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HUNTINGTON BEACH ENERGY PROJECT

Final Staff Assessment, Part 1 for the Petition to Amend the Huntington Beach Energy Project Decision



CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown, Jr, Governor

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**HUNTINGTON BEACH ENERGY PROJECT PETITION TO AMEND
(12-AFC-02C)
FINAL STAFF ASSESSMENT – PART 1
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EXECUTIVE SUMMARY

Testimony of John Heiser, AICP

INTRODUCTION

This Final Staff Assessment (FSA) Part 1 is being published by the California Energy Commission staff for the Huntington Beach Energy Project (HBEP) Petition to Amend (PTA) the Energy Commission Decision (Decision) (12-AFC-02C). Part 2 of the FSA will be provided following staff review and incorporation of updated conditions based on the Final Determination of Compliance (FDOC) when it is received from the South Coast Air Quality Management District. FSA Part 2 will include staff's final evaluation of Air Quality and Public Health impacts of the Amended HBEP.

FSA Part 1 contains staff's final, independent, objective evaluation of the engineering, environmental, and safety aspects of the project, and a determination of whether the project conforms to all applicable laws, ordinances, regulations and standards (LORS) for all sections but for Air Quality and Public Health. FSA Part 1 is based on the information provided by the applicant, government agencies, interested parties, independent research, and other sources available at the time the FSA Part 1 was prepared. Upon identifying any potentially significant environmental impacts, staff recommends mitigation measures in the form of conditions of certification for construction, operation and eventual closure of the project. FSA Part 1 contains analyses and responses to comments similar to those normally contained in a Final Environmental Impact Report required by the California Environmental Quality Act (CEQA).

This FSA Part 1 is not a decision document for these proceedings, nor does it contain findings of the Energy Commission related to environmental impacts or the project's compliance with local, state, and federal LORS. FSA Part 1 serves as staff's formal testimony in evidentiary hearings to be held by the Amended HBEP Committee assigned to hear this case. The Committee will hold evidentiary hearings and will consider the recommendations presented by the staff, the applicant, intervenors, government agencies, and the public, prior to proposing its decision. The full Energy Commission will make the final decision, including findings, after the Committee's publication of its proposed decision.

On September 4, 2015, AES Huntington Beach Energy, LLC, submitted a petition to amend the Decision (12-AFC-02C - the Licensed HBEP). The requested changes to the project are the result of the selection by Southern California Edison (SCE) of the revised AES project in the 2013 Local Capacity Requirements Request For Offers. The PTA revises the nominal capacity of the facility and uses different generation technologies than that permitted in the Licensed HBEP Decision.

PROPOSED PROJECT LOCATION AND DESCRIPTION

The HBEP footprint is located within the existing operating Huntington Beach Generating Station (HBGS), located in Huntington Beach, California at 21730 Newland Street, just north of the intersection of the Pacific Coast Highway (Highway 1) and Newland Street. The site containing boiler units 1-4, is privately owned land and is relatively flat with an approximate elevation of 10 to 14 feet above mean sea level. The project borders a manufactured home/recreational vehicle park 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.

The PTA proposes to modify the previously approved 939-MW power plant to a new configuration that would total 844-MWs. Construction would commence in two phases with the first phase consisting of a natural gas-fired, combined-cycle, air-cooled, 644-MW electrical generating facility. After the first phase combined-cycle power block is operational, phase two construction would begin to add two 100-MW simple-cycle gas turbines (SCGT). The second phase: two LMS-100 PB combustion turbine generators, are currently not under a Power Purchase Agreement (PPA) with SCE. However, AES is requesting to license and install these turbines for future projected needs under the proposed amendment (12-AFC-02C) through a separate PPA with SCE.

No new offsite linear facilities are proposed as part of this project.

If the Amended HBEP is approved by the Energy Commission, construction and demolition activities at the project site are anticipated to take approximately 9 years, lasting through the fourth quarter of 2025. The PTA indicates a construction schedule for the various phases of activities with the combined-cycle, gas turbine (CCGT) phase I, power block 1, anticipated beginning in the second quarter of 2017 with commercial operation of power block 1 during the second quarter of 2020. The demolition of existing units 3 & 4 is estimated to begin during the 2nd quarter of 2020 and continue to the 2nd quarter for 2022. Construction of the SCGT phase 2, power block 2, is anticipated to begin during the first quarter of 2022 with commercial operation occurring the first quarter of 2024. Existing HBGS units 1 and 2 would then be demolished to their steam turbine decks.

ENERGY COMMISSION AMENDMENT REVIEW PROCEDURES

Approval for a thermal power plant with a generating capacity of 50-MWs or greater falls under the regulatory oversight of the Energy Commission (Pub. Resources Code § 25500, et seq.). As such, the Energy Commission is the lead agency under CEQA. The Energy Commission's certified regulatory program provides the environmental analysis that satisfies CEQA requirements. In fulfilling this responsibility, Energy Commission staff provides an independent assessment of the project's engineering design, evaluates its potential effects on the environment and on public health and safety, and considers environmental justice populations, and determines whether the project is in conformance with all applicable local, state, and federal LORS. LORS compliance and determinations of key federal Clean Air Act and Clean Water Act requirements are made by staff's active coordination with, and incorporation of, other regulatory agencies and their findings (such as the South Coast Air Quality Management District (SCAQMD))

and its Final Determination of Compliance (FDOC)). The result of staff's research, collaboration and comprehensive process of discovery and analysis are recommendations for mitigation requirements to mitigate any significant adverse environmental effects resulting from the proposed HBEP and the demolition activities removing the existing turbines and associated equipment.

PUBLIC AND AGENCY COORDINATION AND OUTREACH EFFORTS

PUBLIC AND AGENCY NOTICE AND OUTREACH

On September 18, 2015, the Energy Commission staff sent a notice of receipt and a copy of the HBEP PTA to all local, state, and federal agencies that might be affected by the proposed project, and included information on how agencies that administer LORS that are applicable to the proposed project can comment and participate in the proceeding.

Additionally, on October 30, 2015, Energy Commission staff provided notices to property owners within 1,000 feet of the proposed site and within 500 feet of a linear facility (such as transmission lines, gas lines and water lines). These notices informed the public of the Commission's receipt and availability of the PTA, the Energy Commission's siting certification process, provided information on how the public can comment and participate in the proceeding, as well as provided a brief description of the project, and a link to a Commission-maintained project website (http://www.energy.ca.gov/sitingcases/huntington_beach_energy/index.html).

Libraries

On November 5, 2015, the Energy Commission staff also sent copies of the Huntington Beach Energy Project AFC to the following libraries:

Huntington Beach Public Library
7111 Talbert Avenue
Huntington Beach, CA 92648

Orange County Public Library HQ
1501 E Street Andrew Place
Santa Ana, CA 92705

Costa Mesa/Donald Dungan Library
1855 Park Avenue
Costa Mesa, CA 92627

Costa Mesa/Mesa Verde Library
2969 Mesa Verde Drive
Costa Mesa, CA 92626

Mary Wilson Library
707 Electric Avenue
Seal Beach, CA 90740

Fountain Valley Library
17635 Los Alamos
Fountain Valley, CA 92708

In addition to these local libraries, copies of the PTA were also made available at the Energy Commission's Library in Sacramento, the California State Library in Sacramento, as well as, state libraries in Eureka, Fresno, Los Angeles, San Diego, and San Francisco.

Energy Commission's Public Adviser's Office

The Energy Commission's outreach program is also facilitated by the Public Adviser's Office (PAO). The PAO requested public service announcements at a variety of organizations, distributed notices informing the public of the Commission's receipt of the Amended HBEP PTA, and invited the public to attend the Public Site Visit, Environmental Scoping Meeting and Informational Hearing on December 8, 2015 in Huntington Beach, California.

Public Workshops

On December 8, 2015 Energy Commission staff conducted a public workshop in Huntington Beach to facilitate public, agency, and intervenor participation. The workshop included discussion of data requests and responses, allowing for a transparent and comprehensive discussion of technical areas related to the proposed project.

Informational Hearing, Scoping Meeting, and Site Visit

The Committee of two Energy Commissioners and a Hearing Advisor overseeing the processing of the Amended HBEP PTA sponsored a Public Site Visit, Environmental Scoping Meeting, and Informational Hearing on December 8, 2015 in Huntington Beach. Representatives of interested agencies, elected officials, and members of the public were invited to find out about, and provide comments on, the project and see the project site.

After publication of the Preliminary Staff Assessment (PSA), a PSA workshop was held at the Huntington Beach Library on July 12, 2016. During the workshop, specific time for public participation was allocated, and public comments were taken. This workshop provided a public forum for the applicant, the public, staff and participating agencies to interact regarding project issues.

Consultation with Local Native American Communities

Energy Commission staff sent written correspondence to the Native American Heritage Commission (NAHC), as well as to a number of Native American tribes who have expressed an interest in being contacted about development projects in the HBEP area. This correspondence served as an invitation for tribes to consult on the project.

Tribal Consultation

A check of the NAHC sacred lands files resulted in negative findings within a one-half-mile radius of the proposed project. Staff sent letters to all of the NAHC-listed tribes for the project vicinity, inviting them to comment on the proposed project and offered to hold face-to-face consultation meetings if any tribal entities so requested. 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 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.

Provisions for avoidance and monitoring are contained in Conditions of Certification **CUL-6** and **CUL-7**.

RESPONSE TO COMMENTS

Several public agencies and one public member filed comments on the project. (see **Executive Summary - Table 2** below). Staff has addressed these comments within each section of the FSA.

COASTAL COMMISSION COMMENTS

The Coastal Commission has submitted comments to the PSA in the form of a report entitled “Coastal Commission’s § 30413(d) Report for the Petition to Amend Application for Certification #12-AFC-02C – proposed Huntington Beach Energy Project by AES Huntington Beach Energy, LLC.” These comments include recommendations of the Coastal Commission that affect several technical areas, including Land Use, Biology, Geology, Soil and Water, and Traffic and Transportation. Responses to those specific comments can be found in the identified sections of the FSA Part 1. The document submitted by the Coastal Commission is not, however, a Report under Section 30413(d).

The Huntington Beach Energy Project site is within in the Coastal Zone and therefore subject to the Coastal Act.¹ Were the Coastal Commission to exercise its permitting authority when the Application for Certification (AFC) was filed, it would have reviewed the project against the policies of the city of Huntington Beach’s Local Coastal Program (LCP), general plan, and land use ordinances as well as the Coastal Act.

The Coastal Commission’s permitting authority is in turn subject to the Energy Commission’s jurisdiction over power plants.² 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.

On April 14, 2005, the Energy Commission and the Coastal Commission entered into a Memorandum of Agreement, the purpose of which was to ensure timely and effective coordination between the Energy Commission and the Coastal Commission during the Energy Commission’s review of an AFC for a proposed site and related facilities under Energy Commission jurisdiction. The agreement recognized the exclusive authority of the Energy Commission to certify sites and related facilities subject to the requirements of the Warren-Alquist Act³, as well as the Coastal Commission’s role in filing a report under Division 20 Section 30413(d) in AFC proceedings⁴.

¹ Public Resources Code § 30000 et. seq.

² Pub. Resources Code, §§ 25500, 30600

³ Public Resources Code Section 25500 et seq.

⁴ Pub. Resources Code §25523(b)

Pursuant to requirements of Sections 25523(b) and 30413(d), and as set forth in the Memorandum of Agreement, and the Coastal Commission is responsible for providing a report to the Energy Commission during the *AFC proceeding* for each project located within the Coastal Zone. However, neither the relevant statutes nor the Memorandum of Agreement impose a requirement of the Coastal Commission to submit a report under section 30413(d) in a proceeding to amend a Final Commission Decision brought under Title 20, California Code of Regulations, Section 1769.

The scope of the analysis conducted by staff in a proceeding brought under Section 1769 is limited to an evaluation of the incremental impacts, if any, of the proposed modifications to the project on the environment, as well as a determination of the consistency of the proposed modifications with the applicable LORS. The analysis of the proposed changes must be consistent with the requirements of CEQA Guidelines section 15162, which limits additional environmental review to any “substantial changes” that will result in greater environmental impacts than what was analyzed in the Final Decision. Under section 15162, the Energy Commission may rely on the Final Decision for areas that will not have substantial changes. Here, staff has concluded that the proposed modifications to the project do not include any “substantial changes” that would result in any new significant environmental impacts or a substantial increase in the severity of previously identified significant effects that would require additional analysis.

In accordance with § 1744(e) of the Commission’s regulations, staff gives due deference to a local agency’s assessment. As section 1744(e) states:

“Comments and recommendations by an interested agency on matters within that agency’s jurisdiction shall be given due deference by Commission staff.”

Due deference must be given in circumstances where an interested agency provides substantial evidence on matters within that agency’s jurisdiction that would justify a recommended change or addition to the Commission’s Final Decision on a project. To give “due deference” to an interested agency is not to say that the Commission must blindly follow the recommendations of that agency. Pursuant to § 1748(e) of the Commission’s regulations:

“The proponent of any additional condition, modification, or other provision relating to the manner in which the proposed facility should be designed, sited, and operated in order to protect environmental quality and ensure public health and safety shall have the burden of making a reasonable showing to support the need for and feasibility of the condition, modification, or provision. “

Here, the Coastal Commission had previously submitted comments and recommendations on the Commission’s Final Decision on the Huntington Beach Energy Project that included additional conditions of certification which were accepted and implemented where feasible. However, some of the recommendations of the Coastal Commission were rejected as being infeasible or not otherwise supported by the evidentiary record, recommendations that are repeated in the Coastal Commission’s latest comments. While due deference should certainly be afforded to the Coastal Commission, it would be improper to re-open the underlying evidentiary proceeding and

re-litigate those issues that have been previously addressed, or implement measures that are not supported by the evidentiary record.

One overarching concern in the Coastal Commission's comments is potential for the project to impact coastal wetlands resources. Energy Commission staff shares this concern, and has proposed Conditions of Certification to ensure that any potential impacts to all coastal resources have been fully mitigated. However, the original Energy Commission Final Decision found that no wetlands existed on the HBEP site or project-related parking areas. The evidence introduced at the original AFC Hearing demonstrated that the project owner conducted a wetlands delineation, which was confirmed by staff, concluding that there were no wetlands on the HBEP site or project-related parking areas. The conclusion of both the project owner's consultant and Energy Commission staff is consistent with the Coastal Commission's own definition of wetlands. There is no new information that was unknown, or could not have been introduced, in the original proceeding, and no physical changes associated with the HBEP related to wetlands on the project site or project-related parking areas that would justify the re-opening of the final decision and re-litigating this issue.

Executive Summary - Table 2
HBEP List of Agency/Public Comments

NAME	DATE(S)	REQUEST TO PARTICIPATE	Other/LORS	ALTERNATIVES	AIR / PUBLIC HEALTH	BIOLOGY / BOTANY / WILDLIFE	CULTURAL RESOURCES	COMPLIANCE CONDITIONS	CUMULATIVE IMPACTS	GEOLOGY/PALEONTOLOGY	HAZARDOUS MATERIALS	HOURS OF OPERATION	INTAKE AND OUTFALL PIPELINES	NOISE / CONSTRUCTION NOISE	PROJECT DESCRIPTION	PUBLIC HEALTH	TRANSMISSION LINE SAFETY & NUISANCE	TRANSMISSION SYSTEM ENGINEERING	SOCIECONOMICS	SOIL & WATER RESOURCES	TRAFFIC/LAND USE	VISUAL RESOURCES	WASTE MANAGEMENT	WORKER SAFETY/FIRE PROTECTION
City of Huntington Beach	11/23/15		x								x			x	x						x	x		
Coastal Commission	3/11/16					x			x	x		x		x										
CAISO	12/3/15		x	x																				
Huntington Beach Wetlands Conservancy	04/18/16					x								x								x		
Mike M. Trelles	07/05/16				x						x			x		x					x			
AES – Project Owner	7/21/16			x	x	x	x	x		x					x	x	x	x		x	x	x	x	
City of Huntington Beach	07/22/16		x		x									x	x					x	x	x		x

NAME	DATE(S)	REQUEST TO PARTICIPATE	Other/LORS	ALTERNATIVES	AIR / PUBLIC HEALTH	BIOLOGY / BOTANY / WILDLIFE	CULTURAL RESOURCES	COMPLIANCE CONDITIONS	CUMULATIVE IMPACTS	GEOLOGY/PALEONTOLOGY	HAZARDOUS MATERIALS	HOURS OF OPERATION	INTAKE AND OUTFALL PIPELINES	NOISE /CONSTRUCTION NOISE	PROJECT DESCRIPTION	PUBLIC HEALTH	TRANSMISSION LINE SAFETY & NUISANCE	TRANSMISSION SYSTEM ENGINEERING	SOCIECONOMICS	SOIL & WATER RESOURCES	TRAFFIC/LAND USE	VISUAL RESOURCES	WASTE MANAGEMENT	WORKER SAFETY/FIRE PROTECTION
CASIO	08/09/16			x																				
California Coastal Commission	8/15/16					x								x							x			
AES – Project Owner	8/25/16			x																				

PROJECT BACKGROUND

The Amended HBEP is proposed as an amendment to the Decision for the Licensed HBEP. The amended proposal is to replace the existing power block technology with more efficient and current turbine technology along with the supporting equipment and infrastructure.

As with the Licensed HBEP, the Amended HBEP facility would be air-cooled, eliminating the need for large quantities seawater for once-through cooling used on the existing HBGS. The minimal potable water necessary for HBEP's construction, operational process, and sanitary purposes would be provided by the city of Huntington Beach, which has provided a will-serve letter indicating there is sufficient supply of potable water to accommodate the Amended HBEP. Alternative water sources, including potential use of reclaimed water to support the HBEP, were analyzed and determined to be infeasible. During operation, storm water and process wastewater would be discharged into a retention basin and then discharged to the ocean via the existing outfall. Discharge flows would substantially decrease compared to existing conditions due to decreased plant water use, and all discharges would meet ocean discharge standards. Sanitary wastewater would be conveyed to the Orange County Sanitation District through an existing sewer connection.

PROJECT OBJECTIVES

The PTA describes the applicant's objectives for the Amended HBEP proposal, which are summarized as follows:

- Provide efficient, reliable and predictable power supply by using combined-cycle, natural gas-fired combustion turbines to replace the once-through-cooling (OTC) generation;
- With the closure of San Onofre Nuclear Generating Station, proposed facility provides replacement generation for southern California customers;

- Eliminate 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 an 844-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 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.

PROJECT ALTERNATIVES

Project alternatives developed for the Amended HBEP are fully discussed in the **Alternatives** section of FSA Part 1, and include an evaluation of the following:

1. **No Project Alternative:** For the purposes of this analysis, the no-project alternative is considered to be the construction and operation of the previously licensed HBEP in the 2014 Commission Decision.
2. **Alternative Site Configurations:** The Decision evaluated the potential to reconfigure the project elements on the HBGS site to avoid or lessen noise, visual, and coastal impacts. The Decision concluded reconfiguring the site layout would not significantly lessen or avoid any operational noise impacts. Regarding visual impacts, the Decision concluded moving the visually prominent structures within the HBGS site would not reduce their visibility from sensitive viewpoints to any great extent and would not significantly lessen or avoid visual impacts. Related to coastal resources, the Decision concluded impacts identified in a report by the California Coastal Commission on the licensed HBEP primarily relating to Land Use, Noise and Vibration, and Visual Resources, would not be significantly lessened or avoided by reconfiguration of the project site.
3. **Alternative Sites Evaluation:** The Decision concluded the location of the licensed HBEP cannot vary substantially from the HBGS site and established a firm connection between the licensed HBEP and the existing HBGS. The 2014 Decision concluded any alternative site would require conversion of some other area of similar acreage to a new electrical power generation facility.
4. **Alternative Generation Technology:** The Decision evaluated primarily whether alternative generation technologies would reduce air quality impacts of the licensed HBEP. The technologies evaluated included conventional boiler and steam turbine, simple-cycle combustion turbine, alternate equipment, renewable resources, and recycled water.

5. Clutches and Synchronous Condensers: Clutches were not proposed in this petition to amend, and therefore were not reviewed for impacts. However, recent Energy Commission project siting committees have asked whether and when clutches could be installed allowing the generators to operate as synchronous condensers, and what that would mean for the project's impacts.

SUMMARY OF CONCLUSIONS

Staff reviewed alternatives previously analyzed for the licensed HBEP, including alternative site configurations, alternative generation technologies, and the “no project” alternative. Staff has augmented the discussion of preferred resources and included an analysis of clutch technology. Alternatives previously found to be infeasible remain infeasible, and would not substantially reduce one or more significant effects of the amended HBEP. In addition, no new information shows alternatives which are considerably different from those analyzed in the previous staff assessment for the licensed HBEP that would substantially reduce one or more significant effects on the environment. Therefore, in accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the 2014 Commission Decision is necessary for Alternatives. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision with regards to Alternatives and does not need to re-analyze them.

Staff's conclusion is supported by the fact that the Decision for the licensed HBEP contains an acceptable analysis of a reasonable range of alternatives to the project and contains an adequate review of alternative project sites, alternative site configurations, alternative generation technology, and the “no project” alternative.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES AND MITIGATION

Below is a summary of environmental consequences and mitigation proposed in this FSA. This section also provides a summary of information that was not available or included in the Preliminary Staff Assessment (PSA) that is analyzed in the FSA Part 1.

**Executive Summary Table 1-2
Environmental and Engineering Assessment**

Technical Area	Complies with LORS	Impacts Mitigated	Additional Information Required
Air Quality/Greenhouse gases (to be published in Part 2 of the FSA)			
Biological Resources	Yes	Yes	No
Cultural Resources	Yes	Yes	No
Hazardous Materials	Yes	Yes	No
Land Use	Yes	Yes	No
Noise and Vibration	Yes	Yes	No
Public Health (to be published in Part 2 of the FSA)			
Socioeconomics	Yes	Yes	No
Soil and Water Resources	Yes	Yes	No
Traffic & Transportation	Yes	Yes	No
Transmission Line Safety/Nuisance	Yes	Yes	No
Visual Resources	Yes	Yes	No
Waste Management	Yes	Yes	No
Worker Safety and Fire Protection	Yes	Yes	No
Facility Design	Yes	Yes	No
Geology & Paleontology	Yes	Yes	No
Power Plant Efficiency	Yes	Yes	No
Power Plant Reliability	N/A	N/A	No
Transmission System Engineering	Yes	Yes	No

AIR QUALITY/GREENHOUSE GASES:

(Staff conclusions regarding air quality impacts and mitigation will be included in the Amended HBEP FSA Part 2. Permit conditions to be included in the FDOC to be issued by the South Coast Air Quality Management District may affect the staff analysis.)

BIOLOGICAL RESOURCES

The proposed modifications to the amended HBEP would not result in new significant impacts on biological resources, substantial increases in the severity of previously identified significant impacts, or necessitate any material changes to the biological resource conditions of certification identified in the Decision for the approved HBEP (CEC 2014bb) to mitigate impacts or maintain compliance with applicable LORS related to biological resources. Therefore, in accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for biological resources.

Consistent with the Decision for the approved HBEP, with implementation of the previously approved conditions of certification (with minor, immaterial changes), the Amended HBEP would not result in significant direct, indirect, or cumulative impacts to biological resources and would conform to all applicable LORS related to biological resources.

CULTURAL RESOURCES

Staff concludes that the proposed amendment would not result in new significant environmental effects, nor increase the severity of previously identified significant effects. No known, significant cultural resources (that is, historical resources, unique archaeological resources, or tribal cultural resources) have been identified in the Project area of analysis for the Amended HBEP.

Similar to the Licensed HBEP, construction of the project as amended could result in impacts on buried, as-yet-unidentified cultural resources. However, the amended project components appear consistent with the scale of excavation described for the licensed project. Staff therefore concludes that existing Conditions of Certification **CUL-1 through 8** for the HBEP are sufficient to reduce the severity of any inadvertent impacts on buried cultural resources to less than significant. Thus, in accordance with CEQA Guidelines, section 15162, staff concludes that no supplementation of the Decision is necessary for Cultural Resources. Staff also finds that the amended project would conform to applicable LORS relevant to cultural resources.

EFFICIENCY

Similar to the conclusions in the 2014 Decision for the HBEP, the amended HBEP project would create no significant impacts related to power plant efficiency. Therefore, in accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Power Plant Efficiency. The Committee may rely upon the analysis and conclusions of the Decision with regards to Power Plant Efficiency and does not need to re-analyze them.

The thermal efficiency of the combined-cycle portion of the amended HBEP would compare quite favorably with the efficiency of the licensed combined-cycle HBEP. Furthermore, the efficiency of the simple-cycle units for the amended HBEP would be comparable to the efficiency of other modern simple-cycle units. The needed quantities of natural gas fuel for the amended project would not result in a significant impact on natural gas supplies and resources

FACILITY DESIGN

Similar to the conclusions in the Decision, the amended HBEP project would create no significant impacts related to facility design. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Facility Design. The Committee may rely upon the analysis and conclusions of the Decision with regards to Facility Design and does not need to re-analyze them.

Staff concludes that the amended project would comply with applicable engineering LORS. The same Facility Design conditions of certification contained in the Decision, and presented below, would ensure compliance with these LORS.

GEOLOGY & PALEONTOLOGY

The PTA for the HBEP does not seek to substantially modify the existing Geology and Paleontology conditions of certification. Therefore, in accordance with CEQA Guidelines section, staff concludes that no supplementation to the Decision is necessary for Geology and Paleontology. The Committee may rely upon the analysis and conclusions of the Decision with regards to Geology and Paleontology and does not need to re-analyze them. However, staff proposes a new Condition of Certification **GEO-3** to mitigate potential impacts to public health and safety from tsunamis.

HAZARDOUS MATERIALS MANAGEMENT

The PTA for HBEP proposes to modify the project and would not require substantive changes to the existing set of hazardous materials management conditions of certification. Consistent with the conclusions in the licensed Decision, staff has determined that the potential impacts of the proposed PTA would be less than significant. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Hazardous Materials Management. The committee may rely upon the environmental analysis and conclusions of the Decision with regards to Hazardous Materials Management and does not need to re-analyze them.

Staff determined that by following the existing conditions of certification in the Decision, with minor edits to **HAZ-4**, **HAZ-8**, and **HAZ-9**, hazardous materials storage and use at the amended HBEP would comply with all applicable LORS and would not result in any unmitigated significant potential impacts to the public or environment.

LAND USE

Staff concludes that the proposed amendment to the HBEP license would have no new land use impacts and the mitigation for the original project would still be applicable. This mitigation would not require any substantive changes beyond the minor update to Condition of Certification **LAND-1** to include the additional 1.4 acres that the project owner has acquired from Southern California Edison, increasing the size of the HBEP site from 28.6 acres as licensed to 30 acres as amended. Staff also concludes that the findings of fact from the Decision would still apply to the amended HBEP. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Land Use. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to land use and does not need to re-analyze them.

NOISE AND VIBRATION

Similar to the conclusions in the Decision, the potential impacts from the changes to the HBEP as proposed in the PTA would be less than significant. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Noise and Vibration. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to Noise and Vibration and does not need to re-analyze them.

Conditions of Certification **NOISE-1** through **NOISE-8** contained in the Decision would be sufficient to reduce impacts from the amended project to a less than significant level and to ensure the project would remain in compliance with LORS relating to noise and vibration.

PUBLIC HEALTH

(Staff conclusions regarding the impacts of the Amended HBEP on Public Health will be included in Part 2 of the FSA. Permit conditions to be included in the FDOC to be issued by the South Coast Air Quality Management District may affect the staff analysis.)

RELIABILITY

Similar to the conclusions in the Decision for the HBEP, the amended HBEP would be built and operate in a manner consistent with industry norms for reliable operation and maintain a level of reliability which equals or exceeds reliability of other electric generation power plants, including the licensed HBEP. Also similar to the licensed project, the amended project would create no significant impacts related to power plant reliability. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Power Plant Reliability. The Committee may rely upon the analysis and conclusions of the Decision with regards to Power Plant Reliability and does not need to re-analyze them.

SOCIOECONOMICS

Staff concludes that the proposed amendment to the licensed HBEP would not cause significant direct, indirect, or cumulative adverse socioeconomic impacts on the project area's housing, schools, law enforcement services, and parks. Staff also concludes that the amended HBEP would not induce a substantial population growth or displacement of population, or induce substantial increases in demand for housing, parks, or law enforcement services. Conditions of Certification **SOCIO-1** and **SOCIO-2** from the 2014 Decision would ensure project compliance with state and local LORS.

Staff also concludes that the findings of fact and the conclusions of law from the Decision would still apply to the amended HBEP. Therefore, in accordance with CEQA Guidelines Section 15162, staff concludes that no supplementation to the Decision is necessary for Socioeconomics. The Committee may rely upon the environmental analysis and conclusions of the Decision for Socioeconomics and does not need to re-analyze them.

SOIL AND WATER RESOURCES

The changes sought in the PTA would not result in any substantial modifications to the existing Soil and Water Resources conditions of certification. There are no new significant environmental effects or any substantial increase in the severity of previously identified significant adverse effects that would require major revisions of the Decision. Nor is there new information of substantial importance that could not have been known in the Decision regarding more severe impacts. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Soil and Water Resources. The Committee may rely on the conclusions of the Decision in analyzing the changes to the project's design, operation,

and performance pursuant to Title 20, section 1769. This section augments the existing record to reflect current environmental conditions and policy considerations.

Staff and petitioner suggest a minor revision to the conditions of certification. **Soil & Water Table 1** summarizes the proposed change.

TRAFFIC AND TRANSPORTATION

Staff reviewed potential traffic and transportation impacts previously analyzed for the licensed HBEP. Staff concludes that the amended HBEP would not result in new significant traffic and transportation effects or increase the severity of previously identified significant effects. In accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the 2014 Commission Decision is necessary for traffic and transportation. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision with regards to traffic and transportation and does not need to re-analyze them.

The amended HBEP would remain in compliance with LORS related to traffic and transportation. Although the proposed amended HBEP would require additional roadway improvements compared to the licensed HBEP, existing Condition of Certification **TRANS-4** would ensure the project owner complies with the city of Huntington Beach's requirements for encroachments into public rights-of-way. Implementation of the amended HBEP could require use of the vacant parcel located across Newland Street and the Plains former oil storage site for construction laydown area and employee parking. Therefore, staff is recommending two new Conditions of Certification: **TRANS-8** (approval of pedestrian access and crossings) and **TRANS-9** (coastal zone parking requirements).

