor Rudman's evidence on Geological Disturbances	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4025	TN # 202689 Examination of possibly Induced Seismicity for Hydraulic Fracturing in the Eola Field, Garvin County Oklahoma Intervenor Rudman's Evidence	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4026	TN # 202701 Letter Re: Coastal Commission's 30413(d) Report for the Proposed AES Southland, LLC HBEP AFC, dated July 14, 2014 From California Coastal Commission	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.

Exhibit Number	Document Title and Description	Disposition
4027	TN # 202690 Dispersion Meteorology for the Fall 2000 and Winter 2001 California Regional PM10/PM2.5 Air Quality Study Episodes Intervenor Rudman's Air Quality evidence	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4028	TN # 202702 Dilution and Dispersion of Inhalable Particulate Matter Intervenor Rudman supplemental evidence	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4029	TN # 202693 Climate Zones by City Evidence that Huntington Beach and Santa Ana have different climates,	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4030	TN # 202685 What is June Gloom Wikipedia document describing Huntington Beach's weather pattern consisting of frequent inversions (Actual Docket Date: 7/14/14)	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4031	TN # 202691 Decision Adopting Local Procurement and Flexible Capacity Obligation for 2015 and Further Refining Resource Adequacy Program Intervenor Rudman's Evidence that the need for HBEP to integrate renewables has not been established	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4032	TN # 202706 Analysis Prepared By ORA for Tarck 2 of the LTPP Proceeding ORA Track 2 Analysis	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4033	TN # 202720 Monica Rudman's DeclarationHuntington Beach Energy Project	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4034	TN # 202291 Monica Rudman Comments: Comments on SCAQMD Revised Preliminary Determination of Compliance	Offered by Intervenor (Monica Rudman); Admitted on 7/21/2014.
4035	TN # 202850 Orange County Sanitation District Budget OCSD Budget which has a map of the service area and treatment plants and which says that determining parameters and opportunities for recycling treated effluent from plant number 2 is an upcoming focus area.	Offered by Intervenor (Monica Rudman); Admitted on 8/6/2014.

APPENDIX C



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Applicant

Jennifer Didlo

AES Southland Development, LLC
690 Studebaker Road
Long Beach , CA 90803
jennifer.didlo@aes.com

Stephen O'Kane

AES Southland Development, LLC
690 Studebaker Road
Long Beach, CA 90803
stephen.okane@aes.com

Applicant Representative

Melissa A. Foster

Stoel Rives, LLP
500 Capitol Mall, Suite 1600
Sacramento, CA 95814
mafoster@stoel.com

Applicant Consultant

Jerry Salamy

CH2M Hill
2485 Natomas Park Dr, Ste 600
Sacramento , CA 95833
jerry.salamy@CH2M.com

Robert Mason, Project Manager

CH2MHill
6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707
robert.mason@CH2M.com

Intervenor

Jason Pyle

9071 Kapaa Drive
Huntington Beach, CA 92646
jasonpyle@me.com

Monica Rudman

20951 Sparkman Lane
Huntington Beach, CA 92646
monica_rudman@hotmail.com

Commission Staff

efiling archive

California Energy Commission
Sacramento, CA
efilingPOSarchive@energy.ca.gov

Felicia Miller, Project Manager

California Energy Commission
Siting, Transmission & Environmental
Protection Division, 1516 Ninth Street,
MS-15
Sacramento, CA 95814
felicia.miller@energy.ca.gov

Kevin W. Bell, Staff Counsel

California Energy Commission
Office of the Chief Counsel, 1516 Ninth
Street, MS-14
Sacramento, CA 95814
kevin.w.bell@energy.ca.gov

Committee

ANDREW McALLISTER, Presiding Member, Commissioner

California Energy Commission
Sacramento, CA

Eileen Allen, Commissioners' Technical Adviser for Facility Siting

California Energy Commission
Sacramento, CA

Eli Harland, Adviser to Commissioner Douglas

California Energy Commission
Sacramento, CA

Hazel Miranda, Adviser to Commissioner McAllister

California Energy Commission
Sacramento, CA

Jennifer Nelson, Adviser to Commissioner Douglas

California Energy Commission
Sacramento, CA

KAREN DOUGLAS, Associate Member, Commissioner

California Energy Commission
Sacramento, CA

Patrick Saxton, Adviser to Commissioner McAllister

California Energy Commission
Sacramento, CA

Susan Cochran, Hearing Adviser

California Energy Commission
Sacramento, CA

Public Adviser

Alana Mathews, Public Adviser
California Energy Commission
Public Advisers Office, 1516 Ninth Street,
MS-12
Sacramento, CA 95814
publicadviser@energy.ca.gov

Public Agency

Aaron Klemm
City of Huntington Beach, Planning &
Building Department
2000 Main Street, 3rd Floor
Huntington Beach, CA 92648
aaron.klemm@surfcity-hb.org

Cathy Fikes
City of Huntington Beach, City Council
2000 Main Street, 4th Floor
Huntington Beach, CA 92648
cfikes@surfcity-hb.org

Jane James
City of Huntington Beach, Planning &
Building Department
2000 Main Street, 3rd Floor
Huntington Beach, CA 92648
jjames@surfcity-hb.org

Scott Hess
City of Huntington Beach, Planning &
Building Department
2000 Main Street, 3rd Floor
Huntington Beach, CA 92648
shess@surfcity-hb.org

Brian Ketterer
California State Parks, Huntington State
Beach
21601 Pacific Coast Highway
Huntington Beach, CA 92646
bketterer@parks.ca.gov

Gary Stewart
Santa Ana Regional Water Quality Board
3737 Main Street, Suite 500
Riverside, CA 92501
gstewart@waterboards.ca.gov

Johanna Stephenson
City of Huntington Beach, City Council
2000 Main Street, 4th Floor
Huntington Beach, CA 92648
johanna.stephenson@surfcity-hb.org

Tom Luster
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105
tluster@coastal.ca.gov

California ISO
Folsom, CA
e-recipient@caiso.com

Jack Kirkorn, Director
Huntington Beach Wetlands Conservancy
21900 Pacific Coast Highway
Huntington Beach, CA 92646
jfk0480@aol.com

Mohsen Nazemi, Deputy Executive Officer
South Coast Air Quality Management
District
21865 Copley Drive
Diamond Bar, CA 91765
mnazemi1@aqmd.gov

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