TRANSMISSION LINE SAFETY AND NUISANCE

The PTA for the licensed HBEP proposes project modifications that would not change the Transmission Line Safety and Nuisance (TLSN) conditions of certification as already approved. These certification requirements were intended in the Decision to ensure that any transmission line safety and nuisance impacts would be less than significant. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for TLSN. The Committee may rely upon the environmental analysis and conclusions of the Decision regarding TLSN and does not need to re-analyze them. Staff's assessment shows that the proposed design and operational plan would not affect the ability of the Amended HBEP to comply with LORS given that the previously-approved conditions of certification would be retained.

TRANSMISSION SYSTEM ENGINEERING

The proposed transmission facilities between the new generators at the HBEP and SCE Huntington Beach Switching Station, including the step-up transformers, 230 kV overhead transmission lines and terminations, are acceptable and would comply with all applicable LORS. The HBEP interconnection with the transmission grid would not require additional downstream transmission facilities (other than those proposed by the applicant) that require CEQA review.

The HBEP generation output is less than the generation output of the project as approved in the 2014 Decision. The HBEP would not cause additional downstream transmission impacts other than those identified in the Queue QC5 Phase II Interconnection Study Report Dated December 3, 2013, from California Independent System Operator. The Study Report is still valid and no new study would be required.

Staff proposes no changes to Conditions of Certification TSE 1-5. The HBEP, as amended, would comply with LORS.

VISUAL RESOURCES

Staff reviewed potential visual resources impacts previously analyzed for the HBEP. Because the amended HBEP would change the types, sizes, and massing of power plant structures on the site, staff evaluated how those changes could affect views of the project site for the key observation points closest to the project site. Staff concludes that the amended HBEP would not result in new significant adverse impacts on visual resources or increase the severity of previously identified significant effects. The amended HBEP would not cause any inconsistencies with visual resources LORS identified in the Decision. The amended HBEP does not change the “Findings of Fact” or “Conclusions of Law” for visual resources that are contained in the Decision.

WASTE MANAGEMENT

The PTA proposes to modify the project, resulting in changes to an existing Waste Management Condition of Certification. Similar to the conclusions in the licensed HBEP Decision, the potential impacts of the proposed PTA would be less than significant if mitigated in accordance with the new and adopted conditions of certification. Therefore, in accordance with the CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Waste Management. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to Waste Management and does not need to re-analyze them.

The city of Huntington Beach would be responsible for waste conservation programs within the city's limits. Therefore Condition of Certification **WASTE-5** would be modified to have the project owner provide a Construction and Demolition Debris Waste Reduction and Recycling Plan to the compliance project manager (CPM) and the city of Huntington Beach.

The amount of waste generated by the amended HBEP would not significantly impact nonhazardous or hazardous landfill capacity. As with the licensed HBEP, the amended HBEP would be consistent with the applicable waste management LORS, if staff's approved conditions of certification are implemented.

WORKER SAFETY AND FIRE PROTECTION

The PTA proposes to modify the project which will not necessitate modification to the existing set of Worker Safety and Fire Protection conditions of certification. Similar to the conclusions in the Decision, the potential impacts of the proposed PTA would be less than significant. Therefore, in accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Worker Safety and Fire Protection. The committee may rely upon the environmental analysis and conclusions of the Decision with regards to Worker Safety and Fire Protection and does not need to re-analyze them.

Staff determined that the LORS applicable to the project remain the same since the Decision. Staff further proposes two new Conditions of Certification **WORKER SAFETY-7** and **-8. WORKER SAFETY-7** would clarify that conformance to the recommended practices of fire protection standard NFPA 850 is required, while **WORKER SAFETY-8** would identify fire safety requirements for the proposed natural gas compressor building.

CUMULATIVE IMPACTS

Preparation of a cumulative impact analysis is required under CEQA. In the CEQA Guidelines, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts”⁵. Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects is “cumulatively considerable.”⁶ Such incremental effects are to be “viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”⁷ Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

CEQA also states that both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, “but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.”⁸

⁵ Cal. Code Regs., tit. 14, § 15130(a)(1)

⁶ Cal. Code Regs., tit. 14, § 15130(a)(2)

⁷ Cal. Code Regs., tit. 14, § 15164(b)(1)

⁸ Cal. Code Regs., tit. 14, § 15130(b)

DEFINITION OF THE CUMULATIVE PROJECT SCENARIO

Cumulative impacts analysis is intended to identify past, present, and probable future projects that are closely related either in time or location to the project being considered, and consider how they have harmed or may harm the environment. Most of the projects on the Master Cumulative Project List below are required to undergo their own independent environmental reviews under CEQA. Staff developed the list by contacting planning staff with the city of Huntington Beach, Costa Mesa, New Port Beach, Fountain Valley, Seal Beach, Cypress, Long Beach and surrounding jurisdictions in Orange County. Staff also conducted a review of project information from other agencies, including the California Department of Transportation, and the CEQANet database to develop a list of past, present, and reasonably foreseeable projects.

Under CEQA, there are two acceptable and commonly used methodologies for establishing the cumulative impact setting or scenario: the “list approach” and the “projections approach.” The first approach would use a “list of past, present, and probable future projects producing related or cumulative impacts.”⁹ The second approach is to use a “summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.”¹⁰ This FSA uses the “list approach” for purposes of state law to provide a tangible understanding and context for analyzing the potential cumulative effects of the proposed project. All projects used in the cumulative impacts analyses for this FSA are listed in the cumulative projects table (**Executive Summary Table 2**), and locations are shown on **Executive Summary Figure 1**.

APPROACH TO CUMULATIVE IMPACT ANALYSIS

This FSA evaluates cumulative impacts within the analysis of each resource area, following three steps:

- Define the geographic scope of cumulative impact analysis for each discipline, based on the potential area within which impacts of the amended HBEP could combine with those of other projects.
- Evaluate the effects of the amended HBEP in combination with past and present (existing) projects within the area of geographic effect defined for each discipline.
- Evaluate the effects of the amended HBEP with foreseeable future projects that occur within the area of geographic effect defined for each discipline.

⁹ Cal. Code Regs., tit. 14, § 15130(b)(1)(A)

¹⁰ Cal. Code Regs., tit. 14, § 15130(b)(1)(B)

Executive Summary - Table 2
HBEP Amended Cumulative Project List

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
1	Huntington Beach Generating Station Demolition (Demolition of Units 3 & 4)	Demo/removal of Units 3 & 4 from the existing Huntington Beach Generating Station.	Huntington Beach Generating Station, Huntington Beach	0.05	Demo estimated Q2 2020 to Q2 2022 (24 mo.)
2	Poseidon Desalination Plant	A 50-million gallon-per-day seawater desalination facility located on 11-acre portion of the existing Huntington Beach Generating Station (HBGS) facility. Project would use existing HBGS seawater intake and outfall pipelines for operations.	21730 Newland St, Huntington Beach	0.22	Planning and in review with the California Coastal Commission
3	Magnolia Oil Storage Tank and Transfer Facility Demolition and Removal	Demolition and removal of three empty above ground crude oil storage tanks and ancillary site improvements.	21845 Magnolia St, Huntington Beach	0.35	In Progress
4	Newland St Residential (Pacific Shores)	Develop and subdivide former industrial site to residential with 204 multi-family residential units and two-acre public park.	21471 Newland St, Huntington Beach	0.40	Completed
5	Remedial Action Plan for Ascon Landfill Site	Remedial Action Plan (RAP) includes partial removal of waste materials and construction of protective cap over remaining waste materials.	Magnolia St and Hamilton Ave, Huntington Beach	0.43	Plan Check
6	Hilton Waterfront Beach Resort Expansion	Nine-story tower with 156 new guestrooms, appurtenant facilities, 261 parking spaces, a loading dock and other back-of-house facilities.	21100 Pacific Coast Hwy, Huntington Beach	1.02	Plan Check
7	Brookhurst Street Bridge Preventative Maintenance Project	Repair and rehabilitate the Brookhurst Street Bridge in the city of Huntington Beach.	Brookhurst St Bridge, Huntington Beach	1.11	Plan Check

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
8	P2-92 Sludge Dewatering and Odor Control	Build new sludge and odor control facilities at existing Plant 2.	Santa Ana River Channel, Huntington Beach	1.17	Construction scheduled Spring 2016
9	Pacific City	516 condominiums; 8 story-250-room hotel, spa and health club; and 191,100 sq. ft. visitor-serving commercial with retail, office, restaurant, cultural, and entertainment	21002 Pacific Coast Hwy, Huntington Beach	1.26	Under Construction
10	Pierside Pavilion Expansion	Proposes to construct a connecting four-story, mixed-use, visitor serving/office building and storefront extension.	300 Pacific Coast Hwy, Huntington Beach	1.51	Plan Check
11	The Strand	Retail, restaurants, offices, and a 149-room hotel.	155 5th St, Huntington Beach	1.63	Completed
12	Beach Walk	173 multi-family apartment units within a 4-story building, a 5-level parking structure, public and private open space areas.	19891 & 19895 Beach Blvd, Huntington Beach	2.10	Completed
13	LeBard Park and Residential Project	9.7-acre surplus school site for public recreation and single-family residential uses.	20461 Cramer Ln, Huntington Beach	2.16	Approved
14	Truewind-Former Wardlow School Site	49 detached single-family residential units on an 8.35-acre site.	9191 Pioneer Dr, Huntington Beach	2.16	Under Construction
15	Brookhurst Street and Adams Avenue IIP	Widening of the Brookhurst St/Adams Ave intersection in all directions.	Brookhurst St and Adams Ave, Huntington Beach	2.38	Draft Environmental Impact Report (DEIR)
16	Lighthouse Project	89-unit (49 residential units, 40 live/work units), three-story mixed-use development. 332-space parking garage, 2 acres of common open space.	1620-1644 Whittier Ave, Costa Mesa	2.42	Initial Study (IS)/Mitigated Negative Declaration (MND)
17	Ebb Tide Residential Project	Demolition of 73 mobile home spaces, three fixed structures and related surface improvements and the development of 81 single-family detached condominium units.	Placentia Ave and 16th St, Newport Beach	2.96	MND

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
18	Fairwind- Former Lamb School Site	80 detached single-family residential units on a 11.65-acre site	10251 Yorktown Ave, Huntington Beach	2.96	Under Construction
19	Westside Gateway Project	Seeking approval to redevelop a 9-acre project site with a mix of 177 dwelling units (residential lofts and live/work). Redevelopment includes demolition of all existing buildings and parking areas.	671 W. 17th St, Costa mesa	3.20	Under Construction
20	Beach and Ellis - Elan Mixed Use	274 units (26 studio, 123 one-bedroom, 6 live-work, 119 two-bedroom units of which 27 are affordable units) also includes: 8,500 sq. ft. commercial, 17,540 sq. ft. public open space and 31,006 sq. ft. residential private open space.	18502, 18508-18552 Beach Blvd, Huntington Beach	3.37	Under Construction
21	Newport Beach City Hall Reuse Project- Now called the "Lido House Hotel"	Four story, 130-room hotel set on a 4.25-acre site that formerly housed the Newport Beach City Hall.	3300 Newport Blvd, Newport Beach	3.45	IS/ND
22	2277 Harbor Boulevard Project	Proposal involves demolishing existing 236-room motel and the construction of a four-story, 224-unit luxury apartment project.	2277 Harbor Boulevard, Costa Mesa	3.50	IS/MND
23	Mesa Verde East Project	Demolition of existing site improvements and construction of a 10-unit, 2-story, detached residential development.	Adams Avenue & Mesa Verde Dr. East, Costa Mesa	3.69	Notice of intent to adopt negative declaration
24	Oceana Apartments	Four story apartment building with 78 affordable housing units for income levels at 30 to 60 percent of Orange County median income on 2-acre site.	18151 Beach Blvd, Huntington Beach	3.75	Under Construction
25	Bolsa Chica Roadway Embankment Reconstruction Project	Install pedestrian safety cable rails and metal beam guardrails along State Route 1 in Huntington Beach.	SR 1 (Pacific Coast Hwy) from Warner Ave to Seapoint Ave, Huntington Beach	3.95	IS/ND

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
26	Huntington Beach Senior Center	One-story senior center on an undeveloped portion of Central Park. Approximately 227 parking spaces will be provided for visitors and City vehicles.	Central Park (5-acre area; SW of the intersection of Goldenwest St and Talbert Ave)	4.14	Under Construction
27	Hyundai Motor America Corporate Campus Project	Expand existing corporate headquarters with a 469,000-sq. ft. campus	10550 Talbert Ave, Fountain Valley	4.39	Completed
28	Vision 2020 Facilities Master Plan	1,238,542 sq. ft. of academic, administrative, residential, and parking facilities on Orange Coast College campus.	2701 Fairview Rd, Costa Mesa	4.41	Unknown
29	Well #6 Colored Water Treatment Plant (WTP)	Construct WTP within the next two years.	Harbor Blvd at Gisler Ave, Costa Mesa	4.48	Unknown
30	Fountain Valley Civic Center Specific Plan	Build Ayres Hotel, 88 residential units (27 single-family, 61 townhomes), and 2,300 sq. ft. of retail space on 8.62-acres.	Brookhurst St and Slater Ave, Fountain Valley	4.64	Unknown
31	Costa Mesa High School Sports Complex	Construct sports complex with 997-seat bleachers, replacing existing track and field with synthetic field and rubber track, and provide various associated facilities.	2650 Fairview Rd, Costa Mesa	4.68	Unknown
32	Back Bay Landing Project	New reservoir foundation, install underground pipelines	East Coast Hwy at Bayside Dr, Newport Beach	4.76	Under review with California Coastal Commission
34	Warner-Nichols Project	Demolish six buildings	Warner Ave at Nichols Ln, Huntington Beach	4.92	Adopted
35	Beach Blvd and Warner Ave Intersection Improvement Project	Construct westbound right turn lane on Warner Ave at intersection and associated improvements including new 5 ft. wide, 15 ft. long sidewalk along west side of A Lane.	Intersection of Beach Blvd and Warner Ave, on the north side of Warner Ave from Beach Blvd to the alley between A Lane and B Lane,	4.92	Adopted

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
			including portions of the adjacent commercial properties to the north at 16990 Beach Blvd, 8021 Warner Ave, and 8071 Warner Ave.		
37	Upper Newport Bay-East Bluff Drainage Repair Project	Drainage improvements and erosion repair within bluff on E side of Upper Newport Bay.	E of Back Bay Dr and W of Vista Del Oro, Newport Beach	5.37	Proposed
38	Yakult USA Manufacturing Facility	77,000 sq. ft. manufacturing facility on 8.8-acres.	17256 Newhope St, Fountain Valley	5.48	Completed
39	Parkside Estates	111 single-family residences; 23-acres preserved, restored and enhanced open space; 1.6-acre neighborhood park; public trails; and water quality treatment system.	W side Graham St, S of Warner Ave, along E Garden Grove Wintersburg Flood Channel 17221 (S of Greenleaf Ln), Huntington Beach	5.67	Planning
40	Ganahl Hardware Store and Lumber Yard	65,263 sq. ft. building materials store with administrative offices and 286 parking spaces.	Bristol St and Northbound Newport Blvd, Huntington Beach	5.74	Completed
41	Brightwater	347 single-family units and over 37-acres habitat restoration and trails.	Warner Ave and Los Patos Ave, Huntington Beach	5.77	Under Construction
42	Newport Executive Court Project	Project includes construction of two, 2-story medical office buildings and a 324-space surface parking lot on 4-acres.	Cross Streets: Birch St and Mesa Dr, Newport Beach	5.88	Plan Check
43	General Plan Update EIR (North Newport Center)	Increase the multi-family residential development allocation from 430 units to 524 units on 121-acres.	Newport Beach	5.89	Unknown
44	Monogram Apartments (Formerly Pedigo)	Four-story apartment building with 510 dwelling units and six-level, 862-space parking structure.	7262, 7266, 7280 Edinger Ave and 16001, 17091 Gothard St, Huntington Beach	5.96	Plan Check

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
45	The Boardwalk (Murphy Commons)	487 dwelling units and 14,500 sq. ft. of commercial area on a 12.5-acre site with 1/2 acre public park.	7441 Edinger Ave- Northeast corner of Edinger Ave and Gothard St (Former Levitz Furniture store site)	5.97	Under Construction. First two phases have opened for occupancy.
46	Edinger Walmart	100,865 sq. ft. vacant retail building within an existing commercial center.	SW corner of Goldenwest St and Edinger Ave, Huntington Beach	6.02	Completed
47	Airport Circle Residential Project	45-unit condominium subdivision with open space on 2.5-acre site. Site layout: 8 detached three-story buildings with 4 to 8 attached dwelling units.	16911 Airport Cir. Huntington Beach	6.04	Plan Check
48	The Village at Bella Terra	Costco Wholesale, with gasoline service station and mixed-use retail and residential project. 467 multi-family residential units within four-story building.	7777 Edinger Ave, Huntington Beach	6.06	Completed
49	San Diego Freeway I-405 Improvement Project	One general-purpose lane in each direction on I-405 from Euclid St to the I-605 interchange, add tolled express lane in each direction of I-405 from SR-73 to SR-22 East.	I-405 between SR-73 & I-605, Costa Mesa, Seal Beach	6.06	Unknown
50	Huntington Beach Lofts	Five-story, 385-luxury residential units located above 10,000 sq. ft. of street level retail and commercial uses.	7302-7400 Center Ave, Huntington Beach	6.16	Under Construction
51	Vans Skate Park	Construction of a skate park.	7471 Center Ave, Huntington Beach	6.35	Completed
52	Wyndham Boutique Hotel/High-Rise Residential Project	Demolition of Wyndham Hotel parking garage and construction of a 100-unit condominium tower adjacent to a new 6.5-level parking garage with 1 subterranean level and 5.5 levels above ground.	3350 Ave of the Arts, Costa Mesa	6.53	Approved

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
53	Harmony Cove Marina Development	23-boat slip marina, eating and drinking establishment with outdoor dining area and alcoholic beverage sales, and ancillary uses to marina.	N side of Warner Ave, W of Weatherly Ln- Formerly Percy Dock	6.55	Proposed
54	OC-44 Pipeline Rehabilitation Project	Sip-line existing 42-inch pipeline with new 30-inch Ductile Iron Pipe (DIP). To accommodate these improvements, a pipe jacking operation would be conducted, requiring three access pits.	University Dr and La Vida, Newport Beach	6.61	Approved-Construction 2018-2020
55	Civic Center and Park Project	Construction of park, city hall building, and 450 parking spaces.	Avocado Ave and McArthur Blvd, Newport Beach	6.62	Unknown
56	Uptown Newport Village Specific Plan Project	Mixed-use project with 1,244 residential units, 11,500 sq. ft. retail, and a 2-acre park.	Jamboree Rd and Fairchild Rd, Newport Beach	6.92	Approved
57	Tennis Estates Tree Trimming and Management Plan	Tree Trimming and Management Plan for the Tennis Estates Homeowners Association property in the Coastal Zone.	16380 Wimbledon Ln, Huntington Beach	7.05	In Progress
58	Rofael Marina and Caretaker Facility	Construct marina on 6,179 sq. ft. property.	16926 Park Ave, Huntington Beach	7.12	In Progress. Requires Coastal Development Permit and a Conditional Use Permit.
59	Campus and Jamboree	1,600 residential units (5 to 6-story apartments), 17,000 sq. ft. plus primary retail in Irvine Technology Center, and up to 23,000 sq. ft. accessory retail and/or residential-serving amenities, 1-acre public park, and two 0.5-acre public plazas.	NW corner of Campus and Jamboree, Irvine	7.37	Phase 1 Under Construction (9/26/2015)
60	Mater Dei High School Parking Structure	Three-level parking structure	1202 W Edinger Ave, Santa Ana	7.80	Proposed, 3-5 years 2018 at earliest

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
61	Sunset/Huntington Harbour Maintenance Dredging and Waterline Installation Project	Maintenance dredging and waterline Installation.	Edinger Ave and Sunset Way, Huntington Beach	7.80	Unknown
62	Warner Avenue Widening	Widening to six lanes.	Warner Ave, Santa Ana	8.48	Approved. Construction in four phases. Phase 1 Jan. 2016 to Jan 2017.
63	2801 Kelvin	384-unit apartments.	2801 Kelvin Ave, Irvine	8.70	Under Construction. 18-month construction period
64	Bristol St. Widening	Widening to six lanes.	3.9-mile stretch of Bristol St from Memory Ln to Warner Ave, Santa Ana	8.79	Under Construction. 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.
65	Vista Verde	Build 55-unit project, which is proposing to add 3 additional units to the project	5144 Michelson Dr, Irvine	10.00	Unknown
66	Grand Avenue Widening	Widening to six lanes	Grand Ave, Santa Ana	10.15	Under Construction July 2015 to March 2016.
67	I-5 Central County Improvement Project	Add second carpool lane in each direction on I-5 between the SR-55 and the SR-57.	I-5 between SR-55 and SR-57, cities of Santa Ana, Tustin and Orange.	10.39	Approved. Construction Jan. 2016 to Jan 2017.

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
68	I-5, SR-73 to El Toro Road	Widen 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. 2018 to 2022	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.	10.67	Proposed
69	Alamitos Energy Center	Two natural gas turbine power blocks. Power Block 1: natural-gas-fired combustion turbine generators in combined-cycle configuration, two unfired heat recovery steam generators, one steam turbine generator, air-cooled condenser, auxiliary boiler, related ancillary equipment.. Power Block 2: four simple-cycle combustion turbine generators with fin-fan coolers and ancillary facilities. 21-acre site within larger 71.1-acre Alamitos Generation Station site.	690 N Studebaker Rd, Long Beach	10.74	Application in review
70	Sexlinger Farmhouse & Orchard Residential Development Project	24 single-family homes on 5-acres.	E Santa Clara Ave at Tustin Ave, Santa Ana	11.38	On Hold, CEQA Lawsuit- Possible Appeal
71	Santa Fe Depot Specific Plan	Potential infill development at as many as 11 locations.	Between Walnut and Palmyra Aves, Orange	12.13	Unknown
72	Irvine Center Drive and Alton, NWC.	766-unit apartments.	Northwest corner of Irvine Center Dr and Alton Pkwy, Irvine	12.84	Under Construction. Estimated 24-month construction
73	Great Park Neighborhoods (Heritage Fields)	Residential housing, parks, and sports fields/complex.	Former El Toro Marine Air Station, Irvine	13.12	Unknown

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
74	Pacifica and Spectrum NWC	573-unit apartments	SW corner of Alton Pkwy and Spectrum, Irvine	13.19	Under Construction. 24-month construction
75	Cypress Community College AST	Construct storage tank.	9200 Valley View St, Cypress	14.25	Unknown
76	Recycled Water Distribution System Expansion	Build tertiary treatment facilities and transmission pipeline.	Ridge Route Dr & Moulton Pkwy, Laguna Hills and Laguna Woods	14.66	Approved
77	Coastal Treatment Plant Export Sludge Force Main Replacement	Replacement of 16,600 ft. of two 4-inch iron pipelines, eastern side of Aliso Creek.	Aliso Viejo, Awma Rd at Alicia Pkwy, Laguna Niguel	15.61	Unknown
78	ND-12-02 Aliso Creek Pedestrian Bridge/Service Road	Replace pedestrian bridge with new build.	Laguna Woods	15.91	Unknown
79	Radha Raman Vedic Mandir	Church renovation and additional construction of facilities.	1022 N Bradford Ave, Placentia	17.54	Unknown
80	Robert Diemer Filtration Plant Improvements	New reservoir foundation, install underground pipelines	3972 Valley View, Yorba Linda	19.62	Completed
81	I-5 between Avenida Pico to San Juan Creek Road	Add carpool lane both directions on I-5 between Avenida Pico to San Juan Creek Road. 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 sound walls where needed.	I-5 between Avenida Pico and San Juan Creek Rd, San Clemente, San Juan Capistrano and Dana Point.	21.14	Under Construction 2013 to 2017.

ENVIRONMENTAL JUSTICE

The California Resources Agency recognizes that environmental justice (EJ) communities are commonly identified as those where residents are predominantly minorities or live below the poverty level; where residents have been excluded from the environmental policy setting or decision-making process; where they are subject to a disproportionate impact from one or more environmental hazards; and where residents experience disparate implementation of environmental regulations, requirements, practices, and activities in their communities. Environmental justice efforts attempt to address the inequities of environmental protection in these communities.

An EJ analysis is composed of the following:

- Identification of areas potentially affected by various emissions or impacts from a proposed project;
- Providing notice in appropriate languages (when possible) of the proposed project and opportunities for participation in public workshops to EJ communities;
- A determination of whether there is a significant population of minority persons, or persons below the poverty level, living in an area potentially affected by the proposed project; and
- A determination of whether there may be a significant adverse impact on a population of minority persons or persons below the poverty level caused by the proposed project alone, or in combination with other existing and/or planned projects in the area.

California law defines EJ as “the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”¹¹ All departments, boards, commissions, conservancies and special programs of the Resources Agency must consider EJ in their decision-making process if their actions have an impact on the environment, environmental laws, or policies. Such actions that require EJ consideration may include:

- adopting regulations;
- enforcing environmental laws or regulations;
- making discretionary decisions or taking actions that affect the environment;
- providing funding for activities affecting the environment; and
- interacting with the public on environmental issues.

¹¹ (Gov. Code §65040.12; Pub. Resources Code, §§ 71000-71400)

DEMOGRAPHIC SCREENING ANALYSIS

As part of its CEQA analysis for the Application for Certification for the HBEP, Energy Commission staff used 2010 U.S. Census data to identify the minority populations and the most recent U.S. Census data from the American Community Survey (ACS) to identify below-poverty level populations within the six-mile radius of the HBEP¹². The demographic screening is based on *Environmental Justice: Guidance Under the National Environmental Policy Act* (CEQ, 1997) and *Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses* (US EPA, 1998), which provides staff with information on outreach and public involvement.

The 2010 U.S. Census data staff used to identify minority-based environmental justice populations for **Socioeconomics Figure 1** used in the Decision is still current. As identified in the Decision, there is no minority environmental justice population present in the project's six-mile radius. To determine whether a poverty-based environmental justice population is present, staff used the most currently available poverty data from the ACS, presented in **Socioeconomics Table 1**.

Based on 2010-2014 ACS census data, 10.02 percent of people within the six-mile radius of the amended HBEP are living below the poverty level. Since this is less than the 12.80 percent of people living below the poverty level in Orange County, the population within a six-mile radius of amended HBEP does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act*.

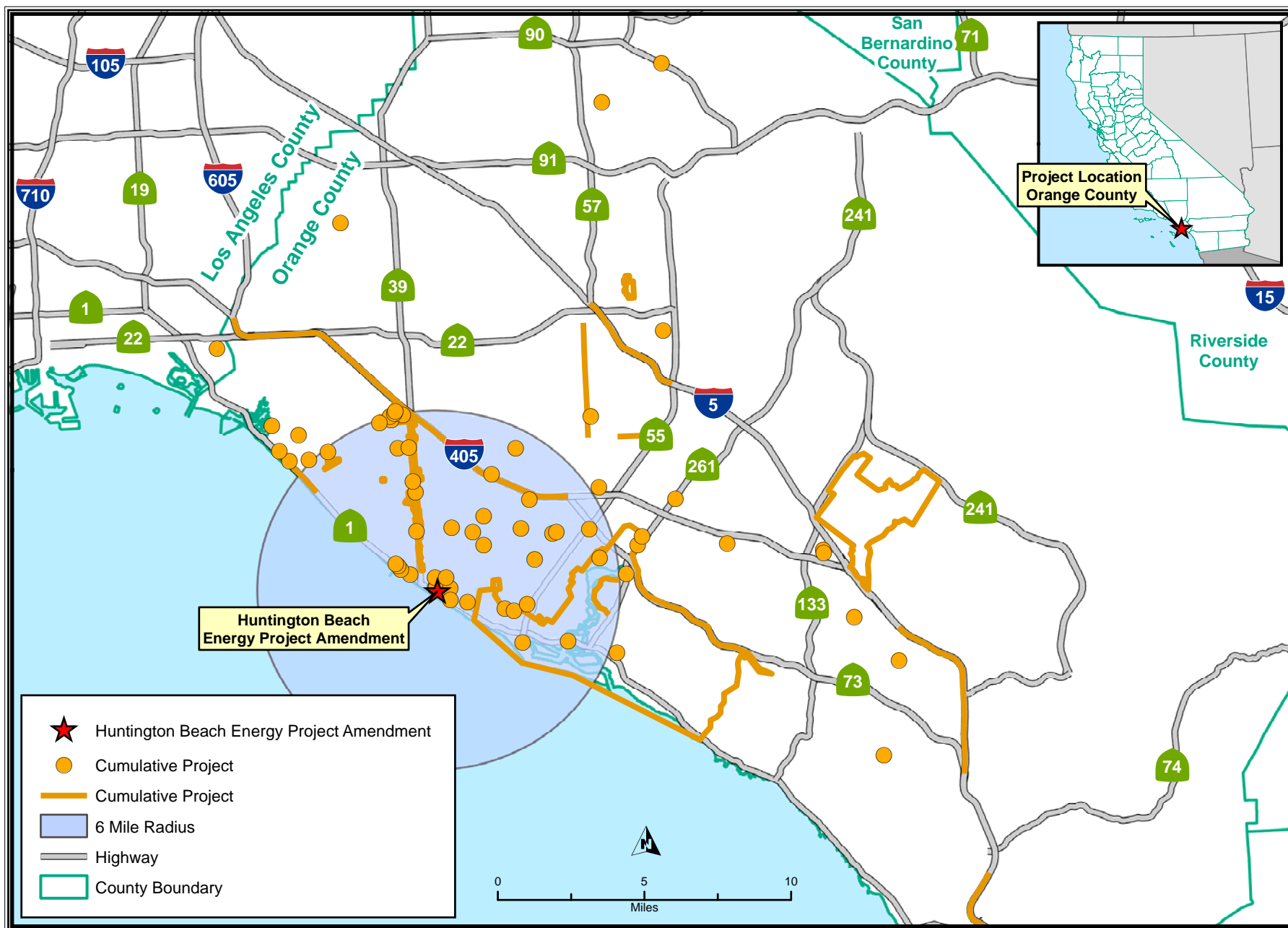
ADDITIONAL ENVIRONMENTAL JUSTICE POPULATION CONSIDERATIONS

Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses (US EPA 1998) encourages outreach to community-based organizations and tribal governments to identify those minority groups who utilize or are dependent upon natural and cultural resources that could be potentially affected by the proposed action. The Public Advisor's Office is responsible for outreach to local communities affected by a project. Cultural Resources staff initiates consultations with tribal governments to discern whether a proposed energy facility may impact cultural resources and related Native American practices.

¹² Demographic screening data is presented in the **SOCIOECONOMICS** section.

EXECUTIVE SUMMARY - FIGURE 1

Huntington Beach Energy Project Amendment - Cumulative Projects Map



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: California Energy Commission, Open Street Map

INTRODUCTION

Testimony of John Heiser, AICP

PURPOSE OF THIS REPORT

This Final Staff Assessment (FSA) Part 1 is the California Energy Commission staff's independent analysis of the proposed Huntington Beach Energy Project (HBEP) Petition to Amend (PTA). This FSA Part 1 is a staff document. It is neither a Committee document, nor a draft decision. The FSA describes the following:

- the proposed project;
- the existing environment;
- staff's analysis of whether the facilities can be constructed and operated safely and reliably in accordance with applicable laws, ordinances, regulations and standards (LORS);
- the environmental consequences of the project including potential public health and safety impacts;
- the potential cumulative impacts of the project in conjunction with other existing and known planned developments;
- mitigation measures proposed by the petitioner, staff, interested agencies, local organizations, and intervenors which may lessen or eliminate potential impacts;
- staff's proposed conditions of certification (conditions) under which the project should be constructed and operated, if it is certified; and
- project alternatives.

Part 2 of the FSA will be provided following staff review and incorporation of updated conditions based on the Final Determination of Compliance when it is received from the South Coast Air Quality Management District. The FSA part 2 will include staff's final evaluation of Air Quality and Public Health impacts of the amended HBEP.

The analyses contained in this FSA Part 1 are based upon information from the: 1) PTA; 2) responses to data requests; 3) supplementary information from local, state, and federal agencies, interested organizations and individuals; 4) existing documents and publications; 5) independent research; and 6) comments at public hearings and workshop(s). The FSA presents conclusions about potential environmental impacts and conformity with LORS, as well as proposed conditions of certification that apply to the design, construction, operation and closure of the facility. The analyses for most technical areas include discussions of proposed conditions. The conditions contain staff's recommended measures to mitigate the project's environmental impacts and to ensure conformance with LORS. Each proposed condition is followed by a proposed means of "verification" to ensure the conditions are implemented.

The Energy Commission staff's analyses were prepared in accordance with Public Resources Code section 25500 et seq. and Title 20, California Code of Regulations section 1701 et seq., and the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.)

ORGANIZATION OF THE FINAL STAFF ASSESSMENT

The FSA Part 1 contains the Executive Summary, Introduction, Project Description, and Project Alternatives. The next 18 chapters contain the environmental, engineering, and alternatives analyses of the proposed project. These chapters are followed by a discussion of facility closure, project construction and operation compliance monitoring plans, and a list of staff that assisted in preparing this report.

The FSA Part 2 will be provided following staff review and incorporation of updated conditions based on the Final Determination of Compliance when it is received from the South Coast Air Quality Management District. The FSA part 2 will include staff's Air Quality and Public Health analyses.

Included in the 18 technical area assessments are discussions of:

- LORS;
- the regional and site-specific setting;
- project specific and cumulative impacts;
- mitigation measures, when appropriate;
- closure requirements;
- conclusions and recommendations; and
- conditions of certification for both construction and operation.

ENERGY COMMISSION SITING PROCESS

The Energy Commission has the exclusive authority to certify the construction, modification, and operation of thermal electric power plants 50 megawatts (MW) or larger. The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies, and federal agencies to the extent permitted by federal law (Pub. Resources Code, § 25500). The Energy Commission must review thermal power plant applications for certification (AFC) to assess potential environmental impacts, including potential impacts to public health and safety, potential measures to mitigate those impacts, and compliance with applicable governmental laws or standards (Pub. Resources Code, § 25519 and § 25523(d)).

The Energy Commission's siting regulations require staff to independently review the AFC, assess whether all of the potential environmental impacts have been properly identified, and whether additional mitigation or other more effective mitigation measures than those proposed by the petitioner are necessary, feasible, and available (Cal. Code Regs., tit. 20, § 1742 and § 1742.5(a)). In addition, staff must assess the completeness and adequacy of the measures proposed by the petitioner to ensure compliance with health and safety standards, and the reliability of power plant operations (Cal. Code Regs., tit. 20, § 1743(b)). Staff is required to develop a compliance plan to ensure that applicable laws, ordinances, regulations, and standards are met (Cal. Code Regs., tit. 20, § 1744(b)).

Staff conducts its environmental analysis in accordance with the requirements of CEQA. No additional environmental impact report is required because the Energy Commission's site certification program has been certified by the Secretary of the California Natural Resources Agency as meeting all requirements of a certified regulatory program (Pub. Resources Code, § 21080.5 and Cal. Code Regs., tit. 14, § 15251 (j)). The Energy Commission is the CEQA lead agency.

Staff prepares a FSA that presents for the petitioner, intervenors, organizations, agencies, other interested parties, and members of the public, the staff's analysis, conclusions, and recommendations. Where it is appropriate, the FSA incorporates comments received from agencies, the public, and parties to the siting case and comments made at the workshops.

Staff provided a 30-day public comment period that following the publication of the PSA. The comment period is also used to resolve issues between the parties and to narrow the scope of adjudicated issues in the evidentiary hearings. During this time, staff will conduct one or more workshops to discuss its conclusions, proposed mitigation, and proposed verification measures. Based on the workshop dialogue and any written comments received, staff may refine its analysis, correct any errors, and finalize conditions of certification to reflect any changes agreed to between the parties. These revisions and changes will be presented in an FSA that will be published and made available to the public and all interested parties.

The FSA is only one piece of evidence that will be considered by the Committee (comprised of two Energy Commission Commissioners who have been assigned to oversee the review this project) in reaching a decision on whether or not to recommend that the full Energy Commission approve the proposed project. At the public evidentiary hearings, all parties will be afforded an opportunity to present evidence and to rebut the testimony of other parties, thereby creating a hearing record on which a decision on the project can be based. The hearing before the Committee also allows all parties to argue their positions on disputed matters, if any, and it provides a forum for the Committee to receive comments from the public and other governmental agencies.

Following the hearings, the Committee's recommendation to the full Energy Commission on whether or not to approve the proposed project will be contained in a document entitled the Presiding Member's Proposed Decision (PMPD). Following publication, the PMPD is circulated in order to receive written public comments. At the conclusion of the comment period, the Committee may prepare a revised PMPD. At the close of the comment period for the revised PMPD, the PMPD is submitted to the full Energy Commission for a decision.

AGENCY COORDINATION

As noted above, the Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and federal agencies to the extent permitted by federal law (Pub. Resources Code, § 25500). However, the Commission staff typically seeks comments from, and works closely with, other regulatory agencies that administer LORS that are applicable to proposed projects. The agencies associated with the HBEP amendment include the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Coastal Commission, State Water Resources Control Board/Regional Water Quality Control Board, California Department of Fish and Wildlife, Caltrans, the California Air Resources Board, the South Coast Air Quality Management District, the city of Huntington Beach and the Huntington Beach Fire Department.

OUTREACH

The Energy Commission's outreach program is primarily facilitated by the Public Adviser's Office (PAO). This is an ongoing process that to date has involved the following efforts:

LIBRARIES

On November 5, 2015, Energy Commission staff sent the HBEP amended AFC to libraries in Huntington Beach, Santa Ana, Costa Mesa, Fountain Valley, Seal Beach, Eureka, Sacramento, Fresno, San Francisco, Los Angeles and San Diego.

On June 24, 2016, Energy Commission staff sent the HBEP amended PSA to libraries in Huntington Beach, Santa Ana, Costa Mesa, Fountain Valley, Seal Beach, Eureka, Sacramento, Fresno, San Francisco, Los Angeles and San Diego.

On October 17, 2016, Energy Commission staff sent the HBEP amended FSA Part 1 to libraries in Huntington Beach, Santa Ana, Costa Mesa, Fountain Valley, Seal Beach, Eureka, Sacramento, Fresno, San Francisco, Los Angeles and San Diego.

INITIAL OUTREACH EFFORTS

The PAO reviewed related information available from the project owner and others and then conducted its own, extensive outreach efforts to identify certain local officials, as well as interested entities, within a five-mile radius around the proposed site for the amended HBEP. These entities include schools; churches; community, cultural and

health-care facilities; day-care and senior-care centers, as well as business, environmental, governmental, and ethnic organizations. By means of e-mail and letters, the PAO notified these entities of the Informational Hearing and Site Visit for the project, held on December 8, 2015 at the Hilton Waterfront Beach Resort located in Huntington Beach California.

The PAO also identified and similarly notified local officials with jurisdiction in the project area. Notices directed the public to the website for more information.

Energy Commission regulations require staff to notice, at a minimum, property owners within 1,000 feet of a project and 500 feet of a linear facility (such as transmission lines, gas lines, and water lines). This was done for the project. Staff's ongoing public and agency coordination activities for this project are discussed under the Public and Agency Coordination heading in the Executive Summary section of the amended PSA.

ENVIRONMENTAL JUSTICE

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on federal agencies to achieve environmental justice as part of their mission. The order requires the U.S. Environmental Protection Agency and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this issue. The agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

For all siting cases, Energy Commission staff conducts an environmental justice screening analysis in accordance with the *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA (National Environmental Policy Act) Compliance Analysis*, dated April 1998. The purpose of the screening analysis is to determine whether a minority or low-income population exists within the potentially affected area of the proposed site.

California Statute, Sections 71000-71400 of the Government Code defines *environmental justice* to mean "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Staff's specific activities, with respect to environmental justice for HBEP, are discussed in the Executive Summary.

PROJECT DESCRIPTION

John Heiser, AICP

INTRODUCTION

The Final Staff Assessment (FSA) Part 1 for the Petition to Amend (PTA) the 2014 Energy Commission Final Decision (Decision) for the Huntington Beach Energy Project (HBEP) contains the analyses of potential environmental effects and engineering factors associated with the development and operation of the project in 18 different technical areas. The HBEP footprint is located within the existing operating Huntington Beach Generating Station located in Huntington Beach, California at 21730 Newland Street, just north of the intersection of the Pacific Coast Highway (Highway 1) and Newland Street.

This section includes information and figures from the PTA for the 2014 Decision and supplemental information filed in support of the AFC, which are part of the project docket and can be accessed by selecting Dockets for this Proceeding at the following web address for reference:

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=12-AFC-02C>

Part 2 of the FSA will be provided following staff review and incorporation of updated conditions based on the Final Determination of Compliance when it is received from the South Coast Air Quality Management District. The FSA part 2 will include staff's final evaluation of, and proposed mitigation for, Air Quality and Public Health impacts of the amended HBEP.

PROJECT SETTING, LOCATION AND SITE DESCRIPTION

On June 27, 2012, AES Southland, LLC, submitted an Application for Certification (AFC) for the HBEP. On October 29, 2014, the Energy Commission approved the AFC for HBEP with the Decision. On September 4, 2015, AES Southland LLC¹ submitted a PTA the Final Decision for HBEP (12-AFC-02).

HBEP, as amended (12-AFC-02C), would replace the existing operational Huntington Beach Generating Station (HBGS) and be constructed on 30 acres (28.6 acres approved in the Decision, plus an additional 1.4 acres of paved area AES acquired from Southern California Edison (SCE)). The HBEP footprint is located within the existing, operating HBGS located in Huntington Beach, California at 21730 Newland Street, just north of the intersection of the Pacific Coast Highway (Highway 1) and Newland Street. The site is privately owned land and is relatively flat with an approximate elevation of 10 to 14 feet above mean sea level. The project borders a manufactured home/recreational vehicle park 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.

¹ AES Southland LLC is now known as AES Huntington Beach Energy, LLC, which is an indirect wholly-owned subsidiary of the AES Corporation

The amended project would total 844 megawatts (MW). Construction would commence in two phases with the first phase consisting of a natural gas-fired, combined-cycle, air-cooled, 644 MW electrical generating facility. After the first phase combined-cycle power block is operational, phase 2 would begin with adding two 100 MW simple-cycle gas turbines (SCGT). No new offsite linear facilities are proposed as part of this project.

The approved project (12-AFC-02) was licensed as a 939 MW power plant consisting of two independently operating, three-on-one, combined-cycle gas turbine power blocks. Each power block would have consisted 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.

The necessity to amend the Decision is the result of the selection by SCE of the revised AES project in the 2013 Local Capacity Requirements Request for offers to provide 644 MW of nominal capacity, with different technology than that permitted in the HBEP Final Decision. The second phase: two LMS-100 PB combustion turbine generators, are currently not under a Power Purchase Agreement (PPA) with SCE. However, AES is requesting to license and install these turbines for future projected needs under the proposed amendment (12-AFC-02C) through a separate PPA with SCE.

Based on this selection by SCE, the PTA would amend the Decision to allow for construction and operation of the HBEP with the following equipment:

- One combined-cycle, gas turbine (CCGT), 644 MW power block consisting of two General Electric (GE) Frame 7FA.05s;
- Proposed stack height of 150 feet for the GE Frame 7FA.05 combustion-turbine generator units;
- Two unfired heat-recovery steam generators equipped with two emission control systems to control CO, NO_x and VOC emissions;
- One steam turbine generator;
- One air-cooled condenser (ACC) and one closed-loop air-cooled heat exchanger;
- One natural gas-fired auxiliary boiler to support the power block;
- Related ancillary equipment;
- In phase two, two GE simple-cycle gas turbine LMS-100 PBs (SCGT) with a nominal capacity of 200 MWs; and
- Proposed stack height of 80 feet for the LMS100 units.

PROJECT DESCRIPTION

The project owner, AES Huntington Beach Energy, LLC, proposes to modify the design of the HBEP in order to construct and operate an 844-megawatt (MW) power plant. Construction would commence in two phases with the first phase consisting of a natural gas-fired, combined-cycle, air-cooled, 644-MW electrical generating facility. After the first phase combined-cycle power block is operational, phase 2 would begin with adding two 100 MW simple-cycle gas turbines (SCGT).

No new offsite linear facilities are proposed as part of this project which would be located on 30 acres (28.6 acres approved in the Decision, plus an additional 1.4 acres of paved area AES acquired from Southern California Edison (SCE).

As part of the amendment, a total of 22 acres of combined construction parking and construction laydown area is proposed at the Plains All-American Tank Farm site. The Plains All-American Tank Farm is located east of HBGS next to the Huntington Beach Channel, adjacent to the Huntington Beach Wetland Preserve/Magnolia Marsh wetlands and adjacent to Magnolia Street. The Plains All-American Tank Farm appears to have been built between 1963 and 1972. The nearly 30-acre site comprises three storage tanks, a pump house and a valve/manifold structure. It is surrounded by a vegetated earthen containment berm. Each tank is located within a shallow retention basin. The licensed HBEP included approximately 1.9 acres of construction parking on the Plains site.

The owner of the Plains All-American Tank Farm site has received a permit from the city of Huntington Beach to remove the storage tanks and grade the site for future, undisclosed development. Access to the tank farm would be from Magnolia Avenue and Banning Street. The project owner is working with the city of Huntington Beach to install a temporary signalized site access road at the intersection of Magnolia Avenue and Banning Street. The access road would be graveled in the areas used for equipment laydown and parking to reduce dust and manage stormwater.

The construction of Power Block 1 would require the removal of the existing Unit 5 peaker (former gas turbine generator). The initial demolition activities of Unit 5 peaker would include the demolition of the foundations, building, small auxiliary mechanical and electrical equipment associated with the Unit 5 peaker, and removal of the fuel storage tanks per the requirements of a Department of Toxic Substances Control Removal Action. The demolition activities of Unit 5 peaker would include the removal of two former fuel oil tanks, associated fuel oil pipelines, asbestos, several support buildings and containment berms. The demolition activities are scheduled to begin during the 1st quarter of 2016 to the 2nd quarter of 2017. This demolition activity of Unit 5 peaker was approved by the Energy Commission in the October 2014 Decision. All of the above demolition activities are addressed in the PTA for review of potential project cumulative impacts.

Removal/demolition of existing Huntington Beach Generating Station Units 3 and 4 would occur in advance of the construction of the Amended HBEP phase 2 SCGT power block. Demolition to remove Units 3 and 4 is anticipated to begin during the 2nd quarter of 2020 and continue through the 2nd quarter of 2022 (TN# 210969), Table 5.1A.60. Existing Huntington Beach Generating Station Units 3 and 4 are licensed through the California Energy Commission (CEC; 00-AFC-13C). Demolition of these units authorized under that license would proceed during the amended HBEP certification process, and is not part of the amended (12-AFC-02C) HBEP project definition.

Existing Huntington Beach Generating Station Unit 1 would be retired in the fourth quarter of 2019 to provide interconnection capacity for the new CCGT units. Unit 2 would be retired either after commercial operation of the HBEP SCGT units or at the final compliance deadline for once-through-cooling intake structures as determined by the State Water Resources Control Board, after which demolition of Huntington Beach Generating Station Units 1 and 2 would commence. The Amendment indicates the demolition of Units 1 and 2 during the 1st quarter of 2024 through the 4th quarter of 2025. The PTA describes under Section 2.2 “Demolition Activities”, the demolition of these units 1 and 2 and their ancillary mechanical and electrical equipment down to the concrete super structure or turbine deck level. The existing reverse osmosis/electrodeionization tanks that are currently in use, would remain in service as part of the Licensed HBEP. Pages 5.13-1 through page 5.13-2 of the PTA indicate the concrete steam turbine deck structures for units 1 and 2 would be demolished down to a height of approximately 30 feet.

In comparison, the licensed HBEP included the demolition of Units 1 and 2 to grade. The AFC (12-AFC-02) for the 939-MW facility indicated, the “Demolition of certain existing Huntington Beach Generating Station support structures and equipment will be completed to facilitate construction and operation of the HBEP. Construction of the HBEP will require the removal of existing Huntington Beach Generating Station Units 1, 2, and 5.

The planned construction and demolition activities of the amended HBEP would occur on a schedule that allows continued operation of the existing HBGS power generation and synchronous condensers to maintain power delivery and grid reliability during construction of the new facilities. The demolition work would require site preparation and grading activities. **Project Description - Figure 1** and **Project Description - Table 1** depict the various demolition and construction phases on the HBGS site.

**Project Description - Table 1
Demolition / Construction Activity Timeline**

Demolition / Construction Activity	Timeline
Demolish Unit 5 and fuel tanks	Q1 2016 - Q2 2017 16 months
Construction Power Block 1	Q2 2017 – Q2 2020 36 months
Commercial Operation Power Block 1	Q2 2020
Demolish Units 3, 4 (under separate approved License and not part of the current amended project)	Q2 2020 – Q2 2022 24 months
Construction Power Block 2	Q1 2022 – Q4 2023 24 months
Commercial Operation Power Block 2	Q1 2024
Demolish Units 1 and 2 to Turbine deck	Q1 2024 – Q4 2025 24 months

If the Amendment to the Decision is approved by the Energy Commission, construction and demolition activities at the project site are anticipated to take approximately 9 years, lasting through the fourth quarter of 2025. The amended application indicated a construction schedule for the various phases of activities with the CCGT phase I, Power Block 1, anticipated beginning in the second quarter of 2017 with commercial operation of Power Block 1 during the second quarter of 2020. Construction of the SCGT phase 2, Power Block 2, is anticipated to begin during the first quarter of 2022 with commercial operation during the first quarter of 2024.

Onsite parking and construction staging areas, as approved under the Decision, have been modified with a reduction of one parking area located along Pacific Coast Highway 1 between Beach Boulevard and Huntington Street.

The Decision required both onsite and offsite laydown and construction parking areas: Approximately 22 acres of construction laydown area and approximately 6 acres at the HBGS to be 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 with no assembly of components at AGS).

Approximately 300 onsite and offsite parking spaces were needed for both demolition workers and during construction. These parking spaces were identified at the following locations:

- Approximately 1.5 acres for 130 parking stalls located onsite, behind the SCE switchyard.
- Approximately 3 acres or approximately 300 parking spaces (existing paved/graveled parking) located adjacent to HBEP across Newland Street.
- Approximately 2.5 acres or approximately 215 existing paved parking stalls located at the corner of Pacific Coast Highway and Beach Boulevard; and
- The Plains All American site. Approximately 22 acres in size to be utilized for both construction parking and construction laydown areas. Parking spaces could range between 170 to 330 stalls depending on the construction laydown area required for each project construction and demolition phase.

Project Description - Figure 2 with both onsite and offsite locations. The amended parking areas and locations: A new entrance to the Plains All American Tank Farm would be from a modified three way intersection at the existing Magnolia Street and Banning Avenue signalized intersection. The project owner is working with the city of Huntington Beach regarding improvements for the current three-way signalized intersection to a temporary four-way signalized intersection with a two-lane entrance/exit at this modified intersection.

The PTA includes the use of a footbridge connecting the Plains All American Tank Farm site to the Amended HBEP site. The use of this footbridge would require the project owner to obtain appropriate easements from the landowner. Absent appropriate easements, construction worker access to the Amended HBEP construction site from the Plains Site would be via Pacific Coast Highway should the footbridge be unavailable; and construction workers would travel on shuttles from the Plains Site to the construction site via Pacific Coast Highway on the route identified in the PTA. (PTA, p. 2-14 to 2-15 (TN# 206087); Project Owner's Response to City of Huntington Beach Comments on PTA, Att. A (TN# 210262)).

As with the Licensed HBEP, the Amended HBEP facility would be air cooled, eliminating the need for large quantities of once-through cooling seawater. The minimal potable water necessary for HBEP's construction, operational process and sanitary purposes would be provided by the city of Huntington Beach, which has provided a will-serve letter indicating there is sufficient supply of potable water to accommodate the Amended HBEP. Alternative water sources, including potential use of reclaimed water to support the HBEP, were analyzed and determined to be infeasible. During operation, storm water and process wastewater would be discharged into a retention basin and then discharged to the ocean via the existing outfall. Discharge flows would substantially decrease compared to existing conditions due to decreased plant water use, and all discharges would meet ocean discharge standards. Sanitary wastewater would be conveyed to the Orange County Sanitation District through an existing sewer connection.

No offsite linear developments are proposed as part of this project. The amended HBEP would connect the 844 MW of electricity through two overhead 230-kilovolt (kV) generation ties connecting each power block to the existing onsite SCE Ellis switchyard. Natural gas is delivered to the HBGS via an existing SoCal Gas 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 would be constructed.

APPLICANT'S PROJECT PURPOSE AND OBJECTIVES

The amended AFC describes the applicant's objectives for the HBEP proposal, which are summarized as follows:

- Provide efficient, reliable and predictable power supply by using combined-cycle, natural gas-fired combustion turbines to replace the once-through cooling (OTC) generation;

- With the closure of San Onofre Nuclear Generating Station, the proposed HBEP would provide replacement generation for southern California customers;
- Eliminate 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 an 844 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 infrastructure and land to minimize land 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.

The HBEP would provide up to 844 MW of power generation capacity to the western Los Angeles Basin Local Reliability Area and would 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*. This policy was adopted by the SWRCB on May 4, 2010, and regulates the use of seawater for power generation plants utilizing the OTC method.

PROJECT FEATURES

Project features would consist of a 30-acre power plant site, which would require both onsite and offsite laydown and construction parking. Approximately 22 acres of construction laydown would be required, and a maximum of 300 parking sites. The power plant, transmission lines, SCE switchyard, and natural gas connection, are located within the city of Huntington Beach within an area designated as Public, in which the Huntington Beach General Plan permits development of public utilities.

Project Description - Figure 3, shows the general arrangement and layout of the proposed facility. The Visual Resources section of this PSA includes a number of visual simulations of the proposed project, before and after construction. The existing HBGS currently has five steam generating units (units 1, 2, 3, 4, and 5). Units 1 and 2 are currently operational; 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 ISO approved a must-run contract on units 3 and 4 to convert to synchronous condensers to provide voltage support to southern Orange County and San Diego in response to the San Onofre Nuclear Generating Station Units 2 and 3 being unavailable for the summer of 2013. An amendment was approved by the Energy Commission on December 7,

2012, to convert units 3 and 4 to synchronous condensers which provide voltage support. Unit 5, a 133 MW peak demand facility, was retired in 2002.

Two 230- kV transmission interconnections would connect HBEP Power Blocks 1 and 2 to the existing onsite SCE Ellis switchyard.

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

Natural gas is delivered via an existing SoCal Gas 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 would be constructed by the project owner.

The project would 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 would 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.

Makeup water for the HBEP power blocks steam cycle would have contaminants removed by passing the service water through a reverse osmosis system followed by a continuous electrodeionization process.

Sanitary wastewater generated by the HBEP would 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 would be collected in an onsite retention basin then discharged to the Pacific Ocean via an existing outfall which services the existing HBGS.

The 442,500 gallon service water/fire water storage tank would 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, would remain in service as part of the fire protection system, but would be modified to meet all LORS for the HBEP and to accommodate the newly constructed facilities.

The construction laydown areas consist of 6 acres at the HBGS, 22 acres of combined parking and laydown at the Plains All American Tank Farm, and 16 acres at the Alamitos Generating Station (AGS) in Long Beach, which would be used for component storage only; no assembly of components would take place at the AGS site. During construction, the large components would be hauled from the construction laydown area at the AGS site to the HBEP site as they are needed for installation.

In addition to the parking facilities described above, the construction laydown area at the Plains All American Tank Farm site would include 35- to 75-ton rubber-tired cranes, excavators with shear attachments, backhoes, paving breaker attachments, front-end loaders, 10-wheeled dump truck for transporting materials, truck tractor driven end-dumps for transporting waste material to appropriate disposal facilities, fork lifts, compactors, bull dozers, water trucks used for dust control, fueling/service vehicles and pick-up trucks. The actual equipment may vary depending on the selected demolition contractor.

The construction materials at the Plains All American Tank Farm have been addressed in the PTA as well as the project owners response to the comment letter from the Huntington Beach Wetlands Conservancy (TN# 211411) docketed on 05/09/2016. The construction laydown activities would include loading and unloading and stacking of construction supplies, preparation and cutting of materials for transport to the HBEP site, and temporary warehousing of material in mobile trailers. The identified materials transported to Plains All American Tank Farm would include concrete, pipe, wire, cable, fuels, reinforcing steel, small tools, and other related construction materials. The welded assembled items would be such that they can be transported by truck from the laydown area on the Plains All-American site to the HBEP site via Magnolia to PCH to Newland. These transported assemblies could be oversized loads. The power turbines, generators, generator step-up transformers, and HRSG modules would arrive by ship or rail at the Port of Long Beach. The large components of the generating units would be hauled directly to the HBEP site for immediate installation. In the event that the heavy equipment arrives but cannot be transported and transferred to the HBEP site, it would be hauled to the Plains All American Tank Farm site. Additional storage space for heavy haul deliveries is also available at the AES Alamitos generating station.

During peak demolition activities at the site, an estimated maximum of 15 tractor-trailer units would leave the site each day to transport waste and debris offsite for salvage, recycle or disposal. It is anticipated that the demolition activities would be conducted during a 10-hour day, six-days a week, using a single shift. However, during critical demolition activities, longer work shifts and additional days would be needed.

Construction activities indicated are based on a single 10-hour shift six -days a week. Overtime and additional shift work may be required to maintain or enhance the construction schedule. The hours of construction activities would be from 7:00 a.m. to 8:00 p.m. with additional hours needed. During the commissioning and startup phase of each power block, some activities may continue 24 hours per day, 7 days a week.

The delivery of fill material required to build the CCGT power block is expected to occur over a 10-month period with an average of 10 trucks per day during a 10-hour work shift six days a week.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

In response to comments made in regards to the Preliminary Staff Assessment (PSA) Project Description, the project owner docketed on 7/21/2016 minor change requests which have been incorporated in the FSA Project Description.

The city of Huntington Beach Department of Planning and Building docketed comments on the PSA on 7/25/2016. Those comments have also been incorporated into the FSA Project Description

NOTEWORTHY PUBLIC BENEFITS

The California Independent System Operator (California ISO) 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-kV transmission line connection. If approved by the Energy Commission, the HBEP would ensure the long-term viability of this existing critical generating location and would provide essential electrical service to the residents of Orange County and Huntington Beach. HBEP's quick-start peaking electric generation capacity would meet peak demand and resource adequacy requirements as identified by AB 380 (Resource Adequacy) and the California ISO.

The proposed HBEP would be air cooled, eliminate the use of OTC seawater currently in use at the HBGS, which is scheduled to retire by December 31, 2020. This would eliminate the use of ocean water at the power plant site and eliminate the potential impacts to marine life through impingement and entrainment in an OTC system. In addition, the proposed HBEP would result in a substantial reduction in fresh water usage, using 20% of the fresh water used by the existing HBGS.

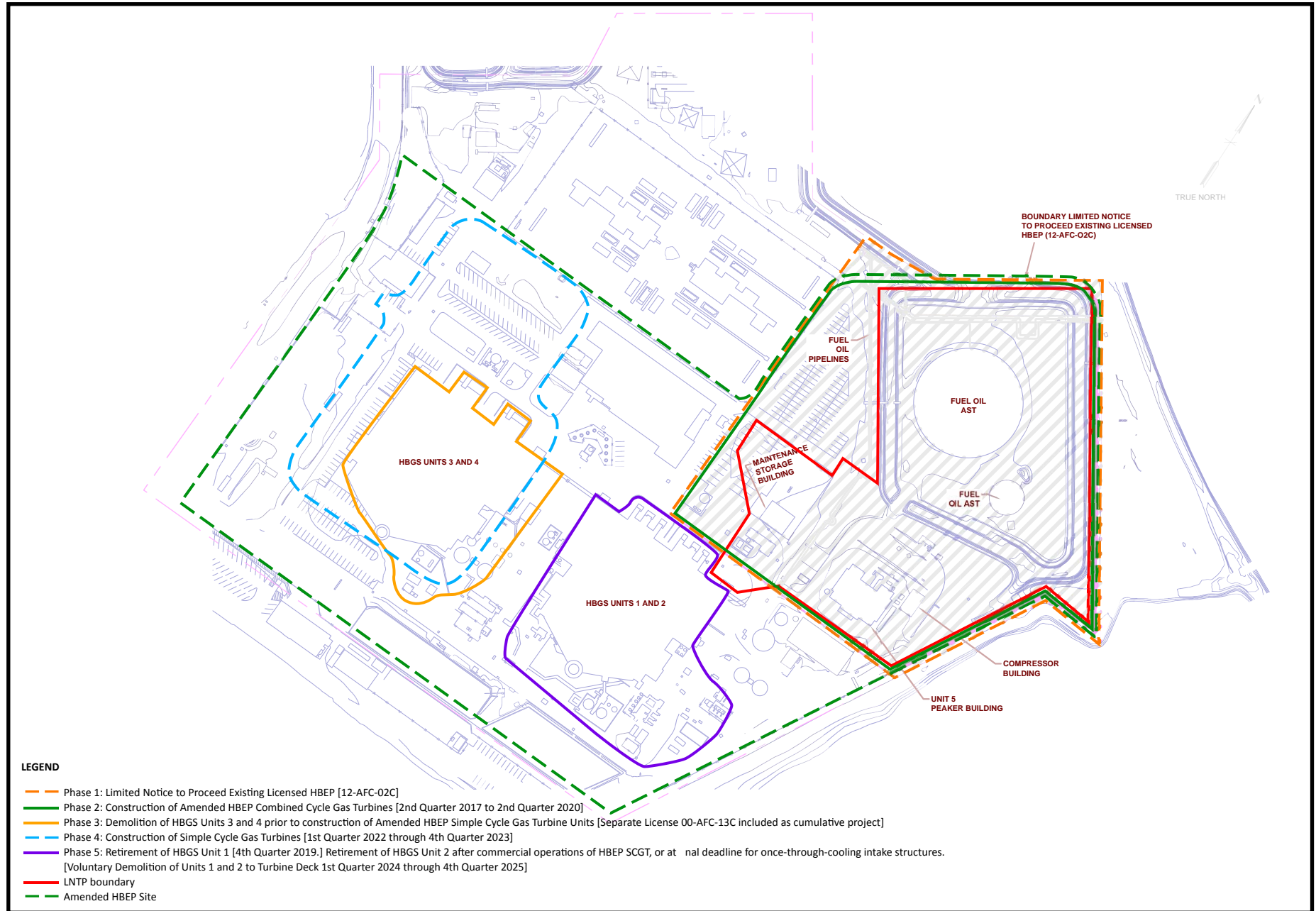
The HBEP would be located entirely within the footprint of the existing HBGS site, resulting in avoiding the need to construct new linear facilities, including gas and water supply lines, discharge lines, and transmission interconnections. Siting the HBEP on the HBGS site is consistent with existing zoning regulations, would result in reducing potential offsite environmental impacts, the cost of construction, and ensure no new site in the city of Huntington Beach is converted to industrial use to generate power.

The design of the proposed HBEP proposes a smaller footprint and lower profile than the existing HBGS, which would be an improvement to the aesthetic quality of the project. Removal of an assemblage of structures, tanks, and cooling tower, to replace them with project elements that are shorter and set back further to the north of the PCH, would reduce some of the existing visual impacts of the facility. HBEP would utilize an existing power generation site with a General Plan Land Use designation of Public and a zoning designation of Public-Semipublic, consistent with zoning, and electrical, water, wastewater, and natural gas infrastructure in place. Retiring the OTC system would minimize potential offsite environmental impacts, and the project would eliminate the need for a new site to be converted to Public-Semipublic use. In addition, the HBEP would replace an older, dirtier and less efficient power generation plant with a cleaner, more efficient power generation plant.

PROJECT DESCRIPTION - FIGURE 1

Executive Summary - Phases of Amended Huntington Beach Energy Project

PROJECT DESCRIPTION



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

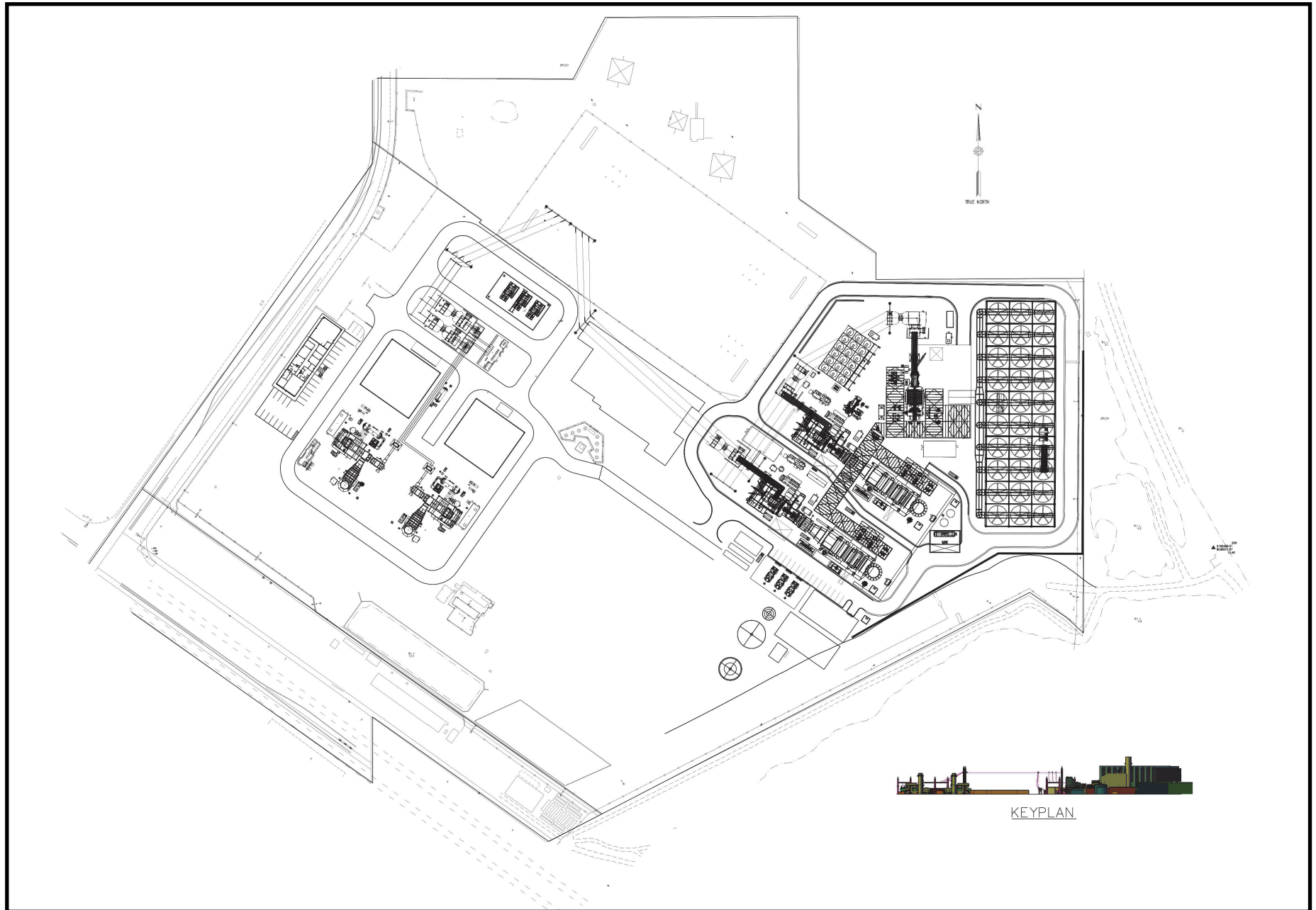
SOURCE: CH2MHill

PROJECT DESCRIPTION - FIGURE 2

Amended Huntington Beach Energy Project - Construction / Laydown Parking Areas



PROJECT DESCRIPTION - FIGURE 3
Huntington Beach Energy Project - General Arrangement/Site Plan



PROJECT DESCRIPTION

Environmental Assessment

BIOLOGICAL RESOURCES

Testimony of Tim Singer and Heather Blair

SUMMARY OF CONCLUSIONS

The proposed modifications in the Petition to Amend (PTA) for the Huntington Beach Energy Project (HBEP) would not result in new significant impacts on biological resources, substantial increases in the severity of previously identified significant impacts, or necessitate any material changes to the biological resource conditions of certification identified in the California Energy Commission Final Decision (Decision) for the approved HBEP (CEC 2014bb) to mitigate impacts or maintain compliance with applicable laws, ordinances, regulations, and standards (LORS) related to biological resources. Therefore, in accordance with California Environmental Quality Act (CEQA) Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for biological resources.

Consistent with the Decision for the approved HBEP, with implementation of the previously approved conditions of certification (with minor, immaterial changes presented herein), the amended HBEP would not result in significant direct, indirect, or cumulative impacts to biological resources and would conform to all applicable LORS related to biological resources.

INTRODUCTION

This section provides the Energy Commission staff's analysis of potential impacts to biological resources from proposed changes to the approved HBEP. It updates any pertinent setting information and focuses on the potential for new impacts or increases in the severity of previously identified impacts. The PTA proposes the following activities which have the potential to impact biological resources and were not analyzed in the original HBEP licensing proceeding or Decision (CEC 2014bb):

- Inclusion of an additional 22 acres at the Plains All-American Tank Farm site for construction laydown and parking;
- Alteration of the intersection at Banning Avenue and Magnolia Street to provide access to the Plains site;
- Changes to the generator that would affect stack height and nitrogen deposition; and
- Modifications to the types and location of equipment within the fenced Huntington Beach Generating Station (HBGS) site that would affect construction noise levels.

SUMMARY OF THE COMMISSION DECISION

In its Decision, the Energy Commission considered the potential for the HBEP to impact state and federally-listed species, species of special concern, and other resources of critical biological interest, such as wetlands and unique habitats. The Decision addressed the potential for project-related noise and lighting to affect special-status bird species in the adjacent Magnolia Marsh, the potential for birds to collide with project structures, and the potential for the project's nitrogen emissions to impact sensitive species and their habitats. The Decision concluded that, with implementation of Conditions of Certification **BIO-1** through **BIO-8**, the HBEP will not result in significant direct, indirect, or cumulative impacts to biological resources and will conform to all applicable LORS related to biological resources (CEC 2014bb).

LAWS, ORDINANCES, REGULATIONS AND STANDARDS COMPLIANCE

There have not been any changes to applicable LORS since the approval of the original HBEP in November 2014. Additionally, the proposed amendment would not trigger the consideration of any new LORS that were not applicable to the approved HBEP. The amended HBEP would remain in compliance with applicable LORS related to biological resources.

ENVIRONMENTAL IMPACT ANALYSIS

Minor updates to the affected environment as described for the approved HBEP are presented below to reflect recent changes to the nomenclature and status of some special-status species, as well as the use of the adjacent Plains All American Tank Farm for construction worker parking and construction laydown.

Staff determined there are no new or increased significant impacts to biological resources. However, proposed changes to the HBEP would result in minor changes to some construction and operation impacts, as identified below. None of these changes would merit revisions to the conditions of certification or any additional mitigation.

SPECIAL-STATUS SPECIES

Special-status Plants

Four special-status plant species were identified in an updated search of the California Natural Diversity Database (CNDDB) within a 10-mile radius of the amended HBEP that were not considered in the original HBEP proceeding. These species are: Brand's star phacelia (*Phacelia stellaris*; California Rare Plant Rank [CRPR] 1B.1), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*; CRPR 1B.2), Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3), and San Diego button-celery (*Eryngium aristulatum* var. *parishii*; federally endangered, state endangered, CRPR 1B.1). Due to a lack of suitable habitat, none of these species are expected to occur within the amended project area. Thus, no impacts would occur.

Light-footed Ridgway's (Clapper) Rail

The federally and state-endangered light-footed clapper rail (*Rallus longirostris levipes*), as it was referred to in the original HBEP proceeding, was one of the special-status species considered by staff in its original analysis. It has been reclassified taxonomically and renamed by the American Ornithologist Union and ascribed to the Ridgway's rail, *Rallus obsoletus* (Chesser et al. 2014). The common name for the southern California subspecies soon should be legally adopted by the wildlife agencies in recognition of this nomenclatural change. The light-footed clapper rail will then be called the light-footed Ridgway's rail (*R. obsoletus levipes*) (Zemba et al. 2015).

Based on the 2015 report on the status and distribution of light-footed Ridgway's rail in the Huntington Beach Wetlands Complex (Zemba et al. 2015), a pair was observed in the Brookhurst Marsh in 2012 through 2015. According to Dr. Gordon Smith of the Huntington Beach Wetlands Conservancy (Pers. Comm., Smith 2016), an individual light-footed Ridgway's rail was observed by California Department of Fish and Wildlife staff in Magnolia Marsh in 2015. This species has not been documented breeding in Magnolia Marsh, consistent with the information presented in the Decision for the approved HBEP, although habitat conditions for light-footed Ridgway's rail in the marsh continue to improve. Condition of Certification **BIO-8** continues to apply, which requires an assessment of habitat and potentially focused surveys for light-footed Ridgway's rail in advance of construction. With implementation of this condition of certification, impacts to light-footed Ridgway's rail remain less than significant, as stated in the Decision for the approved HBEP.

Plains All American Tank Farm

The amended HBEP would use an additional 22 acres at the former Plains All American Tank Farm for construction worker parking and construction laydown. This site, which consists mostly of pavement, gravel, and disturbed soil, currently includes three empty petroleum storage tanks, along with containment berms and associated infrastructure. The applicant would lease the site from Plains All American, the site owner. Plains All American has a Coastal Development Permit that pertains to the demolition and removal of the three storage tanks and ancillary pipes, as well as grading associated with demolition activities.

The amended HBEP would improve access to the proposed construction laydown and parking area at the Plains All American Tank Farm. This improved access would require the removal of several trees west of the intersection of Magnolia Street and Banning Avenue. Construction activities at the Plains site could result in injury or disturbance to nesting birds as well as indirect impacts to the adjacent Magnolia Marsh from construction dust and storm water runoff, as described in the Decision for the approved HBEP. Potential impacts to nesting birds would be avoided and minimized through implementation of Condition of Certification **BIO-8**, which requires a survey for nesting birds in advance of construction and establishment of no-disturbance buffers around active nests. Dust and stormwater runoff would be addressed by Conditions of Certification **SOIL&WATER-1**, **AQ-SC3**, and **AQ-SC-4**. With implementation of these conditions of certification, impacts to biological resources from proposed use of the Plains All American Tank Farm would be less than significant.

CONSTRUCTION NOISE

The amended HBEP proposes modifications to the types and location of equipment within the existing HBGS site that would affect construction noise levels. Anticipated construction noise levels at locations with noise-sensitive biological resources is presented in **Biological Resources Table 1**¹. Noise levels in Magnolia Marsh adjacent to the HBEP (M6) during pile driving would increase from mid-60² dBA as estimated for the licensed HBEP to upper-60/lower-70³ dBA for the amended HBEP. Construction noise levels at all other locations with noise-sensitive biological resources would remain the same as estimated for the licensed HBEP. This small increase in noise levels would result in a negligible increase in the severity of impacts to birds at Magnolia Marsh, which are described in the Decision for the approved HBEP. Implementation of Condition of Certification **BIO-8**, which requires monitoring active nests and implementing adaptive measures (e.g., increasing buffer size, halting disruptive construction activities, placing sound dampening structures at loud equipment) if birds are being disturbed by construction noise, would ensure impacts remain less than significant, as stated in the Decision for the approved HBEP.

Biological Resources Table 1
Summary of Noise Levels at Locations with Noise-sensitive Biological Resources

Location	Ambient Noise Level (average Leq)	Approximate distance from Power Block 1 (feet)	Construction Noise Level
Wetland pier within Magnolia Marsh (M5)	62 ¹	900 ⁷	Average: 63-64 dBA (Leq) ⁴ , Lmax is unknown Pile driving: 57-58 dBA (Leq), 59-60-dBA (Lmax) ⁵
In Magnolia Marsh adjacent to HBEP (M6)	54 ¹	300	Average: 71-72 dBA (Leq) ⁴ , Lmax is unknown Pile driving: 67-68 dBA (Leq), 70-71-dBA (Lmax) ⁵
Southeastern corner of Magnolia Marsh	45 ²	1200	Average: 58-59 dBA (Leq) ⁶ , Lmax is unknown Pile driving: 57-58 dBA (Leq), 58-59 dBA (Lmax) ⁵
Wildlife Care Center	72 ³	300 (from Power Block 2)	Average: 71-72 dBA (Leq) ⁴ , Lmax is unknown Pile driving: 65-66 dBA (Leq), 67-68 dBA (Lmax) ⁵

¹ Biological Resources Table 1 presents an update of Biological Resources Table 3 from the FSA of the original HBEP proceeding (CEC 2014d).

² Noise staff has defined this range, which was given in the Decision, to encompass 64-68 dBA.

³ Noise staff has defined these ranges, which were given in the Decision, to encompass 67-71 dBA.

Location	Ambient Noise Level (average Leq)	Approximate distance from Power Block 1 (feet)	Construction Noise Level
Newland Marsh	unknown	1355	Average: 57-58 dBA (Leq) ⁶ , Lmax is unknown Pile driving: 56-58 dBA (Leq and Lmax) ⁵
Brookhurst Marsh	unknown	1355	Average: 57-58 dBA ⁶ , Lmax is unknown Pile driving: 56-58 dBA (Leq and Lmax) ⁵

Leq is the noise level averaged over the daytime period. Lmax is the maximum anticipated noise level.

¹Calculated by noise staff using HBEP 2012d & HBEP 2015a

²Extrapolated by staff from HHM 09 in HBEP 2012d & HBEP 2015a

³Calculated by noise staff using HHM 10 and HHM2 in HBEP 2012d & HBEP 2015a

⁴70 dBA (Leq) at 375 feet from noise source

⁵Assumes use of vibratory pile driving; 68 dBA (Leq) and 71 (Lmax) at 262 feet (80 meters) from noise source (HBEP 2013m Table 1 & HBEP 2015a); noise staff extrapolated noise levels to approximate location

⁶57 dBA (Leq) at 1500 feet from noise source; noise staff extrapolated estimated noise levels to approximate location.

⁷Corrected from 300' as stated in CEC 2014d

AVIAN COLLISION

The height of the approved HBEP's exhaust stacks was 120 feet. The amended HBEP includes 150-foot-tall exhaust stacks. Typically, structures shorter than 350 feet are not considered a substantial collision threat to migrating birds. The proposed 30-foot increase in stack height would not increase the risk of avian collisions; impacts would remain less than significant as stated in the Decision for the approved HBEP.

AIR EMISSIONS – NITROGEN DEPOSITION

Staff determined that nitrogen emissions from the amended HBEP would be approximately 42 percent less than those of the approved HBEP. Although the exhaust stack dimensions of the amended HBEP would be different than those approved, the formation of depositional nitrogen from gaseous nitrogen compounds requires time and sunlight, which are independent of exhaust stack parameters. The reduction in nitrogen emissions would lead to a reduction of nitrogen deposition. In addition, the amended HBEP would be required to purchase RECLAIM Trading Credits to offset the annual nitrogen emissions on a 1:1 offset ratio (see the **Air Quality** section of this document). The amended HBEP would not result in a net increase in nitrogen emissions in the South Coast Air Basin coastal zone. Nitrogen deposition impacts on sensitive species and habitats would remain less than significant as identified in the Decision for the approved HBEP.

CUMULATIVE IMPACTS

Several new projects have been proposed or started construction since publication of the Decision for the approved HBEP in November, 2014. Staff has used the same geographic scope as described in the FSA for the original proceeding when conducting its cumulative impact assessment for the amended project. It should be noted that these projects are in addition to those considered in the original FSA, and staff's analysis of the potential cumulative impacts of the amended HBEP builds upon the cumulative analysis that was conducted for the original proceeding. For a list of the new projects that staff evaluated in its updated cumulative impact analysis, refer to **Biological Resources Appendix-1**.

The amended HBEP would not result in new or substantially increased impacts to biological resources. Noise attenuation and visual impact minimization are incorporated in the proposed project design, and implementation of Conditions of Certification **BIO-1** through **BIO-7** would avoid, minimize, or mitigate construction-related impacts from lighting, spread of invasive weeds, and stormwater runoff from the HBEP. Consideration of additional projects in the cumulative scenario does not substantially change cumulative impacts to the biological resources affected by the proposed modifications to the HBEP. Therefore, the finding in the Decision that the HBEP's contribution to biological resource impacts is not cumulatively considerable would remain valid for the amended HBEP.

RESPONSE TO COMMENTS ON THE PSA

Staff received comments on the Biological Resources section of the Preliminary Staff Assessment (PSA) from the applicant (HBEP 2016cc), city of Huntington Beach (CHB 2016b), and the California Coastal Commission (CCC 2016f). The following provides a summary of comments and staff's response to each.

APPLICANT COMMENT LETTER JULY 21, 2016

Comment: *The commenter stated that Conditions of Certification BIO-1 through BIO-8 do not apply to demolition activities at the Plains All American site because demolition and associated grading of the site was approved under a separate Coastal Development Permit previously issued to Plains All American by the city of Huntington Beach.*

Response: Staff revised the impact analysis (see Plains All American Tank Farm section, above) to clarify that the conditions of certification in this FSA are for activities (intersection improvements, laydown, parking) associated only with the amended HBEP.

Comment: *The commenter requested that staff revise BIO-1 to expedite approval of the Designated Biologist.*

Response: The Designated Biologist performs an important function with regard to implementing project-specific mitigation for biological resources. Therefore, it is imperative that Designated Biologist's qualifications are reviewed on a project-specific basis, dependent on the specific biological resources and conditions of certification for each project. Additionally, the necessary qualifications of a Designated Biologist may change over time, even for similar projects, so that a Designated Biologist approved previously may not meet current qualification requirements. Lastly, as with any profession, there is the possibility that a Designated Biologist who was qualified for an earlier project has subsequently engaged in compromising job-related conduct outside the narrow circumstances proposed by the Applicant. For example, the proposed Designated Biologist may have engaged in such conduct on a project not under Energy Commission oversight that disqualifies him or her from the current project. In this context such conduct could include failure to report required data to resource agencies, falsifying data records, gross negligence, or dereliction of duty. While staff would hope that such instances would be rare, nevertheless, their occurrence remains a possibility. Staff concludes that the applicant's proposed approval window is insufficient for CPM review, even for a candidate who has served as Designated Biologist on a prior project. While staff understands the project owner's stated concern regarding their preferred schedule, there is nothing to suggest that the CPM or staff could not - or would not - provide timely review of the Designated Biologist's qualifications in the regular course of business. Staff is always keenly aware of scheduling issues, and routinely works with project owners to ensure that all of the technical areas of each facility are reviewed in a timely manner. Therefore, a blanket approval process, based solely on prior acceptance within the last 5 years and a ten-day review period, is not appropriate for the amended HBEP.

Comment: *The commenter identified several inconsistencies between the conditions of certification in the original Decision and those in the PSA for the amended HBEP.*

Response: Staff made minor revisions to the conditions of certification in the FSA to match those in the original Decision, except for where noted by underlined bold and/or strikethrough text.

CITY OF HUNTINGTON BEACH COMMENT LETTER JULY 22, 2016

Comment: *The commenter requested that staff use a consistent format to identify the proposed changes to the approved HBEP. The commenter stated that the proposed 50-foot-tall sound wall should be listed in these project changes.*

Response: Staff revised the Introduction of the Biological Resources section of the FSA to list those activities proposed for the amended HBEP that were not included in the original proceeding and have the potential to impact biological resources. The proposed 50-foot-tall sound wall is not listed because this proposed change to the licensed HBEP would not affect biological resources. As discussed in the Noise section of this FSA, there would be no increase in operational noise for the amended HBEP when compared to the licensed HBEP.

Comment: *The commenter stated that it was unclear whether the Biological Resources section of the PSA analyzed the proposed intersection improvements and removal of vegetation at the Plains All American Tank Farm. The comment recommended that impacts to vegetation in the Coastal Zone be analyzed.*

Response: An analysis of proposed intersection improvements and removal of vegetation at the Plains All American Tank Farm was included in the Biological Resources section of the PSA under the “Nesting Birds” section. In the Biological Resources section of the FSA, this section was expanded and renamed to “Plains All American Tank Farm”. A broader analysis of impacts to vegetation was included in the Decision for the originally licensed HBEP.

CALIFORNIA COASTAL COMMISSION COMMENT LETTER AUGUST 15, 2016

Comment: *The commenter stated that there are two areas of Coastal Commission-jurisdictional wetlands within the project area that would be directly impacted by the amended HBEP: the proposed parking area across Newland Street from the project site, and areas of the on-site fuel tank containment basins. The Coastal Commission requested that the applicant conduct wetland determinations and delineations of these two areas using Coastal Commission protocol, and that the Energy Commission revise its conditions of certification to require the applicant to provide compensatory mitigation for any direct impacts. The Coastal Commission’s stated preference is to remove the Newland Street site from the project to avoid potential impacts to wetlands.*

Response: The Energy Commission Decision found that “[t]here are no creeks, drainages, wetlands, or other aquatic resources on the project site, offsite laydown area, or offsite parking areas” (CEC 2014bb, p. 5.1-24). However, to avoid impacts to such resources adjacent to the project, the Energy Commission imposed Condition of Certification **BIO-7**, which requires standard best management practices (BMPs) to be implemented during all phases of the 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.

The scope of the analysis conducted by staff in an amendment proceeding under Title 20, Section 1769 is limited to an evaluation of the incremental impacts, if any, of the proposed modifications to the project on the environment, as well as a determination of the consistency of the proposed modifications with the applicable LORS. Staff’s review of the Petition to Amend is also limited by CEQA Guidelines section 15162, which only allows new environmental analysis after a decision is made under three scenarios. New environmental analysis is allowed when: 1) substantial changes in the project, 2) or to the circumstances under which the project would be undertaken, would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects, 3) or when new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the original environmental analysis

was completed, shows that the project would have one or more significant effects not previously discussed. The petition does not propose any changes to the approved use of the 3-acre Newland Street parking area, or to the approved ground disturbance within the fuel tank containment basins. As a result, there would be no substantial change to the project or to the circumstances under which it would be undertaken that would result in new significant impacts or impacts of greater severity to wetlands. The Coastal Commission's August 9, 2016 comments cite a 2007 Mitigated Negative Declaration (MND) prepared by the city of Huntington Beach (*Negative Declaration No. 05-05 and Coastal Development Permit No. 05-07 (Newland Street Improvements Between Pacific Coast Highway and Hamilton Avenue)*, April 2007) which included a biological study that identified areas fronting the Newland Street parking area as having wetland characteristics. This is therefore not new information which was not known or could not have been known at the time of the original proceeding. Nevertheless, Condition of Certification **BIO-7** specifies that parking areas shall be located in areas without native vegetation; so implementation of **BIO-7** would ensure no significant impacts occur to any wetland vegetation on the Newland Street parking area. Staff declines to adopt the measures suggested by the Coastal Commission and believes changes to the conditions of certification are not supported by the evidence.

Comment: *The commenter states that the amended HBEP would result in “significantly increased adverse effects” to the wetlands that are adjacent to the project site (i.e., Upper Magnolia Marsh and Magnolia Marsh). Specifically, the commenter is concerned about impacts to special-status birds (Belding’s savannah sparrow and light-footed Ridgway’s rail) from construction and operational noise and vibration and the potential for the functions and values expected from these habitats (some of which were established as compensatory mitigation areas) to be diminished. The Coastal Commission recommends the Energy Commission require any of three types of mitigation measures – implementation of adequate buffers, limits on allowable noise levels, and timing restrictions on project-related activities – to avoid or reduce adverse effects to these special-status species and their habitats in the adjacent marshes.*

Response: An analysis of construction noise impacts to noise-sensitive biological resources has been added to the FSA (see “Construction Noise,” above). With the exception of one location (M6), anticipated construction noise levels at all other locations with noise-sensitive biological resources would remain the same as estimated for the licensed HBEP. The small increase in noise levels at M6 would result in a negligible increase in the severity of impacts to special-status birds at Magnolia Marsh. The adaptive measures described in Condition of Certification **BIO-8** are consistent with the types of mitigation recommended by the commenter. Disruption to nesting birds resulting from vibration during construction activities would also be monitored and if occurring, would require implementation of adaptive measures.

As discussed in the Noise section of this FSA, there would be no increase in operational noise when compared to the licensed HBEP.

CONCLUSIONS AND RECOMMENDATIONS

Since approval of the original HBEP, minor updates to the affected environment are warranted to reflect the name change of the light-footed clapper rail to the light-footed Ridgway's rail, the status change of some special-status species, and the consideration of four special-status plant species that were newly identified in an updated CNDDDB search (none of which have suitable habitat in the amended project area). Additionally, the status and distribution of the light-footed Ridgway's rail in the Huntington Beach Wetlands Complex was updated with 2015 census data; restoration efforts continue in the Magnolia Marsh and documented species occurrences have increased throughout the Huntington Beach Wetlands Complex, but breeding light-footed Ridgway's rail have not been documented in Magnolia Marsh. None of these updates to the affected environment would merit substantive revisions to the conditions of certification or any additional mitigation.

The amended HBEP includes several proposed modifications pertinent to the assessment of impacts on biological resources: taller exhaust stacks, reduced nitrogen emissions, removal of additional trees, and the use of the Plains All American Tank Farm. None of the proposed modifications would result in new significant impacts, substantially increase the severity of previously identified significant impacts, or necessitate any material changes to the biological resource conditions of certification identified in the Decision for the approved HBEP to mitigate impacts or maintain compliance with LORS. Consistent with the Decision for the approved HBEP, with implementation of the previously approved conditions of certification (with minor, immaterial changes), the amended HBEP would not result in significant direct, indirect, or cumulative impacts to biological resources and would conform to all applicable LORS related to biological resources.

CONDITIONS OF CERTIFICATION

The following conditions of certification are excerpted from the November 2011 Decision for the approved HBEP (CEC 2014bb). As discussed in the "Conclusions and Recommendations" subsection above, staff is not proposing any material changes to these conditions. Staff has proposed minor edits to reflect recent changes to the nomenclature of the light-footed clapper rail, to ensure clarity, and to correct typographical errors. Deleted text is in ~~striketrough~~ and new text is **bold and underlined**.

APPOINTMENT AND QUALIFICATIONS OF DESIGNATED BIOLOGIST

- BIO-1** 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 review and approval and to CDFW and USFWS for review and comment.

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.

DUTIES OF DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR(S)

BIO-2 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 **Worker Environmental Awareness Program (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 noncompliance or special-status species injury or mortality within one (1) working day of the incident. The Designated Biologist shall submit in the **monthly compliance report (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 record summaries in the annual compliance report unless their duties cease, as approved by the CPM.

APPOINTMENT AND QUALIFICATIONS OF BIOLOGICAL MONITOR

BIO-3 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 review and approval and to CDFW and USFWS for review and comment, 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.

POWERS OF DESIGNATED BIOLOGIST/BIOLOGICAL MONITOR(S)

BIO-4 The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification.

If required by the Designated Biologist and Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the construction/operation manager when to resume activities;
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
4. 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.

BIOLOGICAL RESOURCES WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

BIO-5 The project owner shall develop and implement 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 ~~clapper~~ **Ridgway's** 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 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.

Throughout the life of the project, WEAP **training** 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.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN (BRMIMP)

BIO-6 The project owner shall develop a BRMIMP and submit two copies of the proposed BRMIMP to the CPM for review and approval and to 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
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 (CNDDB) 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).

GENERAL IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-7 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 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, Biological Monitor, and/or site personnel, 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 individual 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 in an effort 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 on-site 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 special-status species to CDFW and/or USFWS and the CPM, and the project owner shall follow instructions that are provided by CDFW or USFWS. The Designated Biologist shall maintain a record of all dead or injured special-status species, including species name, physical characteristics of the animal (sex, age class, length, and 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 Environmental Compliance Monitor shall immediately report any dead or injured special-status species 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 special-status species, including species name, physical characteristics of the animal (sex, age class, length, and 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:
 - a. 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;
 - b. 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 rapidly implement control measures to ensure early detection and eradication of weed invasions.
13. 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.

PRE-CONSTRUCTION NEST SURVEYS AND IMPACT MINIMIZATION MEASURES FOR BREEDING BIRDS

BIO-8 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 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.

**Biological Resources Table 1:
HBEP Construction and Demolition Buffers for Active Nests**

Avian Group	Species Potentially Nesting in the Project Vicinity	Buffer for Construction and Demolition Activities (feet)
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
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
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

Avian Group	Species Potentially Nesting in the Project Vicinity	Buffer for Construction and Demolition Activities (feet)
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 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 could 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 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. A qualified biologist shall conduct a habitat assessment for light-footed clapper ~~Ridgway's~~ 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 ~~Ridgway's~~ 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 ~~Ridgway's~~ 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~~ **Ridgway's** 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~~ **Ridgway's** 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 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~~ **Ridgway's** 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.

REFERENCES

- CCC 2016f** – California Coastal Commission/Tom Luster (TN 212797). California Coastal Commission's Report for Petition to Amend Application for Certification - Section 30413(d), dated August 15, 2016. Submitted to CEC/Docket Unit on August 15, 2016.
- CEC 2014d** – Final Staff Assessment (TN 202405). Submitted to CEC/ Docket Unit June 2, 2014.
- CEC 2014bb** – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.
- CHB 2016b** – Huntington Beach Department of Planning and Building/Jane James (TN 212437).City of Huntington Beach Comments Regarding Preliminary Staff Assessment for the Huntington Beach Energy Project Petition to Amend Docket No.12-AFC-02C, dated July 22, 2016. Submitted to John Heiser/CEC/Docket Unit on July 25, 2016
- HBEP 2016cc** – Stoel Rives LLP/Kristen T. Castanos (TN 212379).Petition to Amend - Project Owner's Comments on the Preliminary Staff Assessment, dated July 21, 2016. Submitted to John Heiser/CEC/Docket Unit on July 21, 2016.
- HBEP 2015a –hj** Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.
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BIOLOGICAL RESOURCES APPENDIX-1: ADDITIONAL CUMULATIVE PROJECTS LIST

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
1	Huntington Beach Generating Station Demolition (Demolition of Units 3 & 4)	Demo/removal of Units 3 & 4 from the existing Huntington Beach Generating Station.	Huntington Beach Generating Station, Huntington Beach	0.05	Demo estimated Q2 2020 to Q2 2022 (24 mo.)
2	Poseidon Desalination Plant	A 50 million gallon per day, seawater desalination facility located on 11-acre portion of the existing Huntington Beach Generating Station (HBGS) facility. Project would use existing HBGS seawater intake and outfall pipelines for operations.	21730 Newland St, Huntington Beach	0.22	Planning and in review with the California Coastal Commission
3	Magnolia Oil Storage Tank and Transfer Facility Demolition and Removal	Demolition and removal of three empty above-ground crude oil storage tanks and ancillary site improvements.	21845 Magnolia St, Huntington Beach	0.35	In Progress
4	Newland St Residential (Pacific Shores)	Develop and subdivide former industrial site to residential with 204 multi-family residential units and two-acre public park.	21471 Newland St, Huntington Beach	0.40	Completed
5	Remedial Action Plan for Ascon Landfill Site	Remedial Action Plan (RAP) includes partial removal of waste materials and construction of protective cap over remaining waste materials.	Magnolia St and Hamilton Ave, Huntington Beach	0.43	Plan Check
7	Brookhurst Street Bridge Preventative Maintenance Project	Repair and rehabilitate the Brookhurst Street Bridge in the city of Huntington Beach.	Brookhurst St Bridge, Huntington Beach	1.11	Plan Check

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
9	Pacific City	516 condominiums; 8 story, 250-room hotel, spa and health club; and 191,100 sq. ft. visitor-serving commercial with retail, office, restaurant, cultural, and entertainment	21002 Pacific Coast Hwy, Huntington Beach	1.26	Under Construction
15	Brookhurst Street and Adams Avenue IIP	Widening of the Brookhurst St/Adams Ave intersection in all directions.	Brookhurst St and Adams Ave, Huntington Beach	2.38	Draft Environmental Impact Report (DEIR)
16	Lighthouse Project	89-unit (49 residential units, 40 live/work units), three-story mixed-use development. 332 parking garage, 2 acres of common open space.	1620-1644 Whittier Ave, Costa Mesa	2.42	Initial Study (IS)/Mitigated Negative Declaration (MND)
22	2277 Harbor Boulevard Project	Proposal involves demolishing existing 236-room motel and the construction of a four-story, 224-unit luxury apartment project.	2277 Harbor Boulevard, Costa Mesa	3.50	IS/MND
25	Bolsa Chica Roadway Embankment Reconstruction Project	Install pedestrian safety cable rails and metal beam guardrails along State Route 1 in Huntington Beach.	SR 1 (Pacific Coast Hwy) from Warner Ave to Seapoint Ave, Huntington Beach	3.95	IS/ND
26	Huntington Beach Senior Center	One-story senior center on an undeveloped portion of Central Park. Approximately 227 parking spaces will be provided for visitors and city vehicles.	Central Park (5-acre area; SW of the intersection of Goldenwest St and Talbert Ave)	4.14	Under Construction
28	Vision 2020 Facilities Master Plan	1,238,542 sq. ft. of academic, administrative, residential, and parking facilities on Orange Coast College campus.	2701 Fairview Rd, Costa Mesa	4.41	Unknown

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
31	Costa Mesa High School Sports Complex	Construct sports complex with 997-seat bleachers, replacing existing track and field with synthetic field and rubber track, and provide various associated facilities.	2650 Fairview Rd, Costa Mesa	4.68	Unknown
37	Upper Newport Bay-East Bluff Drainage Repair Project	Drainage improvements and erosion repair within bluff on E side of Upper Newport Bay.	E of Back Bay Dr and W of Vista Del Oro, Newport Beach	5.37	Proposed
39	Parkside Estates	111 single-family residences; 23-acre preserved, restored and enhanced open space; 1.6-acre neighborhood park; public trails; and water quality treatment system.	W side Graham St, S of Warner Ave, along E Garden Grove Wintersburg Flood Channel 17221 (S of Greenleaf Ln), Huntington Beach	5.67	Planning
40	Ganahl Hardware Store and Lumber Yard	65,263 sq. ft. building materials store with administrative offices and 286 parking spaces.	Bristol St and Northbound Newport Blvd, Huntington Beach	5.74	Completed
41	Brightwater	347 single-family units and over 37-acres habitat restoration and trails.	Warner Ave and Los Patos Ave, Huntington Beach	5.77	Under Construction
42	Newport Executive Court Project	Project includes construction of two, 2-story medical office buildings and a 324-space surface parking lot on 4-acres.	Cross Streets: Birch St and Mesa Dr, Newport Beach	5.88	Plan Check
49	San Diego Freeway I-405 Improvement Project	One general-purpose lane in each direction on I-405 from Euclid St to the I-605 interchange, add tolled express lane in each direction of I-405 from SR-73 to SR-22 East.	I-405 between SR-73 & I-605, Costa Mesa, Seal Beach	6.06	Unknown

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
54	OC-44 Pipeline Rehabilitation Project	Sip-line existing 42-inch pipeline with new 30-inch Ductile Iron Pipe (DIP). To accommodate these improvements, a pipe jacking operation would be conducted, requiring three access pits.	University Dr and La Vida, Newport Beach	6.61	Approved-Construction 2018-2020

CULTURAL RESOURCES

Testimony of Melissa Mourkas and Gabriel Roark

SUMMARY OF CONCLUSIONS

Staff concludes that the proposed amendment would not result in new significant environmental effects, nor increase the severity of previously identified significant effects. No known, significant cultural resources (that is, historical resources, unique archaeological resources, or tribal cultural resources) have been identified in the Huntington Beach Energy Project – Petition to Amend (HBEP–PTA) project area of analysis (PAA). Similar to the Licensed HBEP, construction of the project as amended could result in impacts on buried, as-yet-unidentified cultural resources. However, the amended project components appear consistent with the scale of excavation described for the licensed project. Staff therefore concludes that existing Conditions of Certification (Conditions) **CUL-1–8** for the HBEP are sufficient to reduce the severity of any inadvertent impacts on buried cultural resources to less than significant. Thus, in accordance with California Environmental Quality Act (CEQA) Guidelines, Title 14 of the California Code of Regulations, section 15162, staff concludes that no supplementation of the California Energy Commission Final Decision (Decision) for the HBEP amendment is necessary for Cultural Resources. Staff also finds that the amended project would conform to applicable laws, ordinances, regulations, and standards (LORS) relevant to cultural resources.

INTRODUCTION

The Petition to Amend (PTA) proposes the following activities which have the potential to impact cultural resources and were not analyzed in the HBEP licensing proceeding or the Decision (CEC 2014a).

- Inclusion of the nearly 30-acre Plains All American Tank Farm (tank farm) for construction laydown and parking;
- Creation of a new entrance to the tank farm site with an approximately 35–40-foot-by-150-foot entrance road;
- Removal of vegetation and portions of the earthen berm that surrounds the tank farm to accommodate the new entrance road;
- Rearrangement of the proposed project elements within the project site that may affect depth of excavation and site grading.

Staff has reviewed the PTA for potential environmental effects and consistency with applicable LORS. In completing this analysis, cultural resources staff analyzed the following:

1. The extent of proposed modifications;
2. The proposed modifications' potential to significantly affect the environment;
3. The project's compliance with all applicable LORS, should the Energy Commission approve the proposed modifications; and,

4. The need to change or delete an existing license condition in light of the proposed modifications. (Cal. Code Regs., tit. 20, §1769[a][2].)

SUMMARY OF THE DECISION

Concerning cultural resources, the Decision concluded that the project owner will implement a cultural resources monitoring and mitigation program for response to inadvertent discoveries of cultural resources; there is no evidence that the amended HBEP would have a cumulatively considerable incremental effect on cultural resources in conjunction with other projects in the area; the Huntington Beach Generating Station (HBGS) is not an historical resource for the purposes of CEQA; the Decision's Conditions (**CUL-1–8**) would ensure compliance with applicable LORS; and the mitigation measures contained in the conditions will ensure that any project impacts on cultural resources would be reduced to a less-than-significant level (CEC 2014a:5.3-10–5.3-11, Appendix A).

LAWS, ORDINANCES, REGULATIONS AND STANDARDS COMPLIANCE

The LORS applicable to cultural resources in the project vicinity have not changed since adoption of the Decision (CEC 2014a:Cultural Resources Table 1). A draft *Historic and Cultural Resources Element* (HCRE) (Galvin 2014a) for the Huntington Beach General Plan has been written and circulated for public comment. An updated landmarks list has been prepared as part of the new *Historic Context and Survey Report* (Galvin 2014b)¹. This draft HCRE removes the HBGS from the landmarks list and is in conformance with the Decision's findings that the HBGS is not an historical resource for the purpose of CEQA nor does its demolition create a conflict with local LORS.

ENVIRONMENTAL IMPACT ANALYSIS

This section of the cultural resources analysis addresses the proposed modifications' potential to affect the cultural resources environment. It begins with a discussion of the regulatory context for evaluating impacts and follows with a description of staff's cultural resources inventory and analysis of the PTA.

¹ The Historic and Cultural Resources Element and Historic Context and Survey Report were approved by the City Council on October 19, 2015.

REGULATORY CONTEXT

Various laws apply to the evaluation and treatment of cultural resources. CEQA requires the Energy Commission to evaluate cultural resources by determining whether they meet several sets of specified criteria. These evaluations then influence the analysis of potential impacts to the resources and the mitigation that might be required to ameliorate any such impacts. In the Decision for the Licensed HBEP, the Energy Commission evaluated cultural resources according to CEQA's criteria for historical resources and unique archaeological resources, as well as the city of Huntington Beach's local landmarks register (CEC 2014a:5.3-1–5.3-2, 5.3-9–5.3-10). Since the Energy Commission approved the Licensed HBEP, CEQA and other portions of the California Public Resources Code were amended by Assembly Bill 52 (AB 52) to define "tribal cultural resources" effective July 1, 2015.

California Native American Tribes, Lead Agency Tribal Consultation Responsibilities, and Tribal Cultural Resources

AB 52 amended CEQA to define California Native American tribes, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. "California Native American tribe" means a "Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission [NAHC] for the purposes of Chapter 905 of the Statutes of 2004" (Pub. Resources Code, § 21073). Lead agencies implementing CEQA are responsible to conduct tribal consultation with California Native American tribes about tribal cultural resources within specific time frames, observant of tribal confidentiality, and if tribal cultural resources could be impacted by project implementation, are to exhaust the consultation to points of agreement or termination.

Tribal cultural resources are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following.
 - a. Included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR).
 - b. Included in a local register of historical resources as defined in the Public Resources Code, section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in the Public Resources Code, section 5024.1(c). In applying the aforesaid criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (Pub. Resources Code, § 21074[a].)

A cultural landscape that meets the criteria of Public Resources Code, section 21074(a), is a tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope (Pub. Resources Code, § 21074[b]).

Historical resources, unique archaeological resources, and non-unique archaeological resources, as defined at Public Resources Code, sections 21084.1, 21083.2(g), and 21083.2(h) may also be a tribal cultural resource if they conform to the criteria of Public Resources Code, section 21074[a], two paragraphs above.

This section of the final staff assessment (FSA) of the PTA, therefore, assesses the proposed amendment's impacts on historical resources (including tribal cultural resources) and unique archaeological resources.

AB 52 also amended CEQA to state that a project with an impact that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2).

CULTURAL RESOURCES INVENTORY

The development of an inventory of cultural resources in and near the PAA is the requisite first step in the assessment of whether the project might, under Public Resources Code, section 21084.1, cause a substantial adverse change in the significance of an historical resource (including tribal cultural resources) or unique archaeological resource, and could, therefore, have a significant effect on the environment. The effort to develop the inventory has involved conducting a sequence of investigatory phases that includes doing background research, interpreting the results of the inventory effort as a whole, and evaluating whether found cultural resources are historically significant. This section discusses the methods and the results of each inventory phase, develops the cultural resources inventory for the analysis of the proposed amendment, and interprets the inventory to assess how well it represents the cultural resources of the PAA.

Project Area of Analysis

The PAA is a concept that staff uses to define the geographic area in which the proposed project has the potential to affect cultural resources. The effects that a project may have on cultural resources may be immediate, further removed in time, or cumulative. They may be physical, visual, auditory, or olfactory in character. The geographic area that would encompass consideration of all such effects may or may not be one uninterrupted expanse. It may include the project area, the routes of requisite transmission lines and water and natural gas pipelines, and other offsite ancillary facilities, in addition to one or several discontinuous areas where the project could be argued to potentially affect cultural resources.

For the amended HBEP, staff defines the PAA as comprising (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; (e) the off-site construction laydown area at the Alamitos Generating Station in Long Beach, Los Angeles County; (f) the construction parking and laydown area at the Plains All American Tank Farm; and (g) the area that would be affected by improvements to the Magnolia Street–Banning Avenue intersection.

Staff further defines the archaeological PAA as comprising the locations of proposed project modifications, in both their horizontal and vertical dimensions. Review of the PTA and the project owner's responses to staff data requests suggests that the majority of project components on the existing HBGS property would require excavation to depths of 5.00–5.75 feet below ground surface (AES 2015a:2-2–2-4, 2-8, 2-10–2-12, 2-14; AES 2015b:24–27). These depths and the locations of these project components are similar to those of the Licensed HBEP (see CEC 2014b:4.3-31–4.3-32). Nonetheless, staff lacks excavation information on five project components proposed on the HBGS property. Additionally, staff must consider the potential impacts of excavation work at the Plains All American Tank Farm, which is slated for use as an offsite laydown area as part of the proposed amendment. These eight components of the proposed amendment are summarized in **Cultural Resources Table 1**.

For ethnographic resources, the PAA is typically expanded to take into account sacred sites, traditional cultural properties (places), and larger areas such as ethnographic landscapes that can be vast and encompassing, including viewsheds that contribute to the historical significance of such historical resources. For the proposed amendment, staff identified no ethnographic resources and so defined no area of analysis for them.

Cultural Resources Table 1
Depth of Excavation by Amended Project Component

Project Activity	Maximum Depth of Excavation (ft)	References
Two new gas metering stations	Unknown	AES 2015a:2-8; AES 2015b:25
Wastewater discharge pipeline	Unknown	AES 2015a:2-4; AES 2015b:26
Demolish existing natural gas metering station	Unknown	AES 2015a:2-8; AES 2015b:25
Atmospheric flash tank	Unknown	AES 2015a:2-10
New 650,000-gal, onsite fire/service WST	Unknown	AES 2015a:2-11
Vegetation removal at PAM	Unknown	AES 2015a:5.2-2; AES 2015b:27; Fowler 2015
Excavate new entrance to PAM	2–3	AES 2015a:5.2-2; AES 2015b:27; Fowler 2015
Reconfigure Magnolia St–Banning Ave intersection	2–3	AES 2015a:2-14; AES 2015b:27
Abbreviations: AES = AES Southland Development; Ave = Avenue; ft = foot or feet; gal = gallon; PAM = Plains All American Tank Farm; St = Street; WST = water storage tank		

Background Research

The background research for the present analysis employs information that the petitioner and Energy Commission staff gathered from literature and record searches, as well as documents from the Licensed HBEP. The purpose of the background information is to help formulate the initial cultural resources inventory for the present analysis, to identify information gaps, and to inform the design and the interpretation of the field research that will serve to complete the inventory.

Literature Review and Records Search

The literature review and records search attempts to gather and interpret documentary evidence of the known cultural resources in the PAA. The source for the present search was the South Central Coastal Information Center of the California Historical Resources Information System.

Methods and Results

A total of 15 cultural resources studies have previously been conducted in the PAA (see **Cultural Resources Appendix A, Table A1**). The entire archaeological portion of the PAA had recently been surveyed for the presence of cultural resources, with the exception of the former Plains All American Tank Farm. An additional 28 cultural resources studies have previously been conducted within 1 mile of the PAA (see **Cultural Resources Appendix A, Table A2**).

The records search indicates that one cultural resource, the HBGS (P-30-176946), has previously been recorded in the project site, whereas six cultural resources have previously been recorded within the records search area (**Cultural Resources Appendix A, Table A3**). The Energy Commission determined that the HBGS is not an historical resource for the purposes of CEQA during the Licensed HBEP proceeding (CEC 2014a:5.3-10).

Additional Literature Review

Staff conducted additional research at the Energy Commission in-house library, the California State Library, and online sources. Staff also consulted the reports contained in the project owner's records search. The purpose of this research was to obtain an understanding of the natural and cultural development of the land in and around the PAA, identify locations of potential cultural resources, and have a partial, chronological record of disturbances in the PAA. Historic maps were important to this effort; all consulted historic maps are presented in **Cultural Resources Appendix A (Table A3)**.

Archaeological Survey

On July 9, 2015, CH2MHill archaeologist, Natalie Lawson, surveyed the Plains All American Tank Farm addition to the proposed amendment on behalf of the project owner (AES 2015a:5.3-2). In response to staff Data Request A49, the project owner offered this explanation of Ms. Lawson's survey methods: "The cultural resources survey of the Plains All American Tank Farm was conducted on September 28, 2011², by Natalie Lawson...field survey included all of the proposed disturbance area as well as a 200-foot-minimum buffer around the proposed disturbance area. The surveyed area was covered in 10-meter-wide transects" (AES 2015b:30). No archaeological resources were identified as a result of the survey (AES 2015a:5.3-3).

² CH2MHill archaeologist, Gloriella Cardenas, surveyed the Licensed HBEP project area. Ms. Cardenas's survey area included a small (about 1.4-acre) offsite parking area and a 200-foot buffer surrounding it. The parking area and buffer intersected a portion of the Plains All American Tank Farm. (AES 2012:5.3-19, Figure 5.3-1). Staff assumes that the project owner meant to identify Ms. Cardenas as having surveyed a portion of the tank farm property on July 28, 2011, while Ms. Lawson surveyed the balance of the tank farm on July 9, 2015.

Tribal Consultation

A check of the NAHC sacred lands files resulted in negative findings within a one-half-mile radius of the proposed project. Staff sent letters to all of the NAHC-listed tribes for the project vicinity, inviting them to comment on the proposed project and offered to hold face-to-face consultation meetings if any tribal entities so requested. 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 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. Provisions for avoidance and monitoring are contained in Conditions **CUL-6** and **CUL-7**.

Archaeological and Tribal Cultural Resources in the One-Mile Radius

The updated records search did not identify any additional cultural resources in the amended HBEP's records search area (AES 2015a:5.3-2). Of the six previously recorded resources identified in the records search area, four are archaeological resources and one is a natural shell accumulation that was recorded as a prehistoric archaeological site (**Cultural Resources Appendix A, Table A3**). The amended HBEP would not affect these resources, and they will not be discussed further in this analysis.

Potential Impacts

Staff has been unable to determine the depth of excavation required to build the first five amended project elements listed in **Cultural Resources Table 1**, all of which would be built on the HBGS property. These project elements are similar to others proposed under the Licensed HBEP and their proposed installation would, like the bulk of the Licensed HBEP, occur primarily in artificial fill sediments. Under these conditions, as-yet-unidentified, buried cultural resources would potentially occur within the bottom 0.5–2.0 feet (about 7.5 feet below the present ground surface) of proposed excavations (excepting foundation piles). Based on the Decision and in the lack of new evidence to the contrary, staff concludes that the potential cultural resources impacts of the two new gas metering stations, wastewater discharge pipeline, demolition of the existing natural gas metering station, installation of the atmospheric flash tank, and construction of a new 650,000-gallon, onsite fire/service water storage tank would be similar to impacts already analyzed; that is, there is the potential for construction to encounter buried archaeological resources. Conditions **CUL-1–8**, as licensed, would reduce the severity of such impacts to a less-than-significant level (CEC 2014a:5.3-7, 5.3-10).

Excavation entailed in the proposed excavation of new entrance to the Plains All American Tank Farm and reconfiguration of the Magnolia Street–Banning Avenue intersection would require 2–3 feet of excavation below ground surface—within fill and reworked sediments. These excavations would be unlikely to encounter and damage buried cultural resources. In the event that such an inadvertent discovery occurred during road-building or intersection improvements, existing Conditions **CUL-1–8** would reduce the severity of these impacts to a less-than-significant level.

The proposed vegetation removal from the southeastern berm, or Greenbelt—a prerequisite for building the new construction entrance to the Plains All American Tank Farm—is a less clear-cut case compared to the impacts analyzed in the previous two paragraphs. According to MBC Applied Environmental Sciences (MBC 2010:5), the Greenbelt was built up from sediments graded from the Plains All American Tank Farm property. The tank farm property was built up between 1968 and 1973, according to historic aerial photographs and topographic maps; the Greenbelt appears to have been established by 1977 (EMS 2012:Appendix G). Removal of trees and other vegetation from the Greenbelt would primarily disturb the fill soils that were moved from the tank farm site, although removal of mature trees could result in disturbance of natural sediments. Conditions **CUL-1–8** for the Licensed HBEP and proposed amendment require a cultural resources training and monitoring program that is sufficient to reduce the impacts of inadvertent archaeological discoveries to a less-than-significant level, should any occur during vegetation removal.

Built Environment Resources in the One-Mile Radius

The project modification proposal to include the Plains All American Tank Farm changes the built environment study area by adding the tank farm itself to the project and extending the one-parcel architectural study area to accommodate the revised footprint. The project owner completed a survey and evaluation of the tank farm and a windshield-level survey of a residential neighborhood on the east side of Magnolia Street in order to accommodate the proposed project changes.

Plains All American Tank Farm

The tank farm appears to have been built between 1963 and 1972. The nearly 30-acre site comprises three storage tanks, a pump house and a valve/manifold structure. It is surrounded by a vegetated earthen containment berm. Each tank is located within a shallow retention basin. The tank farm has been evaluated by the project owner for its potential significance as an historical resource under CEQA. The tank farm is utilitarian in nature and not known to be associated with any significant trends, persons or design styles in California history. Huntington Beach has an impressive history with the oil industry, which played a strong role in its development. The period of significance for the oil industry in Huntington Beach is characterized as 1920 to 1950 (Galvin 2014). The tank farm was constructed well after the oil boom and is unlikely to be of significance to Huntington Beach's development. Staff agrees with the project owner and recommends that the Plains All American Tank Farm does not appear to meet any of the criteria for significance that would make it eligible for listing on the CRHR.

Kiowa Lane Residences

The project owner included a windshield survey of a residential neighborhood that is one-parcel adjacent to the Plains All American Tank Farm, across Magnolia Street and fronting Kiowa Lane. The investigation revealed that the neighborhood was developed and constructed in 1965. The development is characterized as mid-century, single-story ranch and two-story homes with Asian and Tiki-inspired eaves and hipped roofline treatments (AES 2015a:5.3-3). Some have clay tile roofs with a Spanish-eclectic sensibility. Many have been remodeled over the years. While there may have been a cohesive development of similarly-styled homes at the outset in 1965, modifications made over time have substantially changed the setting, feeling, design, workmanship and materials of the neighborhood. Therefore, there exists no integrity to the period of significance of 1965. The homes along Kiowa Lane within the one-parcel boundary of the tank farm are not eligible individually or as a district for listing under any of the criteria for the CRHR and therefore not recommended as historical resources under CEQA.

Environmental Justice Impacts

As discussed in the Socioeconomics section of the FSA, there is neither a minority nor poverty-based environmental justice population residing within a 6-mile buffer of the amended HBEP. Relevant to cultural resources, staff reviewed the ethnographic and historical literature to determine whether any Native American populations use the project area. Staff concluded that because there is no current hunting or gathering area, Native Americans are not considered an environmental justice population for this project.

Cumulative Impacts

The HBEP Decision concluded that construction of the HBEP would result in less-than-significant cumulative impacts on cultural resources; although construction of the amended HBEP could result in damage to as-yet-unidentified, buried archaeological resources, the Decision includes eight conditions designed to mitigate any such inadvertent impacts. Therefore, the incremental effect of the amended HBEP in conjunction with other projects will not be cumulatively considerable. (CEC 2014a:5.3-9.)

Since issuance of the Decision, additional projects have been built, proposed, and cancelled in the project vicinity, with varying degrees of cultural resources impacts. The amended HBEP, however, would not result in new or changed impacts on cultural resources; like the licensed HBEP, the amended HBEP's incremental effect would not be cumulatively considerable. Staff therefore concludes that the HBEP Decision does not require supplementation for cumulative impacts on cultural resources.

PUBLIC COMMENTS

Staff received two public comments on the cultural resources analysis contained in the preliminary staff assessment (PSA) for the amended HBEP. We summarize the comments and respond to them immediately below.

The list of abbreviations and acronyms in the cultural resources section does not reflect the change in ownership of the amended HBEP from AES Southland Development to AES Huntington Beach Energy, LLC (Castaños 2016:1).

The abbreviations and acronyms list now correctly reflects the change of ownership of the amended HBEP.

*The project owner requests that staff add to Condition **CUL-1** a provision guaranteeing automatic approval of a prospective Cultural Resources Specialist (CRS) that has served as a CRS on Energy Commission projects within the last 5 years, except under limited circumstances (Castaños 2016:8).*

Staff declines to add the project owner's suggested provision to Condition **CUL-1**. CRSs perform an important function with regard to implementing mitigation for cultural resources. No two projects present identical cultural resources impact potential, even projects in close proximity. Therefore, it is imperative that CRSs be approved with the specific project on which they will be working in mind. Past approval of a CRS on one project does not automatically qualify the same CRS for another project that may require different regional knowledge or expertise. Additionally, the qualifications of a CRS may change over time as missing information comes to light or inaccurate information is corrected, whereby a CRS approved several years previously may not be considered qualified subsequently. Lastly, as with any profession, there is the possibility that a CRS that was previously found adequate subsequently engages in compromising job-related conduct that disqualifies them from being considered an adequate candidate for overseeing implementation of project mitigation. In this context such conduct could include divulging confidential information about cultural resources, or conviction of looting, gross negligence, or dereliction of duty. While staff would hope that such instances would be rare, nevertheless, it remains a possibility. Staff does not believe that the condition as currently in place is onerous or otherwise difficult to comply with from a time or resource perspective. For these reasons, staff recommends the Commission retain the current wording of **CUL-1**.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that no known historical resources or unique archaeological resources have been identified in the PAA. As with the Licensed HBEP, however, construction of the amended HBEP could result in impacts on buried, as-yet-unidentified cultural resources. Such impacts would most likely occur during construction of the project components for which the depth of excavation is unknown (see **Cultural Resources Table 1**); however, excavation to construct even these project components appear consistent with the scale of excavation described for the Licensed HBEP (that is, the project elements summarized in **Cultural Resources Table 1** are unlikely to require deeper excavations than what is already licensed). Staff therefore agrees with the project owner that existing license Conditions **CUL-1–8** are sufficient to reduce the severity of any inadvertent impacts on buried cultural resources to a less than significant level. Staff also agrees that the amended HBEP would conform to LORS relevant to cultural resources.

PROPOSED CONDITIONS OF CERTIFICATION

Staff proposes three modifications to the HBEP conditions of certification to improve their clarity. The first modification is to **CUL-1**, in which the extraneous word “include” is deleted (it is not needed before the word “have”). The second modification is in **CUL-3**, where staff moved Verification 1 to bullet 11 in the body of the condition. What was inadvertently written as Verification 1 of **CUL-3** in the Final Decision was not in fact a verification but descriptive of one content requirement of the Cultural Resources Mitigation and Monitoring Plan. Staff deleted two words from **CUL-6** for grammatical correctness. Deleted text is in ~~striketrough~~. New text is **bold** and underlined.

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:

- a. A background in anthropology, archaeology, history, architectural history, or a related field;
- b. At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;
- c. At least one year of field experience in California; and
- d. 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.

The project owner may replace the CRS by submitting the required resume, references and contact information of the proposed replacement to the CPM.

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:

- a. 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
- b. 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
- c. 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:

- a. Traditional ties to the area to be monitored, and
- b. 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 mobilization³, 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 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.

³ For purposes of the Conditions of Certification for Cultural Resources, we will refer to these activities as “Cultural Resources Ground Disturbances”.

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 ~~C~~conditions of ~~C~~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.

Verification:

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 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, any NAMs involved in monitoring, 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 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.**

Verification:

- ~~1. 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.~~
1. 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.
2. 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.
3. 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).
4. 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. 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 ARMAR 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

In the event that a CRHR eligible (as determined by the CPM) cultural resource is discovered, at the direction of the CPM, the project owner shall ensure that the CRS or alternate CRS monitors full time all ground disturbances in the area where the CRHR-eligible cultural resources discovery has been made. The level, duration, and spatial extent of monitoring shall be determined by the CPM. In the event that the CRS believes that a current level of monitoring is not appropriate, a letter or email 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.

Full-time archaeological monitoring for the project, if deemed necessary due to the discovery of a CRHR-eligible cultural resource, shall consist of archaeological monitoring of all earth-moving activities in the area(s) of discovery(ies), for as long as the CPM requires.

The project owner shall obtain the services of one or more NAMs to monitor construction-related ground disturbance in areas, if any, 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 a 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.

If monitoring should be needed, as determined by the CPM, due to the discovery of a CRHR-eligible cultural resource, the CRS 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 on forms provided by the CPM. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions.

Upon becoming aware of any incidents of non-compliance with the conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered. 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.
 - 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).

If requested by the CPM, 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.
- Maps shall include labeled artifacts, project boundaries, previously recorded sites and isolates, aerial imagery background, and appropriate scales.

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 UTMs.
- Contain completed DPR 523A forms for all artifacts recorded or collected in that month **shall be** submitted as one combined PDF that includes an index and bookmarks. 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.
- 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.

Verification:

1. 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.
2. While monitoring is on-going and as required by the CPM, the project owner shall submit each day's monitoring logs and cover sheet merged into one PDF document by email within 24 hours.
3. The CRS and/or project owner shall notify the CPM of any incidents of noncompliance with the conditions and/or applicable LORS by telephone or email within 24 hours.
4. 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.
5. While monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary of cultural resources related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.

6. 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.
7. 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 email detailing the CRS's justification for changing the monitoring level.
8. 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.

Verification:

1. 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 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.
2. 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.
3. 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.
4. 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.
5. 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.

Verification:

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.

CULTURAL RESOURCES ABBREVIATION AND ACRONYM GLOSSARY

AB	Assembly Bill
AES	AES Huntington Beach Energy, LLC (project owner)
Cal. Code Regs., tit. 20	Title 20, California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
Conditions	Conditions of Certifications
CRHR	California Register of Historical Resources
EMS	Environmental Management Strategies
FSA	final staff assessment
HBEP	Huntington Beach Energy Project
HBGS	Huntington Beach Generating Station
HCRE	Historic and Cultural Resources Element
LORS	laws, ordinances, regulations, and standards
NAHC	Native American Heritage Commission
PAA	project area of analysis
PSA	preliminary staff assessment
PTA	petition to amend
Pub. Resources Code	Public Resources Code (State of California)

REFERENCES

The *tn: 00000* in a reference below indicates the transaction number under which the item is catalogued in the Energy Commission's Docket Unit. The transaction number allows for quicker location and retrieval of individual items docketed for a case or used for ease of reference and retrieval of exhibits cited in briefs and used at Evidentiary Hearings.

AES 2012 – AES Southland Development, with CH2M Hill. *Application for Certification: Huntington Beach Energy Project.* June. Submitted to California Energy Commission, Sacramento. On file, Docket Unit, California Energy Commission, Sacramento.

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CULTURAL RESOURCES APPENDIX A

CULTURAL RESOURCES APPENDIX A: BACKGROUND INFORMATION

BACKGROUND RESEARCH

Cultural Resources Table A1
Literature Review Results within or adjacent to the PAA

Author and Date of Study	SCCIC Study Number	Resources Identified in PAA
Ahlering 1973	OR-00001	None
Atkins 2012	Not at SCCIC	None
Beckman 2010	Not at SCCIC	None
Brown and Maxon 2010	OR-03842	P-30-176946 (Fuel Oil Tanks)
Cardenas et al. 2012	Not at SCCIC	P-30-176946 (Fuel Oil Tanks); 21730 Newland St (HBGS); 8551 Edison Ave (Beach Auto Wrecking); 8601 Edison Ave (Beachside Recycling Center)
Cardenas et al. 2013	Not at SCCIC	None
CEC 2001	Not at SCCIC	None
Farmer 2000	Not at SCCIC	None
Garcia 2009	Not at SCCIC	None
Hoover 2000	OR-02456	None
Mason 1987	OR-02033	None
Padon 1987	OR-00880	None
Romani 1982	OR-00644	None
URS 2001	Not at SCCIC	None
URS 2006	Not at SCCIC	None
Abbreviations: Ave = Avenue; CEC = California Energy Commission; HBGS = Huntington Beach Generating Station; OR = Orange County; PAA = project area of analysis; SCCIC = South Central Coastal Information Center; St = Street; URS = URS Corporation		

Cultural Resources Table A2
Literature Review Results: Studies outside PAA, in Records Search Area

Author(s) and Date of Study	SCCIC Study Number
Archaeological Associates 1980	OR-00493
Billat 2003	LA-06909
Bonner 2007	OR-03450
Cooley 1979	LA-00522
Davy 1997	OR-01931
de Barros et al. 2002	OR-02585
de Barros et al. 2005	OR-03316
de Barros et al. 2006	OR-03317
Demcak 1999	OR-02256
Dillon 1997	OR-01629
DTSC 2013	Not at SCCIC
Duke 2000	OR-02229
Ehringer 2011	OR-04152
Galvin 2012	Not at SCCIC
LADWP 2009	Not at SCCIC
LADWP 2010a	Not at SCCIC
LADWP 2010b	Not at SCCIC
Langenwalter and Brock 1985	OR-00801
Lapin 2000	OR-02134
Losee 2009	OR-03582
McKenna 1990	LA-02114
McKenna 2001	LA-05215
Mason and Chandler 2003	OR-03614
Moffatt & Nichol 2012	Not at SCCIC
Shepard 2003	LA-06107, OR-2774
Stickel 1991	OR-01272
Strudwick 2004	LA-08487
Strudwick et al. 1996	LA-05890
Abbreviations: DTSC = Department of Toxic Substances Control; LA = Los Angeles County; LADWP = Los Angeles Department of Water and Power; OR = Orange County; PAA = project area of analysis; SCCIC = South Central Coastal Information Center	

Cultural Resources Table A3
Records Search Results: Previously Recorded Cultural Resources

Resource Designation	Type	Description	Project Component	CRHR Status	Source
P-30-000149 (CA-ORA-149)	Prehistoric archaeological site	Shell midden	Records search area	Recommended eligible	Ahlering 1973; de Barros et al. 2002, 2005, 2006; Dillon 1997; Douglas 1980; McKinney 1964
P-30-000276 (CA-ORA-276)	Prehistoric archaeological site	Unknown	Records search area	Unevaluated	Ahlering 1973
P-30-001531	Natural shell midden	Natural shell midden	Records search area	Recommended ineligible	AES 2012:5.3-16; Cardenas et al. 2012:4-2; Duke 1999, 2000
P-30-001654 (CA-ORA-1654H)	Historic archaeological site	Dump site	Records search area	Recommended ineligible	de Barros et al. 2002, 2005, 2006; Dillon 1997
P-30-176946	Historic structures	HBGS Fuel Tanks	Adjacent to Project Site	Recommended ineligible	AES 2012:5.3-16; Brown and Maxon 2010:MS-1
P-19-001821	Prehistoric archaeological site	Shell midden	Records search area	Unevaluated	McKenna 1990
P-19-186880	Historic structures	AGS Fuel Oil Tank Farm	Records search area	Recommended ineligible	Strudwick 2004
Abbreviations: AGS = Alamitos Generating Station; CA = California; CRHR = California Register of Historical Resources; HBGS = Huntington Beach Generating Station; ORA = Orange County; P = Primary Number					

**Cultural Resources Table A-4
Historic Maps Consulted**

Map Name	Scale	Survey Date	Reference
Map of Private Grants and Public Lands	Not specified	About 1869	Day 1869
Plat of Rancho Los Alamitos	1 inch = 40 chains	About 1873	GLO 1873
Map of the County of Los Angeles	1 inch = 2 miles	About 1877	Wildy and Stahlberg 1877
Santa Ana Quadrangle	1 inch = 1 mile	1894	USGS 1896a
Downey Quadrangle	1 inch = 1 mile	1894	USGS 1896b
Santa Ana Quadrangle	1 inch = 1 mile	Culture revised in 1900	USGS 1945
Corona Quadrangle	30-minute	About 1902	USGS 1902
Alamitos Mining Plat	1 inch = 600 ft	1905	GLO 1905
Supervisory Districts of Orange County	Not specified	About 1912	McBride 1912
Survey Plat, T 5 S, R 12 W	1 inch = 0.5 mile	1914	GLO 1914
Paved State and County Highways	Not specified	About 1916	McBride 1916
Official Map of Orange County	Not specified	About 1918	Finley and McBride 1918
The Official Map of Orange County	Not specified	About 1922	Finley and McBride 1922
Long Beach	1 inch = 2,000 ft	About 1925	EDR 2011a
Aerial Photograph	1 inch = 500 ft	1928	EDR 2011b
Aerial Photograph	1 inch = 555 ft	1938	EDR 2011b
Metzker's Map of Orange County	Not specified	About 1939	Metsker 1939
Downey Quadrangle	1 inch = 1 mile	Surveyed 1923, aerial photographs taken 1941	COE 1942
Aerial Photograph	1 inch = 666 ft	1947	EDR 2011b
Newport Beach Quadrangle	1 inch = 2,000 ft	Culture/drainage revised from aerials taken 1947	USGS 1949a
Los Alamitos Quadrangle	1 inch = 2,000 ft	Culture/drainage revised from aerials taken 1947	USGS 1949b
Los Alamitos Quadrangle	1 inch = 2,000 ft	Culture/drainage revised from aerials taken 1947	USGS 1950
Newport Beach Quadrangle	1 inch = 2,000 ft	Culture/drainage revised from aerials taken 1947	USGS 1951
Downey Quadrangle	1:50,000	About 1947	EDR 2011a
Newport Beach Quadrangle	1 inch = 2,000 ft	Aerial photographs taken 1963	USGS 1972
Los Alamitos Quadrangle	1 inch = 2,000 ft	Aerial photographs taken 1963	USGS 1981

Abbreviations: COE = Corps of Engineers; EDR = Environmental Data Resources; ft = feet; GLO = General Land Office; R = Range; S = South; T = Township; USGS = U.S. Geological Survey; W = West

CULTURAL RESOURCES ABBREVIATION AND ACRONYM GLOSSARY

AGS	Alamitos Generating Station
Ave	avenue
CA	California
CEC	California Energy Commission
COE	Corps of Engineers
CRHR	California Register of Historical Resources
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
ft	foot, feet
GLO	General Land Office
HBGS	Huntington Beach Generating Station
LA	Los Angeles County
LADWP	Los Angeles Department of Water and Power
OR	Orange County
ORA	Orange County
P	Primary Number
PAA	project area of analysis
R	Range
S	South
SCCIC	South Central Coastal Information Center
St	street
T	Township
URS	URS Corporation
USGS	U.S. Geological Survey
W	West

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HAZARDOUS MATERIALS MANAGEMENT

Testimony of Brett Fooks, PE and Geoff Lesh, PE

SUMMARY OF CONCLUSIONS

The Petition to Amend (PTA) the Huntington Beach Energy Project (HBEP) proposes to modify the project and would not require substantive changes to the existing set of hazardous materials management conditions of certification. Consistent with the conclusions in the project's licensed Huntington Beach Energy Project 2014 Energy Commission Final Decision (Decision), staff has determined that the potential impacts of the proposed PTA would be less than significant. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the 2014 Decision is necessary for Hazardous Materials Management. The committee may rely upon the environmental analysis and conclusions of the Decision with regards to Hazardous Materials Management and does not need to re-analyze them.

Staff determined that by following the existing conditions of certification resulting from the Decision with minor edits to Conditions **HAZ-4**, **HAZ-8**, and **HAZ-9**, hazardous materials storage and use at HBEP would comply with all applicable laws, ordinances, regulations, and standards (LORS) and would not result in any unmitigated significant potential impacts to the public or environment.

INTRODUCTION

The purpose of this analysis is to determine whether this PTA would require new mitigation or modified hazard materials management conditions of certification. As discussed in detail in the Project Description section, the amended HBEP would be a natural gas fired, combined-cycle and simple-cycle, air-cooled electrical generating facility on the site of the existing Huntington Beach Generation Station in the city of Huntington Beach, California.

SUMMARY OF THE DECISION

The Decision found that the storage, use, and transportation of hazardous materials would not result in any significant direct, indirect, or cumulative adverse impacts to the public or environment. With adoption of the conditions of certification proposed at the time, the Committee found that the project would comply with all applicable LORS and would not result in any unmitigated significant impacts.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

**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 §7412(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 (CA H&S), 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 (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 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.
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.

Applicable LORS	Description
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 RMP and off-site consequence analysis 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; California Health and Safety Code §§ 25249.5 – 25249.13)	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.
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.
National Fire Protection Association (NFPA) 56	NFPA 56 is the Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems.

The City of Huntington Beach municipal code section 17.58 was repealed in July of 2015. The California Health and Safety Code (HSC), having preeminence over the local ordinance and having had consistent updates to it, made municipal code section 17.58 obsolete. The project would continue to comply with all applicable laws, ordinances, regulations, and standards.

ENVIRONMENTAL IMPACT ANALYSIS

Staff has reviewed the PTA for potential environmental impacts and for consistency with applicable LORS. Staff has determined that the PTA does not increase or decrease the use, storage, or transportation of hazardous materials.

After reviewing the PTA, staff has proposed revisions to Conditions of Certification **HAZ-4**, **HAZ-8**, and **HAZ-9**. **HAZ-4** was revised to update the design standard of the aqueous ammonia storage tank to the ASME Code for Unfired Pressure Vessels, Section VIII, Division 1. The condition referenced ANSI K61.6, an old standard applicable for anhydrous ammonia which the project would not be using. The API 620 was removed because the project would not build an aqueous ammonia tank to this standard. The secondary containment requirement for the aqueous ammonia storage tank was simplified to make it consistent with LORS. **HAZ-8** was updated to reference the latest North American Electrical Reliability Corporation (NERC) security guidelines, version 1.9, rather than the initial 2002 guidelines. **HAZ-9** was updated to reference the correct citation to the latest version of NFPA 56 for the written procedures.

RESPONSE TO COMMENTS

Comment: *The applicant commented on the Alamitos Energy Center (AEC) Preliminary Staff Assessment **HAZ-4** Condition of Certification. AES would like to have the secondary containment language match between AEC and HBEP because the applicant would be using the same contractor to design and construct the aqueous ammonia tanks for both projects (CH2 2016y).*

Staff Response: Staff agrees with the comment. Staff has revised HBEP **HAZ-4** to simplify the secondary containment requirement, and would ensure that the requirements are consistent for both the HBEP and AEC projects.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that the proposed amendment would not present any increase in the potential for significant impacts to the public or the environment resulting from the use of hazardous materials at the project. The existing Conditions of Certification resulting from the Decision (with the changes to **HAZ-4**, **HAZ-8**, and **HAZ-9** discussed above) would provide adequate mitigation of potential risks.

PROPOSED CONDITIONS OF CERTIFICATION

Staff concludes that the existing conditions of certification, as modified, are sufficient to ensure that there would be no unmitigated significant impacts. Additions are shown in **bold underlined** text and deletions are shown in ~~strikethrough~~.

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, strengths, and quantities 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 **the ASME Code for Unfired Pressure Vessels, Section VIII, Division 1** ~~either the ASME Pressure Vessel Code and ANSI K61.6 or to API 620. In either case, t~~^{he} storage tank shall be protected by a secondary containment basin capable of holding **precipitation from a 24 hour, 25-year storm event plus 100 percent capacity of the largest tank within its boundary** ~~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 basins 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~~^{feet}. 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 Prior to initial delivery, the project owner shall direct vendors delivering bulk quantities (>800 gallons per delivery) of hazardous material (e.g., aqueous ammonia, lubricating and insulating oils) 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 initial receipt of bulk quantities (>800 gallons per delivery) of hazardous materials (e.g., aqueous ammonia, lubricating or insulating oils) and at least ten (10) days prior to a new vendor delivery of bulk quantities (>800 gallons per delivery), the project owner shall submit a copy of the letter containing the route restriction directions that were provided to the hazardous materials vendor 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 **Site** Security Plan shall include the following:

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

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction 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 **Security Guideline for the Electricity Sector: Physical Security v1.9** 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 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 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.

Verification: 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.

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 **4.4.1. 4.3.4**

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 **4.4.1 4.3.4**) 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 ~~GB~~ **Chief Building Official** for information and to the CPM for review and approval.

REFERENCES

CH2 2016y – CH2MHill (TN 212487). Alamitos Energy Center Docket - Preliminary Staff Assessment Initial Comments, dated July 27, 2016. Submitted to CEC/Dockets on July 27, 2016

HBEP 2012a – AES Southland Development, LLC / Stephen O'Kane (TN 66003). Application for Certification (AFC), Volume I & II, dated, 06/27/2012. Submitted to CEC/Dockets on 06/27/2012.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I,

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for employment at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I,

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for contract work at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

(Name of person signing affidavit)(Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

(Company name)

for hazardous materials delivery to

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

LAND USE

Testimony of Steven Kerr

SUMMARY OF CONCLUSIONS

California Energy Commission (Energy Commission) staff concludes that the proposed amendment to the license for the Huntington Beach Energy Project (HBEP) would have no new land use impacts and the mitigation for the original project would still be applicable. This mitigation would not require any substantive changes beyond the minor update to Condition of Certification **LAND-1** to include the additional 1.4 acres that the project owner has acquired from Southern California Edison (SCE), increasing the size of the Huntington Beach Energy Project (HBEP) site from 28.6 acres as licensed to 30 acres as amended. Staff also concludes that the findings of fact from the November 2014 Commission Decision (Decision) would still apply to the amended HBEP. Therefore, in accordance with California Environmental Quality Act (CEQA) Guidelines section 15162, staff concludes that no supplementation to the Decision is necessary for Land Use. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to land use and does not need to re-analyze them.

INTRODUCTION

Staff reviewed the Decision for the licensed HBEP and analyzed the proposed changes for the amended HBEP. As discussed in detail in the Project Description section of this document, the amended HBEP would be a natural-gas-fired, combined-cycle and simple-cycle, air-cooled electrical generating facility located on the site of the existing Huntington Beach Generation Station (HBGS) in Huntington Beach, California.

SUMMARY OF THE DECISION

The list below provides a short summary of the Decision with regards to the Land Use technical area. Based on the evidence presented in the original proceeding, the Energy Commission made the following findings and conclusions.

FINDINGS OF FACT

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 Public-Semipublic 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 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 CEQA.
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. (CEC 2014bb, pg. 6.1-24 – 6.1-25)

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project have changed since the Commission Decision was published in November 2014. Additionally, the proposed amendment would not trigger new LORS that may not have been applicable to the original project.

ENVIRONMENTAL IMPACT ANALYSIS

In accordance with CEQA Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Land Use. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to land use and does not need to re-analyze them due to the following conclusions.

- The changes in the Petition to Amend (PTA) would not create new significant environmental effects or substantial increases in the severity of previously identified significant effects.
- The PTA does not propose substantial changes which would require major revisions of the Land Use analysis in the Decision.
- The circumstances under which the amended HBEP would be undertaken would not require major revisions of the Land Use analysis in the Decision.

Staff's conclusion is supported by the following key factual information.

- No LORS applicable to land use have changed since the Decision was published in November 2014.
- The city of Huntington Beach General Plan designation of Public (P) and zoning of Public-Semi-public (PS) and Coastal Zone Overlay District (CZ), as well as the Oil Production Overlay District (O), remain the same for the project site.
- Major utilities are permitted uses in the PS zone and CZ overlay district subject to a conditional use permit and coastal development permit.
- The findings from the Decision in support of a variance, conditional use permit, and coastal development permit for the licensed HBEP are applicable to the amended HBEP.
- With implementation of existing Condition of Certification **LAND-1** the amended HBEP would be consistent with the city of Huntington Beach existing land use plans and zoning ordinances.
- Existing Condition of Certification **LAND-1** would remain applicable and feasible and the project proponent, AES Huntington Beach Energy, LLC, has not requested any changes to the condition.

The amended HBEP would be constructed entirely within the site of the existing HBGS. Both power blocks would interconnect to the existing onsite SCE 230-kilovolt switchyard (HBEP 2015a, 5.6-1).

Staff proposes one minor update to **LAND-1** to include the additional 1.4 acre triangle-shaped paved parking lot between the SCE substation and the boundary of the licensed HBEP that the project owner acquired from SCE, which would increase the HBEP site from 28.6 acres as licensed to 30 acres as amended (HBEP 2015a, 5.6-1).

Construction of the amended HBEP may utilize an additional 20 acres beyond the 1.9 acres identified in the Commission Decision at the former Plains All American Tank Farm site located adjacent to the HBEP site for temporary offsite construction laydown and construction worker parking. As previously identified in the Decision, the General Plan land use designation for the Plains All American Tank Farm site is Public and the zoning is Public-Semi-public (CEC 2014bb, p. 6.1-6). Further utilization of the Plains All American Tank Farm site would be preferable to the other previously identified potential offsite laydown and parking areas because of its close proximity to the project site (HBEP 2015a, p. CEC 2014d, p. 4.5-5). For additional information regarding temporary offsite construction laydown and construction worker parking, please see the **Traffic and Transportation** and **Biological Resources** sections of this assessment.

But for the Energy Commission's exclusive authority to license the project, licensing the HBEP within the HBGS site would have required 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. (CHB 2016a, section 241.10)

VARIANCE

Under the zoning and subdivision ordinance in the city of Huntington Beach, structures in the PS district are limited to 50 feet. The licensed HBEP would have utilized 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.

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.

In the Decision the Energy Commission gave due deference to the determination by the city of Huntington Beach of its own ordinances. (Cal. Code Regs., tit. 14, §1744(e).) The Energy Commission found that the evidence contained in the city's resolution was sufficient to support the necessary findings for a variance related to the over-height of the structures proposed by the licensed 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 the city 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.

The amended HBEP proposes stack heights of 150 feet for the GE Frame 7FA.05 combustion-turbine generator units and 80 feet in height for the LMS100 units. While the 150-foot stack height for the amended project is higher than the 120-foot stack height of the licensed project, it is still a significant reduction in height from the current HBGS stack heights of 200 feet. The approval of the variance for the licensed HBEP relied on the submission of architectural and landscaping plans for screening (CEC 2014bb, p. 6.1-19). An assessment of applicable city policies regarding screening and design improvements and the required visual screening and enhancement plan for project structures is included in the **Visual Resources** section of this assessment. Condition of Certification **VIS-1** includes the requirements for the visual screening and enhancement plan for project structures.

On March 10, 2016, the city of Huntington Beach Design Review Board reviewed the project owner's revised conceptual visual screening plan for the amended HBEP and forwarded a recommendation for approval to the City Council (HBEP 2016l). On May 2, 2016, the City Council adopted Resolution No. 2016-27, recommending that the Energy Commission incorporate the revised conceptual visual screening plan and updating their findings for the variance (HBEP 2016dd). The city's findings remain the same in spirit with the findings made for the licensed project. Minor revisions include updates to specific references of the stack heights and architectural enhancements of the amended HBEP.

Therefore, staff concludes that the Energy Commission's findings related to the variance for the licensed HBEP would still be relevant to the amended HBEP and would not require major revisions to the previous decision.

CONDITIONAL USE PERMIT

The Energy Commission found that a conditional use permit could be issued for the licensed 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 (CEC 2014bb, p. 6.1-19).

A project may generate a potential significant environmental impact related to land use if it would introduce an unmitigated noise, odor, public health or safety hazard, visual, or adverse traffic effect on surrounding properties (CEC 2014d, pg. 4.5-26).

In this FSA, staff concluded that the project would comply with LORS, and with the implementation of the recommended mitigation measures described in the conditions of certification, potential environmental impacts of the amended HBEP project would be mitigated to levels of less than significant (see **Executive Summary**, "Summary of Environmental Consequences and Mitigation" subsection). The amended 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, staff concludes that the amended project would not result in any physical land use incompatibilities with the existing surrounding land uses.

Staff finds that the Energy Commission's conditional use permit findings for the licensed HBEP would be applicable to the amended HBEP and would not require major revisions to the previous decision because existing transmission and other linear facilities would still be used and LORS have not changed.

COASTAL DEVELOPMENT PERMIT

The Energy Commission also found that a coastal development permit could be issued for the licensed HBEP. 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, the HBEP meets the requirements of public access and public recreation policies contained in the California Coastal Act. (CEC 2014bb, p. 6.1-20)

Staff finds that the amended HBEP could properly receive a coastal development permit as the circumstances considered for the Energy Commission's findings for the licensed HBEP remain unchanged for the amended project.

Because the amended project would qualify for the issuance of a variance, a conditional use permit, and a coastal development permit, staff finds that the amended HBEP remains consistent with the Huntington Beach zoning code and concludes that no supplementation to the Commission Decision is necessary for Land Use.

The proposed amendment would have no new land use impacts and would not result in a change or deletion of Condition of Certification **LAND-1** adopted in the Commission Decision in the licensed HBEP proceeding. Staff recommends a minor edit to Condition of Certification **LAND-1**, as shown below, to incorporate the additional 1.4 acres that the project owner has acquired from SCE, increasing the size of the HBEP site from 28.6 acres as licensed to 30 acres as amended.

CUMULATIVE 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., tit. 14, §15065(a)(3)).

The cumulative land use and planning analysis considers past, current, and probable future projects that are relatively near the proposed project that would contribute to cumulative impacts by impacting agricultural or forest lands, disrupting or dividing an established community, conflicting with applicable land use plans, policy or regulation, or conflicting with an applicable habitat conservation plan or natural community conservation plan.

Land Use Table 1 (below) displays the reasonably foreseeable significant sized development projects within approximately one mile of the project site in the city of Huntington Beach.

**Land Use Table 1
Cumulative Projects**

Project Title	Description	Location	Status of Project
Huntington Beach Generating Station Demolition (Demolition of Units 3 & 4)	Demo/removal of Units 3 & 4 from the existing Huntington Beach Generating Station.	Huntington Beach Generating Station, Huntington Beach	Demo estimated Q2 2020 to Q1 2022 (27 mo.)
Poseidon Desalination Plant	A 50-million gallon per day, seawater desalination facility located on 11-acre portion of the existing HBGS facility. Project would use existing HBGS seawater intake and outfall pipelines for operations.	21730 Newland St, Huntington Beach	Planning
Magnolia Oil Storage Tank and Transfer Facility Demolition and Removal	Demolition and removal of three empty above-ground crude oil storage tanks and ancillary site improvements.	21845 Magnolia St, Huntington Beach	In Progress
Newland St Residential (Pacific Shores)	Develop and subdivide former industrial site to residential with 204 multi-family residential units and two-acre public park.	21471 Newland St, Huntington Beach	Completed
Remedial Action Plan for Ascon Landfill Site	Remedial Action Plan (RAP) includes partial removal of waste materials and construction of protective cap over remaining waste materials.	Magnolia St and Hamilton Ave, Huntington Beach	Plan Check
Hilton Waterfront Beach Resort Expansion	Nine-story tower with 156 new guestrooms, appurtenant facilities, 261 parking spaces, a loading dock and other back-of-house facilities.	21100 Pacific Coast Hwy, Huntington Beach	Plan Check
Brookhurst Street Bridge Preventative Maintenance Project	Repair and rehabilitate the Brookhurst Street Bridge in the city of Huntington Beach.	Brookhurst St Bridge, Huntington Beach	Plan Check
P2-92 Sludge Dewatering and Odor Control	Build new sludge and odor control facilities at existing Plant 2.	Santa Ana River Channel, Huntington Beach	Construction scheduled Spring 2016
Pacific City	516 condominiums; 8 story-250 room hotel, spa and health club; and 191,100 sq. ft. visitor-serving commercial with retail, office, restaurant, cultural, and entertainment	21002 Pacific Coast Hwy, Huntington Beach	Under Construction

Source: Executive Summary Table 1

The following land use areas have been analyzed with regard to cumulative land use impacts.

AGRICULTURE AND FOREST

The project as amended does not have any impacts to agricultural or forest lands or conflict with any land that is zoned for agricultural purposes and therefore, does not contribute to cumulative impacts related to this land use area.

PHYSICAL DISRUPTION OR DIVISION OF AN ESTABLISHED COMMUNITY

Because the amended HBEP would be located entirely within the existing HBGS site and would not physically disrupt or divide an established community, it would not contribute to a cumulative impact in this land use area.

CONFLICT WITH ANY APPLICABLE HABITAT OR NATURAL COMMUNITY CONSERVATION PLAN

The amended HBEP does not conflict with any habitat or natural community conservation plans and would not contribute to any cumulative impacts in this land use area.

CONFLICT WITH ANY APPLICABLE LAND USE PLAN, POLICY OR REGULATION

Staff's analysis of the information available shows that the amended project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, with the inclusion of the proposed condition of certification. The amended HBEP would not result in cumulative impacts in this land use area.

RESPONSE TO COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT

Written comments on the Land Use section of the amended HBEP Preliminary Staff Assessment (PSA) were submitted by Stoel Rives, LLP, on behalf of the project owner (Stoel Rives 2016). The city of Huntington Beach also provided comments on the PSA related to land use (CHB 2016b).

AES HUNTINGTON BEACH ENERGY, LLC

Comment: *On June 17, 2016, the Energy Commission approved the transfer of ownership of the Huntington Beach Energy Project from AES Southland Development, LLC, to AES Huntington Beach Energy, LLC.*

Response: Staff has reflected the change of ownership where it is noted above in the "Environmental Impact Analysis" subsection.

Comment: *Page 4.5-5, third paragraph: The city of Huntington Beach approved the new resolution (Resolution No. 2016-27), thus staff should update the information referencing the "expected" city action.*

Response: Staff has updated the subsection “Variance” above to reference the new resolution.

CITY OF HUNTINGTON BEACH

Comment: *Page 4.5-5: The City Council adopted Resolution No. 2016-27 regarding the height variance and architectural improvements has now been docketed on the Energy Commission website. The Land Use section of the PSA describes that the city has made findings for approval for conditional use permit and coastal development permit. The PSA should clarify that the city's resolution only addresses that variance findings could be made and does not draw any conclusions or findings related to conditional use permits or coastal development permits.*

Response: Staff has updated the subsection “Variance” above to reference the new resolution.

Comment: *A coastal development permit and mitigated negative declaration were previously approved for demolition of above-ground tanks and transmission lines at the Plains All American tanks site. These prior actions contemplated leaving the site in a vacant state with no proposed development. The newly proposed parking, construction laydown activities, intersection improvements, and changes to vegetated berm are subject to separate entitlement and coastal development permit analysis. There are ongoing questions regarding permitting authority over energy projects that include off-site activities. The staff assessment should include a complete description of how the proposed off-site activities comply with city requirements for development of a parking lot and construction storage areas within the Coastal Zone.*

Response: The amended HBEP is a unique large-scale industrial project for which, understandably, the city of Huntington Beach requirements for development do not have specific applicability to account for every aspect of the project. As previously commented on by city staff and stated in the FSA of the licensed HBEP proceeding, establishing temporary parking lots for use by HBEP construction workers within the city of Huntington Beach would typically require approval of a coastal development permit, but for the exclusive jurisdiction of the Energy Commission (CEC 2014d, pg. 4.5-5; CHB 2012a). Further, in comments to PSA Part A in the licensed HBEP proceeding, city staff stated that each location must also be improved in accordance with the temporary parking lot development standards described in Huntington Beach Zoning and Subdivision Ordinance Section 231.18 F (CHB 2012a).

In reviewing Section 231.18 F, it is apparent to staff that these regulations are intended more specifically to regulate development and use of seasonal and temporary commercial parking lots that may be permitted for a maximum of five years and typically available to members of the public who are customers paying a use fee per vehicle to the property owner. In contrast, the expanded use of the Plains All American Tank Farm site would be ancillary to the construction of the amended HBEP by providing a laydown and private parking area for the construction workforce, which would be available for use for the duration of the estimated 5-year and 7-months construction phase of the power plant facility (see **Socioeconomics** section).

Taking the uniqueness of the amended HBEP project into consideration, staff concludes that the amended HBEP would reasonably comply with city requirements for development of the construction parking and laydown area at the Plains All American Tank Farm site in that:

- A gravel surface would be installed on the portion of the site used for equipment laydown and parking to minimize dust and manage stormwater (HBEP 2015a, pg. 2-15) consistent with the intent of zoning ordinance Section 231.18 F(1) to provide an appropriate surface (CHB 2016a).
- The engineer-procurement-construction contractor would provide site security (HBEP 2015a, pg. 2-16) consistent with zoning ordinance Section 231.18 F(2)(7)(9) to provide a secure, attended to, and clean site.
- The site has an existing approximately 160-foot wide landscaped berm area along Magnolia Street that would not be affected by the HBEP construction parking and laydown area with the exception of where the new vehicle entrance would be cut through (HBEP 2015a, pg. 2-14, 5-12.5), greatly exceeding the 3-foot street-side landscaping requirement of zoning ordinance Section 231.18 F(3).
- The option of expanded use of the Plains site for parking and laydown as amended would be preferable to the use of the off-site parking area options already included in the licensed HBEP as it has the same General Plan land use designation of Public (PS) as the HBEP project site, whereas the other off-site parking options are designated Commercial Visitor (CV-F2), Residential Medium Density (RM-15), and Open Space Shoreline (OS-S) (CEC 2014bb, pg. 6.1-6).
- The Plains site parking and laydown area would be approximately 260-feet from the nearest residence in contrast with the currently licensed Newland Street parking area, which is directly adjacent to the Huntington By The Sea mobile estates and recreational vehicle (RV) park and the Pacific Coast Highway and Beach Boulevard parking area which is approximately 140-feet from the mobile estates and RV park.
- The site would comply with parking, access, and setback requirements, consistent with zoning ordinance Section 230.90(B) for contractor storage yards.
- Through discussions with city staff and reviewing the general plan and zoning code, it is clear that maintaining access to shore parking areas for residents and visitors is a priority for the city and the Coastal Commission (CEC 2014d, pg. 4.5-5; CCC 2014c). Expanded use of the Plains site for construction worker parking would further decrease the likelihood that the Huntington Beach city parking area option included in the licensed HBEP would be needed.

Further compliance with city requirements for development of the construction parking and laydown area would be ensured by Conditions of Certification **TRANS-3** – Traffic Control Plan, including a Parking/Staging Plan, **TRANS-4** – Encroachment into public rights-of way, **TRANS-8** – Construction worker parking/construction laydown access, **TRANS-9** – Replacement of street parking due to reconfiguration of Magnolia/Banning intersection, and **VIS-3** – Long-term construction screening, landscape protection, and site restoration plan – project demolition, construction, and commissioning. Each of these conditions of certification include the requirement that the project owner submit plans to the city of Huntington Beach for review and comment prior to approval by the CPM or CBO.

In conclusion, staff believes that the expanded use of the Plains site as amended would be reasonably consistent with city requirements where applicable, would not create new significant environmental effects, including to adjacent residential uses, and would improve upon the parking and laydown options as currently licensed for the HBEP.

Comment: *Land Use Table 1: Demolition of Units 3 and 4, is listed on the Cumulative Projects list. The PSA should also include demolition of Units 1 and 2 and demolition activities should be analyzed.*

Response: Demolition of Units 1 and 2 to the turbine deck is part of the amended HBEP, thus such demolition is not included in the cumulative projects list. Demolition activities of the amended HBEP are analyzed in the following sections of this staff analysis: **Air Quality, Biological Resources, Noise and Vibration, Public Health, Traffic and Transportation, Visual Resources, Waste Management, and Worker Safety and Fire Protection.**

Comment: *Page 4.5-9 Findings of Fact and Conclusions of Law: The PSA should clarify whether construction laydown within the city of Long Beach is still proposed and what are the impacts of the newly proposed construction laydown adjacent to residential at the Plains site.*

Response: As set forth in the PTA, large and heavy components of the generating units (e.g., turbines, generators, transformers and other heavy components) would arrive by ship or rail at the Port of Long Beach. From the Port of Long Beach, the large components of the generating units would be hauled directly to the HBEP site for immediate installation. In the event heavy equipment arrives but cannot be transported and transferred directly into its final position at the HBEP, it would be hauled to the Alamitos Generating Station site as a temporary storage location. Large or oversize equipment and materials (such as pipe, air cooled condenser and HRSG components) would be transported to Plains All American Tank Farm site (see PTA Figure 2.3-1) as would other construction material. When the components stored at the offsite laydown area are ready for installation at HBEP, they would be hauled to project site using the specific heavy haul route. (HBEP 2015a, pg. 2-15) The Alamitos Generating Station site in the city of Long Beach is only proposed for the stopover of oversized trucks en route from the Port of Long Beach to the HBEP site if they are unable to deliver directly to the HBEP site upon leaving the Port (HBEP 2016ff). Please see the second response to city comments above for a discussion of effects of the construction laydown and parking at the Plains site.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that the proposed amendment would have no new land use impacts and the mitigation for the original project would still be applicable and would not require any substantive changes beyond updating the project acreage in Condition of Certification **LAND-1**. Therefore, staff also concludes that the findings of fact and conclusions of law from the Decision would still apply to the amended HBEP.

Socioeconomics Figure 1 does not identify the presence of an environmental justice community. Therefore, the population in the six-mile buffer does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act* and would not trigger further scrutiny for purposes of an environmental justice analysis.

PROPOSED CONDITIONS OF CERTIFICATION

Existing Condition of Certification **LAND-1** would ensure the project remains in compliance with applicable laws, ordinances, regulations, and standards. Therefore, staff does not propose any modifications to **LAND-1**, with the exception of one minor update to include the additional 1.4 acres that the project owner has acquired from SCE, increasing the size of the HBEP site from 28.6 acres as licensed to 30 acres as amended. (**Note:** Deleted text is in ~~strike through~~, new text is **bold and underlined**)

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 areas, will be located on a single legal parcel.

Verification: 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~~ **30**-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.

REFERENCES

CCC 2014c – California Coastal Commission / Charles Lester (tn 202701). Letter Re: Coastal Commission 30413(d) Report for the Proposed AES Southland, LLC HBEP AFC, dated July 14, 2014. Submitted to CEC/Dockets on July 15, 2014.

CEC 2014d – Final Staff Assessment (TN 202405). Submitted to CEC/ Docket Unit June 2, 2014.

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

CHB 2012a – City of Huntington Beach / Dept of Planning & Building / Aaron Klemm / Jane James (tn 68804). City of Huntington Beach Comments on the Huntington Beach Energy Project, dated 12/06/2012. Submitted to CEC/ Dockets on 12/07/2012.

CHB 2016a – City of Huntington Beach Zoning and Subdivision Ordinance. Accessed February 18, 2016.
http://www.huntingtonbeachca.gov/government/Elected_Officials/city_clerk/Zoning_Code/

CHB 2016b – Huntington Beach Department of Planning and Building/Jane James (TN 212437). City of Huntington Beach Comments Regarding Preliminary Staff Assessment for the Huntington Beach Energy Project Petition to Amend Docket No.12-AFC-02C, dated July 22, 2016. Submitted to John Heiser/CEC/Docket Unit on July 25, 2016.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

HBEP 2016d – Project Owner's Response to City of Huntington Beach Comments on PTA (TN 210262). Submitted to CEC/Docket Unit on February 10, 2016.

HBEP 2016dd – City of Huntington Beach (TN 212380). City of Huntington Beach Resolution No 2016-27, dated May 2, 2016. Submitted to CEC/Docket Unit on July 21, 2016.

HBEP 2016l – Stoel Rives LLP/Melissa A. Foster (TN 210763). Letter to John Heiser Re: Huntington Beach Energy Project - Petition to Amend (12-AFC-02C) Conceptual Design Plan - Status Update, dated March 16, 2016. Submitted to John Heiser/CEC/Docket Unit on March 16, 2016.

HBEP 2016p – Stoel Rives LLP/Kristen T. Castanos (TN 211411). Letter to John Heiser Re: Petition to Amend (12-AFC-02C) Response to Wetlands Conservancy, dated May 9, 2016. Submitted to John Heiser/CEC/Docket Unit on May 9, 2016.

HBEP 2016cc – Stoel Rives LLP/Kristen T. Castanos (TN 212379).Petition to Amend - Project Owner's Comments on the Preliminary Staff Assessment, dated July 21, 2016. Submitted to John Heiser/CEC/Docket Unit on July 21, 2016.

HBEP 2016dd – City of Huntington Beach (TN 212380). City of Huntington Beach Resolution No 2016-27, dated May 2, 2016. Submitted to CEC/Docket Unit on July 21, 2016.

HBEP 2016ff – Stoel Rives LLP/Judith Warmuth (TN 212752).Petition to Amend - Project Owner's Response to City of Huntington Beach Comments on the Preliminary Staff Assessment, dated August 11, 2016. Submitted to CEC/Docket Unit on August 11, 2016.

HBEP 2016II – Stoel Rives LLP/Judith Warmuth (TN 213478).Petition to Amend - Project Owner's Additional Response to California Coastal Commission Comments, dated September 2, 2016. Submitted to CEC/Docket Unit on September 2, 2016.

Stoel Rives 2016 – Huntington Beach Energy Project – Petition to Amend (12-AFC-02C), Project Owner's Comments on the Preliminary Staff Assessment. Submitted to the Energy Commission on behalf of AES Huntington Beach Energy, LLC, July 21, 2016. Prepared by Stoel Rives, LLP, Sacramento, California.

NOISE AND VIBRATION

Testimony of Edward Brady and Shahab Khoshmashrab

SUMMARY OF CONCLUSIONS

Similar to the conclusions in the 2014 Energy Commission Final Decision (Decision) (CEC 2014bb), the potential impacts from the changes to the Huntington Beach Energy Project (HBEP) (HBEP 2015a) as proposed in the petition to amend (PTA) would be less than significant. Therefore, in accordance with the California Environmental Quality Act Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Noise and Vibration. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to Noise and Vibration and does not need to re-analyze them.

Conditions of Certification **NOISE-1** through **NOISE-8** contained in the Decision would be sufficient to reduce impacts from the amended project to a less than significant level and to ensure the project would remain in compliance with applicable laws, ordinances, regulations, and standards (LORS) relating to noise and vibration.

INTRODUCTION

Staff has reviewed the Decision (CEC 2014bb) and analyzed the modifications proposed for the HBEP, which include revising the approved pair of three-on-one combined-cycle electric power generating blocks to a single two-on-one combined-cycle power block and two simple-cycle combustion-turbine generators (CTGs). The following analysis evaluates the portions of the modified project that may affect the Noise and Vibration analysis, findings, conclusions, and conditions of certification contained in the Decision.

SUMMARY OF THE DECISION

The Decision found that the noise impacts associated with the project's construction and operation will be mitigated to the extent feasible, and therefore they will not significantly affect the surrounding communities or the project's construction workers. The Decision concluded that implementation of the staff's proposed Noise and Vibration conditions of certification will ensure that noise and vibration impacts will not cause any significant direct, indirect, or cumulative impacts and that the project will comply with the applicable LORS relating to noise and vibration.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project have changed since the Decision was published in 2014. Additionally, the proposed amendment would not trigger new LORS that may not have been applicable to the original project. The applicable Noise and Vibration LORS are listed in **Noise Table 1** below.

Noise Table 1
Laws, Ordinances, Regulations, and Standards

Applicable LORS	Description																		
Federal: Occupational Safety & Health Act (OSHA): 29 U.S.C. § 651 et seq. U.S. Environmental Protection Agency (USEPA)	Protects workers from the effects of occupational noise exposure. Assists state and local government entities in development of state and local LORS for noise.																		
State: California Occupational Safety & Health Act (Cal-OSHA): 29 U.S.C. § 651 et seq., California Code of Regulations, Title 8, §§ 5095-5099	Protects workers from the effects of occupational noise exposure.																		
Local: City of Huntington Beach Municipal Code, Noise Ordinance, Chapter 8.40, Noise Control	Prohibits construction between 8 p.m. and 7 a.m. on Mondays through Saturdays and all day Sundays and federal holidays Provides the following noise limits for exterior locations. <table border="1"><thead><tr><th colspan="3">Exterior Noise Standards</th></tr><tr><th>Noise Zone</th><th>Noise Level (dBA)</th><th>Time Period</th></tr></thead><tbody><tr><td>1 Residential</td><td>55 50</td><td>7 am – 10 pm 10 pm – 7 am</td></tr><tr><td>2 Office</td><td>55</td><td>Anytime</td></tr><tr><td>3 Commercial</td><td>60</td><td>Anytime</td></tr><tr><td>4 Industrial</td><td>70</td><td>Anytime</td></tr></tbody></table> Limit at M2 is the existing ambient level, or 62 dBA.	Exterior Noise Standards			Noise Zone	Noise Level (dBA)	Time Period	1 Residential	55 50	7 am – 10 pm 10 pm – 7 am	2 Office	55	Anytime	3 Commercial	60	Anytime	4 Industrial	70	Anytime
Exterior Noise Standards																			
Noise Zone	Noise Level (dBA)	Time Period																	
1 Residential	55 50	7 am – 10 pm 10 pm – 7 am																	
2 Office	55	Anytime																	
3 Commercial	60	Anytime																	
4 Industrial	70	Anytime																	
City of Huntington Beach General Plan, Noise Element	Establishes goals, objectives, and policies that address noise issues within the City’s jurisdiction																		

Discussions related to LORS compliance are embedded in **ANALYSIS** below.

ANALYSIS

The noise-sensitive receptors previously identified and analyzed in the Decision remain the project's most noise-sensitive receptors and there are no new noise-sensitive receptors in the project area since the issuance of the Decision.

CONSTRUCTION IMPACTS

The amendment describes the amended HBEP's construction and demolition schedule, which is slightly different than the licensed HBEP, but would continue for approximately the same period of time (8 years) (HBEP 2015a, §§ 5.7.1, 5.7.4). Also, construction and demolition equipment and activities and methods of construction would be similar to those expected for the licensed HBEP.

The licensed HBEP includes 1.9 acres of construction workers' parking on the former Plains All American Tank Farm site located adjacent to the HBEP site. The amended HBEP may require the use of an additional 20 acres on the Plains site, beyond the 1.9 acres identified in the Decision, for construction equipment laydown and construction workers' parking (HBEP 2015a, § 5.7.2). The Plains site is within a few hundred feet from the residential community east of the project site. This community is represented in the Decision by noise monitoring location M3 (CEC 2014bb, p. 6.4-5). The additional traffic on the adjacent street, Magnolia Street, caused by workers activity could potentially impact these residents. However, there is an existing masonry sound wall along Magnolia Street, separating it from this community. This sound wall would provide adequate acoustical protection from the noise due to the increased traffic.

The activities associated with equipment delivery and laydown occurring at this site may have a significant impact, but the existing Condition of Certification **NOISE-6** would mitigate the impact by limiting construction-related activities to the hours of 7 a.m. to 8 p.m., Monday through Saturday only, in compliance with the LORS (see **Noise Table 1**), and by requiring large trucks to avoid generating excessive and unnecessary noise. Besides, the above sound wall would partially shield the nearby community (represented by M3) from noise associated with equipment laydown. Also, Condition of Certification **NOISE-2** would establish a noise complaint process to resolve any complaints regarding project-related noise.

Thus, similar to the approved project, the noise impacts of the amended project's construction and demolition activities on the surrounding communities and on the project's construction workers would be less than significant and in compliance with the applicable noise-related LORS.

The Decision concluded that construction equipment and methods of construction would not cause perceptible vibration at any sensitive receptor. Therefore, by using similar construction equipment and methods, this conclusion remains valid for the amended project.

OPERATIONAL IMPACTS

The amended project includes revising the approved project's power blocks. The location of each of the power blocks would remain approximately the same within the project site, but the generating equipment would change. The approved HBEP includes two separate, three-on-one combined-cycle power blocks, consisting of a total of six Mitsubishi M501DA CTGs, six heat recovery steam generators (HRSGs), two steam turbine generators (STGs), and two air-cooled condensers (ACCs), totaling 939 megawatts (MW). The amended HBEP would substitute these power blocks with a single two-on-one combined-cycle power block using two General Electric (GE) 7FA CTGs, two HRSGs, one STG, and one ACC, and a second power block containing two GE LMS100 PB CTGs in a simple-cycle configuration, all totaling 844 MW (HBEP 2015a, §§ 1.0, 2.1). As seen here, the amended project's total MW output would be slightly less than the approved project and the amended project would use fewer pieces of equipment; this would likely result in slightly lower operational noise levels.

In addition, and unlike the licensed project, the amended project would include a tall sound wall along the eastern and southeastern boundaries of the combined-cycle power block (HBEP 2015a, § 5.13.3.2). This would help to reduce offsite noise levels due to the power block's ACC fans, turbines, and other equipment.

Therefore, staff believes that the amended project would be able to comply with the operational noise levels required in Condition of Certification **NOISE-4** of the Decision (61 dBA at receptor M2, 45 dBA at M3, and 49 dBA at M4) and with the limits set forth in the LORS (**Noise Table 1**, city of Huntington Beach limits). Furthermore, **NOISE-4** prohibits creation of perceptible tonal noise; that is, noise that may not be louder than permissible levels, but stands out in sound quality (for example, from out of tune or old equipment).

Similar to the approved project, the operational noise levels that may be perceived by the power plant workers would create a less-than-significant impact with implementation of Condition of Certification **NOISE-5** (occupational noise survey and mitigation) contained in the Decision.

Based on experience with several previous projects employing similar power block equipment as those proposed for the amended HBEP, and similar to the licensed HBEP, staff believes that vibration due to the operation of the amended HBEP would be undetectable by any likely receptor.

Staff concludes that project operation would create a less-than-significant noise impact and would remain in compliance with applicable LORS relating to noise and vibration.

CUMULATIVE IMPACTS

A cumulative impact is created as a result of the combination of the project under consideration together with other existing or reasonably foreseeable projects causing related impacts. The staff's updated cumulative project list shows that the only project to potentially create a cumulative noise impact when combined with the amended HBEP remains as the one identified and analyzed in the Decision. This is the Poseidon Seawater Desalination Plant (Poseidon), a water treatment plant to be located adjacent to the HBEP.

The Decision concludes that the cumulative noise impact of the adjacent Poseidon project and the licensed HBEP will be less than significant. Since the amended HBEP would be similar to the licensed HBEP in construction and operational noise levels, the cumulative noise impact of the adjacent Poseidon project and the amended HBEP would be less than significant as well. Therefore, the amended project would not result in any significant cumulative noise impacts.

No further analysis is needed due to the following reasons:

- The changes in the amendment would not create new significant environmental impacts or substantial increases in the severity of previously identified significant impacts.

- The amendment does not propose substantial changes which would require major revisions of the Noise and Vibration analysis contained in the Decision.
- The circumstances under which the amended project would be undertaken would not require major revisions of the Noise and Vibration analysis contained in the Decision.

RESPONSES TO PSA COMMENTS

The following are the comments staff received on the PSA in the area of Noise and Vibration and the staff's responses to those comments.

MIKE M. TRELLES (PB 2016A)

Comment: *Mr. Mike M. Trelles, a resident in the nearby mobile home park on Newland Avenue, represented by noise monitoring location M2, commented that the constant noise over the next ten years of heavy construction will make living next to the power plant from uncomfortable to unbearable.*

Response: The project's construction noise impact at the mobile home has been thoroughly analyzed and sufficiently mitigated in the Decision for the licensed HBEP. The mitigation measures contained in the Decision apply to the amended HBEP as well and include Conditions of Certification **NOISE-6**, construction noise restrictions, **NOISE-7**, steam blow noise management, **NOISE-8**, pile driving noise management, and **NOISE-2** which establishes a noise complaint process to address any undesirable project noise conditions.

The procedures and mitigation measures described in these conditions of certification have been sufficiently effective in reducing or eliminating construction noise impacts for past power plant projects in similar urban and suburban settings as the HBEP project area and staff believes they would be equally effective for this project.

CITY OF HUNTINGTON BEACH (CHB 2016B)

Comment: *The PSA should describe and analyze that the new facility is larger and closer to residences on the east and northeast sides of the site as well as any potential noise impacts from construction laydown on the Plains site once those activities are more fully described. The Noise section should also include a description of the new proposed 50 ft. wall, why it is proposed, how it affects noise impacts from the proposed facility, and when construction of the wall is required to be completed.*

Response: The acoustical wall would be built prior to the commencement of project operation as a part of the operational noise control, not construction noise control.

Where the combined cycle power block, occupying the eastern portion of the site, would be in the same approximate location as in the licensed HBEP, due to possible increase in intensity of construction, periodic construction noise levels may be higher than those expected for the licensed project. However, noise control measures such as portable and temporary sound walls or barriers, engine mufflers, and other noise-control measures implemented by the project construction contractor would be used and

equipment staging areas would be relocated if needed to minimize the noise in accordance with Condition of Certification **NOISE-6**. The requirements contained in **NOISE-6** for noise control apply to all project-related work including the activities that would occur at the Plains site.

Comment: *Page 4.6-4 concludes that fewer pieces of equipment would likely result in lower operational noise levels. Without any analysis of the type and location of equipment now proposed it is unclear why fewer pieces of equipment lead to lower noise impacts.*

Response: As described under Operational Impacts above, the amended HBEP would employ fewer pieces of equipment of similar sound character and intensity which can result in lower noise levels. Nonetheless, the requirements contained in Condition of Certification **NOISE-4** of the Decision remain unchanged and result in the amended project producing no more noise than the licensed project. Similar to the other power plant projects under the Energy Commission's jurisdiction, the equipment vendor would provide an acoustically-designed equipment package which would meet the HBEP's noise level limits required in **NOISE-4**. **NOISE-4** also requires performance verification by conducting an operational noise survey to ensure project compliance with those limits.

Comment: ***NOISE-6** describes limitations on hours for heavy equipment and noisy construction work. However, as previously expressed, the City has a concern that construction workers and deliveries may impact adjacent residential areas. These activities should be limited so that workers and deliveries do not arrive on site and do not park, idle, or line up on surrounding streets prior to 7:00 AM.*

Response: The PSA (p. 4.6-11) and FSA (p. 4.6-11) for the licensed project discussed this under "Traffic Noise during Construction" and the mitigation measures for residences adjacent to project site are included in the Decision (CEC 2014bb, p. 6.4-9). These documents concluded that this issue is satisfactorily addressed in Condition of Certification **TRANS-3** in the **Traffic and Transportation** section of these documents, which requires a traffic control plan that requires the use of on-site or designated offsite parking areas, which would prevent vehicle parking, idling, and lining up on surrounding streets.

The only addition to parking areas near the project site may be the use of an additional 20 acres on the Plains site, beyond the 1.9 acres identified in the Decision, for construction equipment laydown and construction workers' parking. The additional traffic on the adjacent street, Magnolia Street, caused by workers activity could potentially impact these residents. However, as explained in this FSA, there is an existing masonry sound wall along Magnolia Street, separating it from this community. This sound wall would provide adequate acoustical protection from the noise due to the increased traffic.

Finally, Conditions of Certification **NOISE-1** and **NOISE-2** establish a public notification and complaint process to address any public concerns about project-related noise.

CONCLUSIONS AND RECOMMENDATIONS

The existing Conditions of Certification **NOISE-1** through **NOISE-8** would be sufficient to reduce noise and vibration impacts from the proposed amendment to a less than significant level directly, indirectly, and cumulatively and to ensure the project would remain in compliance with applicable LORS relating to noise and vibration.

PROPOSED CONDITIONS OF CERTIFICATION

Staff has deleted redundant footnotes (redundant definitions) and has clarified two of the remaining footnotes in the Noise and Vibration conditions of certification presented below. Deleted text is in ~~striketrough~~ and new text is **bold and underlined**. Staff does not propose any other modifications to these conditions of certification.

NOISE-1 PUBLIC NOTIFICATION PROCESS

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-2 NOISE COMPLAINT PROCESS

Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all legitimate project-related noise complaints¹. 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;

¹ 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.

- Attempt to contact the person(s) making the noise complaint within 24 hours;
- 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 complaint², 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.

NOISE-3 EMPLOYEE NOISE CONTROL PROGRAM

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-4 NOISE RESTRICTIONS

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 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 L₉₀ measured at or near monitoring location M3 and an average of 49 dBA L₉₀ measured at or near monitoring location M4.

² For the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**.

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 complaints³.

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 L₅₀ and L₉₀ 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 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.

³ For the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 OCCUPATIONAL NOISE SURVEY

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.

NOISE-6 CONSTRUCTION RESTRICTIONS

Heavy equipment operation and noisy⁴³ 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 as set forth below.

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.

⁴³ ~~Noise~~—**Noisy** means noise that draws legitimate complaint (for the definition of "legitimate complaint", see the footnote in Condition of Certification **NOISE-2**)

In consultation with the CPM, construction equipment generating excessive noise⁵⁴ 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 10 days prior to any heavy equipment operation or noisy⁶ construction activities that would occur outside of the above hours, the project owner shall submit a request to the CPM for review and approval and simultaneously send a copy to the City of Huntington Beach for review and comment. The project owner shall provide a copy of the transmittal letter to the City of Huntington Beach soliciting review and comment to the CPM.

The request submitted to the CPM shall specify the activities that need to occur outside of the restricted days and times set forth above; the need for such activities; the days, dates, and times during which these activities will occur; the approximate distance of activities to residential and sensitive receptors; the expected sound levels at these receptors; and a statement 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 and property owners within one-half mile of the project site of the request. In this notification, the project owner shall state that it will perform this activity in a manner to ensure excessive noise is prohibited as much as practicable.

The project owner shall not perform any heavy equipment operation or noisy⁷ construction activities outside of the timeframes set forth above until the CPM has granted the request for exemption. If the exemption is granted, the project owner shall notify the residents and property owners within one-half mile of the project site of the approval of the request. The project owner shall provide copies to the CPM of all transmittal letters to property owners and residents.

NOISE-7 STEAM BLOW RESTRICTIONS

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.

⁵⁴ Noise-~~“Excessive noise” means noise~~ that draws a legitimate complaint (for the definition of “legitimate complaint”, see the footnote in Condition of Certification **NOISE-2**)

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 legitimate complaint (for the definition of “legitimate complaint”, see the footnote in Condition of Certification **NOISE-2**)

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.

NOISE-8 PILE DRIVING MANAGEMENT

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.

REFERENCES

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

CHB 2016b – Huntington Beach Department of Planning and Building/Jane James (TN 212437). City of Huntington Beach Comments Regarding Preliminary Staff Assessment for the Huntington Beach Energy Project Petition to Amend Docket No. 12-AFC-02C, dated July 22, 2016. Submitted to John Heiser/CEC/Docket Unit on July 25, 2016.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

PB 2016a – Public/Mike M. Trelles (TN 212145). Health and Nuisance Cost, dated June 7, 2016. Submitted to CEC/Docket Unit on July 5, 2016.

NOISE COMPLAINT RESOLUTION FORM

Huntington Beach Energy Project (12-AFC-02C)	
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).

NOISE AND VIBRATION - FIGURE 1
Huntington Beach Energy Project - Sound Monitoring Locations



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Additional Responses, Figure 5-7.1R, 1/17/2013, CH2MHILL

SOCIOECONOMICS

Testimony of Lisa Worrall

SUMMARY OF CONCLUSIONS

Energy Commission staff concludes that the proposed amendment to the licensed Huntington Beach Energy Project (HBEP) would not cause significant direct, indirect, or cumulative adverse socioeconomic impacts on the project area's housing, schools, law enforcement services, and parks. Staff also concludes that the amended HBEP would not induce a substantial population growth or displacement of population, or induce substantial increases in demand for housing, parks, or law enforcement services. Conditions of Certification **SOCIO-1** and **SOCIO-2** from the 2014 Final Commission Decision (Decision) would ensure project compliance with state and local laws, ordinances, regulations, and standards (LORS).

Staff also concludes that the findings of fact and the conclusions of law from the Decision would still apply to the amended HBEP. Therefore, in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15162, staff concludes that no supplementation to the Decision is necessary for Socioeconomics. The Committee may rely upon the environmental analysis and conclusions of the Decision for Socioeconomics and does not need to re-analyze them.

INTRODUCTION

Staff reviewed the Decision and the changes to the licensed HBEP relevant to Socioeconomics. The HBEP amendment would increase the construction workforce from a peak of 236 to a peak of 306 workers (HBEP 2015i, pg. 33 and Appendix 5.10A-R1). The average number of construction workers would be reduced from 192 workers to 127 workers (CEC 2014d, pg.4.8-9). The operations workforce would be reduced from 33 to 23 members. The HBEP amendment would take 67 months overall to complete, compared with 56 months estimated for the licensed HBEP.

MINORITY AND BELOW-POVERTY-LEVEL POPULATIONS

The 2010 U.S. Census data staff used to identify minority-based environmental justice populations for **Socioeconomics Figure 1** used in the 2014 Commission Decision is still current. As identified in the Commission Decision, there is no minority environmental justice population present in the project's six-mile radius. To determine whether a poverty-based environmental justice population is present, staff used the most currently available poverty data from the U.S. Census American Community Survey (ACS), presented in **Socioeconomics Table 1**, below.

Based on 2010-2014 ACS census data, 10.02 percent of people within the six-mile radius of the HBEP are living below the poverty level. Since this is less than the 12.80 percent of people living below the poverty level in Orange County, the population within a six-mile radius of HBEP does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act*.

**Socioeconomics Table 1
Poverty Data within the Project Area**

Area	Total			Income in the past 12 months below poverty level			Percent below poverty level		
	Estimate ¹	MOE ²	CV ³ (%)	Estimate	MOE	CV (%)	Estimate	MOE	CV (%)
Cities Used to Determine Poverty Status- Total	447,742	439	0.06	44,862	±2,530	3.43	10.02	±0.57	3.46
Costa Mesa	110,636	±182	0.10	16,719	±1,481	5.38	15.10	±1.3	5.23
Fountain Valley	56,185	±179	0.19	4,017	±724	10.96	7.10	±1.3	11.13
Huntington Beach	194,680	±305	0.10	17,895	±1,672	5.68	9.20	±0.9	5.95
Newport Beach	86,241	±186	0.13	6,231	±941	9.18	7.20	±1.1	9.29
Reference Geography									
Orange County	3,049,290	±2,022	0.04	391,705	±7,700	1.19	12.80	±0.3	1.24

Note: ¹ Population for whom poverty status is determined. ² MOE Margin of Error - a range of how well the sample represents the actual population. ³ CV Coefficient of Variation - a measure of the reliability of data. **Sources:** US Census 2015 and UW-Extension 2011.

SUMMARY OF THE DECISION

Based on the evidence presented in the original proceeding, the Energy Commission made the following 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.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project have changed since the Decision was published in November 2014. Additionally, the proposed amendment would not trigger new LORS that may not have been applicable to the original project.

ENVIRONMENTAL IMPACT ANALYSIS

In accordance with the CEQA Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Socioeconomics. The Committee may rely upon the environmental analysis and conclusions of the Decision concerning Socioeconomics and does not need to re-analyze them due to the following:

- The changes in the petition to amend (PTA) would not create new significant workforce-related impacts on housing and community services or substantial increases in the severity of previously identified significant effects.
- The PTA does not propose substantial changes that would require major revisions of the Socioeconomics analysis in the Decision.
- The circumstances under which the HBEP amendment would be undertaken would not require major revisions of the Socioeconomics analysis in the Decision.

Staff's conclusion is supported by the following key factual information:

- The change in construction workforce numbers and duration are minimal and workforce-related impacts would remain less than significant.
- The operations staff is reduced.
- The large labor pool in Orange, Los Angeles, Riverside, and San Bernardino counties is more than sufficient to accommodate the labor needs of the HBEP amendment.

CUMULATIVE IMPACTS AND MITIGATION

A project may result in significant adverse cumulative impacts 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 past projects, the effects of other current projects, and the effects of probable future projects [Cal. Code Regs., tit.14, § 15065 (a)(3)].

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.

Staff has updated the Master Cumulative Project List since the licensing of the HBEP. Because of the large labor supply in Orange County and the mobility of the labor supply, staff included projects in Orange County and the cities within the county that would likely employ a similar workforce to the HBEP amendment.

Staff reviewed this updated list for projects that would likely have overlapping construction schedules with the HBEP amendment. The projects listed below in **Socioeconomics Table 2** represent the updated cumulative setting for socioeconomic resources.

Socioeconomics Table 2
HBEP Amendment Socioeconomics Cumulative Project List

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
1	Huntington Beach Generating Station Demolition (Demolition of Units 3 & 4)	Demo/removal of Units 3 & 4 from the existing Huntington Beach Generating Station.	Huntington Beach Generating Station, Huntington Beach	0.05	Demo estimated Q2 2020 to Q2 2022 (24 mo.)
2	Poseidon Desalination Plant	A 50-million-gallon-per-day, seawater desalination facility located on 11-acre portion of the existing Huntington Beach Generating Station (HBGS) facility. Project would use existing HBGS seawater intake and outfall pipelines for operations.	21730 Newland St, Huntington Beach	0.22	Planning and under review with the California Coastal Commission
3	Magnolia Oil Storage Tank and Transfer Facility Demolition and Removal	Demolition and removal of three empty above ground crude oil storage tanks and ancillary site improvements.	21845 Magnolia St, Huntington Beach	0.35	In Progress
4	Newland St Residential (Pacific Shores)	Develop and subdivide former industrial site to residential with 204 multi-family residential units and two-acre public park.	21471 Newland St, Huntington Beach	0.40	Completed
5	Remedial Action Plan for Ascon Landfill Site	Remedial Action Plan includes partial removal of waste materials and construction of protective cap over remaining waste materials.	Magnolia St and Hamilton Ave, Huntington Beach	0.43	Plan Check
6	Hilton Waterfront Beach Resort Expansion	Nine-story tower with 156 new guestrooms, appurtenant facilities, 261 parking spaces, a loading dock and other back-of-house facilities.	21100 Pacific Coast Hwy, Huntington Beach	1.02	Plan Check
8	P2-92 Sludge Dewatering and Odor Control	Build new sludge and odor control facilities at existing Plant 2.	Santa Ana River Channel, Huntington Beach	1.17	Construction scheduled Spring 2016
9	Pacific City	516 condominiums; 8 story-250 room hotel, spa and health club; and 191,100 sq. ft. visitor-serving commercial with retail, office, restaurant, cultural, and entertainment	21002 Pacific Coast Hwy, Huntington Beach	1.26	Under Construction
10	Pierside Pavilion Expansion	Proposes to construct a connecting four-story, mixed-use, visitor-serving/office building and storefront extension.	300 Pacific Coast Hwy, Huntington Beach	1.51	Plan Check

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
12	Beach Walk	173 multi-family apartment units within a 4-story building, a 5-level parking structure, public and private open space areas.	19891 & 19895 Beach Blvd, Huntington Beach	2.10	Completed
13	LeBard Park and Residential Project	9.7-acre surplus school site for public recreation and single-family residential uses.	20461 Cramer Ln, Huntington Beach	2.16	Approved
14	Truewind- Former Wardlow School Site	49 detached single-family residential units on an 8.35-acre site.	9191 Pioneer Dr, Huntington Beach	2.16	Under Construction
15	Brookhurst Street and Adams Avenue IIP	Widening of the Brookhurst St/Adams Ave intersection in all directions.	Brookhurst St and Adams Ave, Huntington Beach	2.38	Draft Environmental Impact Report (DEIR)
16	Lighthouse Project	89-unit (49 residential units, 40 live/work units), three-story mixed-use development. 332 space parking garage, 2 acres of common open space.	1620-1644 Whittier Ave, Costa Mesa	2.42	Initial Study (IS)/Mitigated Negative Declaration (MND)
17	Ebb Tide Residential Project	Demolition of 73 mobile home spaces, three fixed structures and related surface improvements and the development of 81 single-family detached condominium units.	Placentia Ave and 16th St, Newport Beach	2.96	MND
18	Fairwind- Former Lamb School Site	80 detached single-family residential units on a 11.65-acre site	10251 Yorktown Ave, Huntington Beach	2.96	Unknown
19	Westside Gateway Project	Seeking approval to redevelop a 9-acre project site with a mix of 177 dwelling units (residential lofts and live/work). Redevelopment includes demolition of all existing buildings and parking areas.	671 W. 17th St, Costa mesa	3.20	Unknown
20	Beach and Ellis - Elan Mixed Use	274 units (26 studio, 123 one-bedroom, 6 live-work, 119 two-bedroom units of which 27 are affordable units) also includes: 8,500 sq. ft. commercial, 17,540 sq. ft. public open space and 31,006 sq. ft. residential private open space.	18502, 18508-18552 Beach Blvd, Huntington Beach	3.37	Unknown
21	Newport Beach City Hall Reuse Project- Now called the "Lido House Hotel"	Four story, 130-room hotel set on a 4.25-acre site that formerly housed the Newport Beach City Hall.	3300 Newport Blvd, Newport Beach	3.45	IS/ND
22	2277 Harbor Boulevard Project	Proposal involves demolishing existing 236-room motel and the construction of a four-story, 224-unit luxury apartment project.	2277 Harbor Boulevard, Costa Mesa	3.50	IS/MND

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
24	Oceana Apartments	Four story apartment building with 78 affordable housing units for income levels at 30 to 60 percent of Orange County median income on 2-acre site.	18151 Beach Blvd, Huntington Beach	3.75	Under Construction
26	Huntington Beach Senior Center	One-story senior center on an undeveloped portion of Central Park. Approximately 227 parking spaces will be provided for visitors and city vehicles.	Central Park (5-acre area; SW of the intersection of Goldenwest St and Talbert Ave)	4.14	Under Construction
29	Well #6 Colored Water Treatment Plant	Construct WTP within the next two years.	Harbor Blvd at Gisler Ave, Costa Mesa	4.48	Unknown
30	Fountain Valley Civic Center Specific Plan	Build Ayres Hotel, 88 residential units (27 single-family, 61 townhomes), and 2,300 sq. ft. of retail space on 8.62-acres.	Brookhurst St and Slater Ave, Fountain Valley	4.64	Unknown
32	Back Bay Landing Project	New reservoir foundation, install underground pipelines	East Coast Hwy at Bayside Dr, Newport Beach	4.76	Under review with California Coastal Commission
35	Beach Blvd and Warner Ave Intersection Improvement Project	Construct westbound right turn lane on Warner Ave at intersection and associated improvements including new 5 ft. wide, 15 ft. long sidewalk along west side of A Lane.	Intersection of Beach Blvd and Warner Ave, on the north side of Warner Ave from Beach Blvd to the alley between A Lane and B Lane, including portions of the adjacent commercial properties to the north at 16990 Beach Blvd, 8021 Warner Ave, and 8071 Warner Ave.	4.92	Adopted

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
39	Parkside Estates	111 single-family residences; 23-acres preserved, restored and enhanced open space; 1.6-acre neighborhood park; public trails; and water quality treatment system.	W side Graham St, S of Warner Ave, along E Garden Grove Wintersburg Flood Channel 17221 (S of Greenleaf Ln), Huntington Beach	5.67	Planning
41	Brightwater	347 single-family units and over 37-acres habitat restoration and trails.	Warner Ave and Los Patos Ave, Huntington Beach	5.77	Under Construction
44	Monogram Apartments (Formerly Pedigo)	Four-story apartment building with 510 dwelling units and six-level, 862-space parking structure.	7262,7266,7280 Edinger Ave and 16001, 17091 Gothard St, Huntington Beach	5.96	Plan Check
45	The Boardwalk (Murdy Commons)	487 dwelling units and 14,500 sq. ft. of commercial area on a 12.5-acre site with 1/2 acre public park.	7441 Edinger Ave-Northeast corner of Edinger Ave and Gothard St (Former Levitz Furniture store site)	5.97	Under Construction. First two phases have opened for occupancy.
47	Airport Circle Residential Project	45-unit condominium subdivision with open space on 2.5-acre site. Site layout: 8 detached three-story buildings with 4 to 8 attached dwelling units.	16911 Airport Cir. Huntington Beach	6.04	Plan Check
48	The Village at Bella Terra	Costco Wholesale, with gasoline service station and mixed-use retail and residential project.467 multi-family residential units within four-story building.	7777 Edinger Ave, Huntington Beach	6.06	Completed
49	San Diego Freeway I-405 Improvement Project	One general-purpose lane in each direction on I-405 from Euclid St to the I-605 interchange, add tolled express lane in each direction of I-405 from SR-73 to SR-22 East.	I-405 between SR-73 & I-605, Costa Mesa, Seal Beach	6.06	Unknown
50	Huntington Beach Lofts	Five-story, 385-luxury residential units located above 10,000 sq. ft. of street level retail and commercial uses.	7302-7400 Center Ave, Huntington Beach	6.16	Under Construction
52	Wyndham Boutique Hotel/High-Rise Residential Project	Demolition of Wyndham Hotel parking garage and construction of a 100-unit condominium tower adjacent to a new 6.5-level parking garage with 1 subterranean level and 5.5 levels above ground.	3350 Ave of the Arts, Costa Mesa	6.53	Approved
54	OC-44 Pipeline Rehabilitation Project	Sip-line existing 42-inch pipeline with new 30-inch Ductile Iron Pipe. To accommodate these improvements, a pipe jacking operation would be conducted, requiring three access pits.	University Dr and La Vida, Newport Beach	6.61	Approved-Construction 2018-2020

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
55	Civic Center and Park Project	Construction of park, city hall building, and 450 parking spaces.	Avocado Ave and McArthur Blvd, Newport Beach	6.62	Unknown
56	Uptown Newport Village Specific Plan Project	Mixed-use project with 1,244 residential units, 11,500 sq. ft. retail, and a 2-acre park.	Jamboree Rd and Fairchild Rd, Newport Beach	6.92	Approved
58	Rofael Marina and Caretaker Facility	Construct marina on 6,179 sq. ft. property.	16926 Park Ave, Huntington Beach	7.12	In Progress. Requires Coastal Development Permit and a Conditional Use Permit.
59	Campus and Jamboree	1,600 residential units (5 to 6-story apartments), 17,000 sq. ft. plus primary retail in Irvine Technology Center, and up to 23,000 sq. ft. accessory retail and/or residential-serving amenities, 1-acre public park, and two 0.5-acre public plazas.	NW corner of Campus and Jamboree, Irvine	7.37	Phase 1 Under Construction (9/26/2015)
60	Mater Dei High School Parking Structure	Three-level parking structure	1202 W Edinger Ave, Santa Ana	7.80	Proposed, 3-5 years 2018 at earliest
62	Warner Avenue Widening	Widening to six lanes.	Warner Ave, Santa Ana	8.48	Approved. Construction in four phases. Phase 1 Jan. 2016 to Jan 2017.
63	2801 Kelvin	384-unit apartments.	2801 Kelvin Ave, Irvine	8.70	Under Construction. 18-month construction period
65	Vista Verde	Build 55-unit project, which is proposing to add 3 additional units to the project	5144 Michelson Dr, Irvine	10.00	Unknown
67	I-5 Central County Improvement Project	Add second carpool lane in each direction on I-5 between the SR-55 and the SR-57.	I-5 between SR-55 and SR-57, cities of Santa Ana, Tustin and Orange.	10.39	Approved. Construction Jan. 2016 to Jan 2017.
68	I-5, SR-73 to El Toro Road	Widen 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. 2018 to 2022	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.	10.67	Proposed

Label ID#	Project Title	Description	Location	Distance to Project (Miles)	Status
69	Alamitos Energy Center	Two natural gas turbine power blocks. Power Block 1:natural-gas-fired combustion turbine generators in combined-cycle configuration, two unfired heat recovery steam generators, one steam turbine generator, air-cooled condenser, auxiliary boiler, related ancillary equipment. Power Block 2: four simple-cycle combustion turbine generators with fin-fan coolers and ancillary facilities. 21-acre site within larger 71.1-acre Alamitos Generation Station site.	690 N Studebaker Rd, Long Beach	10.74	Proposed
72	Irvine Center Drive and Alton, NWC.	766-unit apartments.	Northwest corner of Irvine Center Dr and Alton Pkwy, Irvine	12.84	Under Construction. Estimated 24-month construction
74	Pacifica and Spectrum NWC	573-unit apartments	SW corner of Alton Pkwy and Spectrum, Irvine	13.19	Under Construction. 24-month construction
81	I-5 between Avenida Pico to San Juan Creek Road	Add carpool lane both directions on I-5 between Avenida Pico to San Juan Creek Road. 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 sound walls where needed.	I-5 between Avenida Pico and San Juan Creek Rd, San Clemente, San Juan Capistrano and Dana Point.	21.14	Under Construction 2013 to 2017.

The large labor pool in Orange, Los Angeles, Riverside, and San Bernardino counties is more than sufficient to accommodate the labor needs of the HBEP amendment and the cumulative projects in **Socioeconomics Table 2**. Therefore, the HBEP amendment in combination with the other projects in the cumulative study area would not have significant cumulative impacts from population influx (construction and operations workers) on housing supply, law enforcement, and parks and recreation.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Staff received no comments from the public, interveners, agencies, or the applicant in the area of Socioeconomics.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that proposed amendment would have no new socioeconomic impacts and the mitigation for the original project would still be applicable and would not require any changes. The following findings of fact from the Decision would still apply to the HBEP amendment:

1. The amended HBEP would not directly displace existing housing or people.
2. The amended project's construction and operation workforces would not directly or indirectly induce a substantial population growth in the project area.
3. The amended 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 amended HBEP 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 amended HBEP 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 amended HBEP 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 amended HBEP 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 site is sufficient for the amended 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.

PROPOSED CONDITIONS OF CERTIFICATION

Existing Conditions of Certification **SOCIO-1** and **SOCIO-2** would be sufficient to ensure the project remains in compliance with applicable state and local LORS. Therefore, staff does not propose any modifications to the existing conditions of certification.

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 CPM proof of payment to the city of Huntington Beach of the required Development Impact Fee(s).

REFERENCES

CEC 2014d – Final Staff Assessment (TN 202405). Submitted to CEC/ Docket Unit June 2, 2014.

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

HBEP 2015h – Data Responses, Set 1 (Responses to Data Request 1-74) (TN 206858). Submitted to CEC/Docket Unit on December 7, 2015.

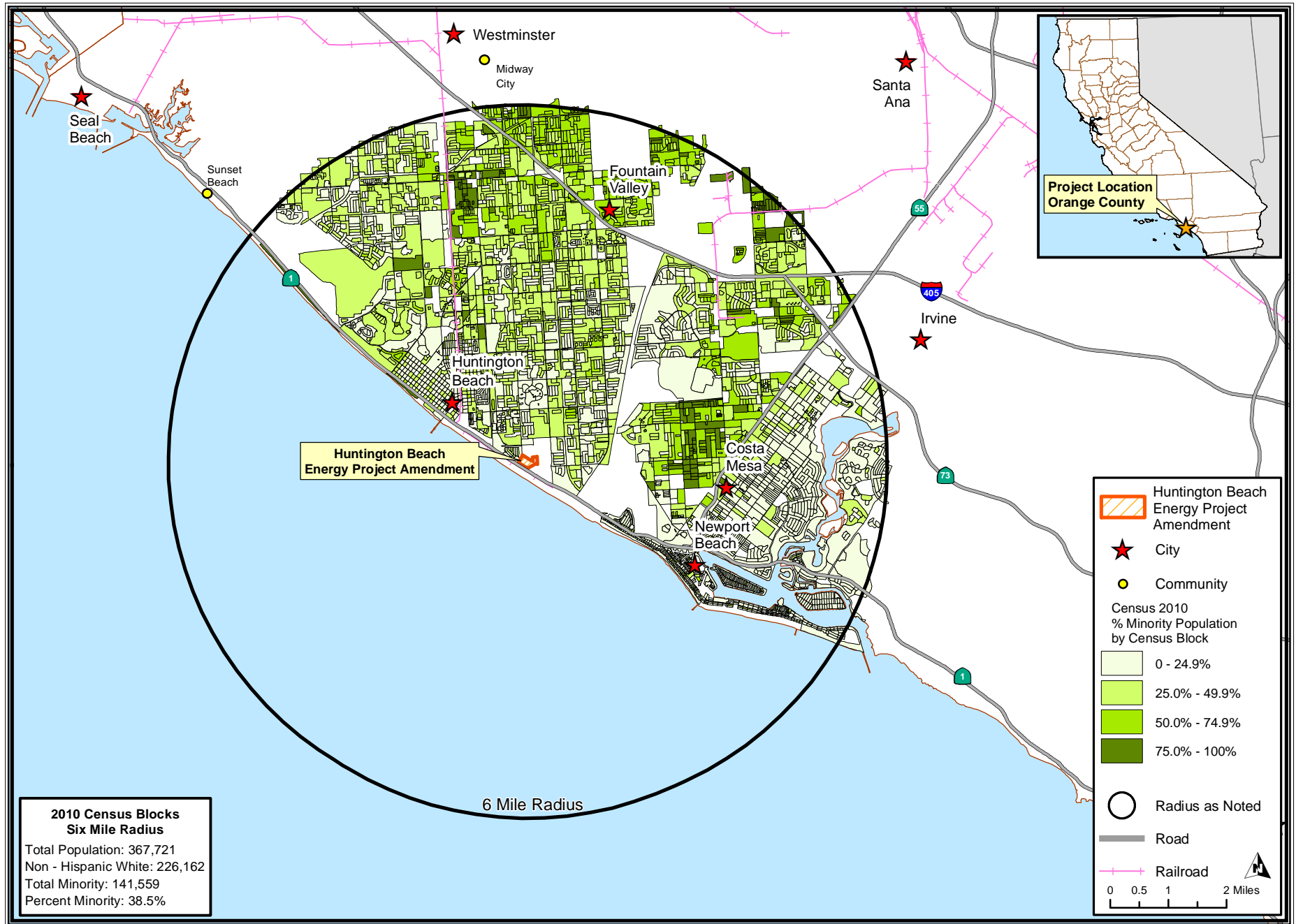
UW-Extension 2011 – University of Wisconsin-Extension American Community Survey Statistical Calculator, March 22, 2011, <http://fyi.uwex.edu/community-data-tools/2011/03/22/american-community-survey-ac-s-statistical-calculator/> .

US Census 2010 – United States Census Bureau, *P2: HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE - Universe: Total population, 2010 Census Redistricting Data (Public Law 94-171) Summary File*, <<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>>.

US Census 2015 – United States Census Bureau, *S1701 POVERTY STATUS IN THE PAST 12 MONTHS 2010-2014 American Community Survey 5-Year Estimates*, <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

SOCIOECONOMICS - FIGURE 1

Huntington Beach Energy Project Amendment - Census 2010 Minority Population by Census Block - Six Mile Radius



CALIFORNIA ENERGY COMMISSION, SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Multinet, Census 2010 - PL94-171, Open Street Map City Data March 2013.

SOIL AND WATER RESOURCES

Testimony of Mike Conway

SUMMARY OF CONCLUSIONS

The changes sought in the Petition to Amend (PTA) the Huntington Beach Energy Project (HBEP) would not result in any substantial modifications to the existing Soil & Water Resources conditions of certification. There are no new significant environmental effects or any substantial increase in the severity of previously identified significant adverse effects that would require major revisions of the 2014 HBEP Commission Decision (Decision). Nor is there new information of substantial importance that could not have been known in the Decision regarding more severe impacts. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Soil & Water Resources. The Committee may rely on the conclusions of the Decision in analyzing the changes to the project's design, operation, and performance pursuant to Title 20, section 1769. This section augments the existing record to reflect current environmental conditions and policy considerations.

Staff and petitioner suggest a minor revision to the conditions of certification. **Soil & Water Table 1** summarizes the proposed change.

Soil & Water Table 1
Summary of Proposed Modifications to Conditions of Certification

Condition of Certification	Proposed Modification(s) to Condition
SOIL&WATER-6	WATER USE AND REPORTING: Propose to reduce annual water use limit from 134 AFY to 120 AFY.

INTRODUCTION

In this section, Energy Commission staff discusses potential impacts of the proposed HBEP amendment on Soil & Water Resources. The HBEP was originally licensed as the 939-megawatt (MW) project in November 2014.

The proposed amendment seeks to modify each of the two power block turbine configurations. The amended project would consist of a two-on-one combined-cycle gas turbine for power Block 1, with a 644-MW capacity, and two simple-cycle gas turbines for power Block 2, with 200-MW capacity. The amended HBEP would have a reduced total capacity (844 MW) relative to the licensed project (939 MW). The amended project would require a 1.4-acre increase in total project size, bringing the project up to 30-acres. An increase in temporary project laydown and parking would also be required. Total temporary construction area would be 22-acres.

SUMMARY OF THE DECISION

In this section staff summarizes the 2014 Commission Decision for the HBEP. The 2014 Decision discusses HBEP protection from the theoretical 100-year flood. The Decision acknowledges flooding impacts that could originate inland or from the sea. Also included in the discussion was the influence of tides, waves, and sea-level rise. The Decision concluded that the site is adequately protected from the threats of flooding mentioned. No mitigation was specified for hazards from flooding or sea-level rise.

The 2014 Decision considered alternative water supplies for the project. The Commission found that the use of treated wastewater is both environmentally undesirable and economically unsound. The project's proposed use of potable water was considered a substantial reduction in the facility's baseline use and therefore a net benefit.

The 2014 Decision stated that one of the main HBEP benefits was that it would allow the cessation of once-through-cooling at the site. This would greatly reduce the impacts of impingement and entrainment of aquatic organisms that would no longer be imperiled because seawater would no longer be circulated through the facility for cooling. When considered cumulatively with other proposed projects, the HBEP would result in a net cumulative benefit in waste discharges to the Pacific Ocean.

The 2014 Decision found that a Water Supply Assessment (WSA) should be prepared for HBEP. The conclusion was that the project had an adequate and reliable water supply. It was also concluded that HBEP would use significantly less water than the existing Huntington Beach Generation Station while generating more energy. HBEP was said to create a net beneficial impact on local water supplies.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

The table below summarizes the LORS that are applicable to HBEP.

Soil & Water Table 2
Summary of Laws, Ordinances, Regulations and Standards (LORS)

Applicable LORS	Description
Federal	
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	
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.

Applicable LORS	Description
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 would 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 provides 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 would 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.

Applicable LORS	Description
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 minimus</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	
City of Huntington Beach – Code Chapter 14.36 - Sewer System Service Connections, Fees, Charges, and Deposits	Defines local fees for 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.

ENVIRONMENTAL IMPACT ANALYSIS

Since the conditions and associated hazards at the proposed site are expected to be similar to those previously analyzed, potential impacts to soil and water resources are essentially the same as documented in the 2014 Commission Decision. Where necessary, staff provides updated information to help the Committee understand the environmental setting.

CONSTRUCTION IMPACTS AND MITIGATION

Land Disturbance

The construction of the amended HBEP would require the use of an additional 1.4 acres for the project footprint and an additional 22 acres for construction laydown and temporary parking area, beyond what was identified in the 2014 Final Decision. The ground disturbance for laydown and temporary parking would largely occur in the former Plains All American Tank Farm site. There is known contamination below the existing above-ground storage tanks, distillate tank, and presence of fuel pipelines onsite. Staff understands the project owner is currently in discussions with the Department of Toxic Substances Control Chatsworth Office to identify, quantify, and remediate past contamination issues at the HBGS. Existing and discovered contamination would be remediated prior to the construction of HBEP. The analysis of potential impacts related to the tank site remediation is discussed in the Waste Management section of this document.

The change in construction disturbance area does not require any changes to the existing Conditions of Certification. The owner would still be required to comply with **SOIL&WATER-1** and apply to the State Water Resources Control Board for coverage under the Clean Water Act construction storm water discharge permit to ensure no offsite water quality impacts. Site-specific measures necessary to ensure any runoff from the Plains All American Tank Farm site disturbance would be included in the Stormwater Pollution Prevention Plan required for remediation, construction, and use of the laydown area.

OPERATION IMPACTS AND MITIGATION

Water Use

The proposed project would use less water than the licensed project. The 2014 Commission Decision approved the use of up to 134 AFY of water from the city of Huntington Beach for industrial operation. This project amendment proposes to reduce total water use to 120 AFY. This reduction results in a potentially beneficial impact by decreasing the demand on the supplier system by up to 14 AFY.

Coastal Flooding and Sea-Level Rise

The 2014 Decision evaluated the impact of coastal flooding on the reliability of HBEP. The conclusion was that HBEP had adequate protection from coastal flooding. While the conclusion remains the same for the proposed HBEP, staff presents some updated information regarding coastal flooding and sea-level rise below.

The United States Geological Survey has partnered with California public agencies and other coastal community stakeholders to develop a hazard assessment tool called the Coastal Storm Modeling System (CoSMoS). CoSMoS is a modeling system that predicts levels of coastal flooding and erosion due to both sea level rise and storms driven by climate change. It provides region-specific flood hazard projections at a detailed parcel scale along the California coast. It is based on an active scientific development approach that utilizes cutting-edge science to provide the optimum model outputs possible at this time. CoSMoS uses a combination of historic conditions and global climate models to project future conditions. It also provides flood projections specific for the bathymetry and topography of the modelled areas in Southern California. Staff considers CoSMoS to be the best available science for community planning in coastal zones in Southern California.

CoSMoS calculates 100-year storm water levels based on the contributions of multiple wave condition parameters. These contributions include wave runup, storm surge, seasonal effects, tide differences, and fluvial discharge backflow. Sea-level rise scenarios are later added to the calculated water levels (CCC2016d).

The latest version of CoSMoS, version 3.0, was expected to be complete by summer 2016, but is still in progress. However, Preliminary Phase I, 100-year storm data to be used in CoSMoS became available in 2015. Staff reviewed the available data to evaluate the risks to HBEP. Modelled sea-level rise scenarios in CoSMoS include 50 cm and 100 cm projections. The 2014 Decision contemplated sea-level rise of up to 61 cm (or 2.0 feet). Staff reviewed the CoSMoS 100-year storm with 100 cm sea-level rise inundation risk scenario, assuming it would over-predict the risk at the HBEP site. Staff constructed an inundation map using the data available from the CoSMoS (USGS2016). The resulting geospatial evaluation is included as **Soil and Water Resource Figure 1**. The data show that HBEP is not inundated during a 100-year storm, under a 100-cm sea-level rise scenario. Staff expects the risk of inundation to be lower if sea-level rise during the project life is less than shown in the figure.

COMPLIANCE WITH LORS AND STATE POLICIES

WATER SUPPLY ASSESSMENT

In this section staff updates the information relied on in the Decision.

California Water Code, Sections 10910-10915 (Senate Bill 610)

California Water Code, Sections 10910-10915 are intended to inform CEQA decision-makers about project water supplies and their availability. The California Department of Water Resources (DWR) Senate Bill 610 Guidebook provides general guidance about how to interpret Water Code Sections 10910-10915. The Guidebook discusses how to manage water supplies and how to appropriately project future demands on a water supply system for the next 20 years, while considering new developments. Ultimately a WSA should provide evidence that verifies the sufficiency of, or the deficiencies in, a project's water supply while also ensuring there is an adequate supply for existing users and future demand.

The 2014 Decision, and the WSA therein, should be updated to address input from the city of Huntington Beach, recent city of Huntington Beach water supply data, and discussions relevant to the requirements of California Water Code Sections 10910 through 10915.

Required WSA Elements

Is the amended HBEP a "project" under SB 610?

Any CEQA project that meets the Water Code Section 10912 definition of a "project" requires the preparation of a WSA. Section 10912 identifies a "project" as meeting one of the following definitions excerpted from the water code and listed below. Staff bolded the only definitions that could apply to HBEP; the other definitions are not tested here and do not require further explanation.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

- (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) Except as otherwise provided in subparagraph (B), 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.*
(B) A proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of water annually.

(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.
[emphasis added]

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

There is one “project” definition that requires further consideration. Section (a) (7) requires a WSA if a project used an amount of water equivalent to a 500 dwelling unit project.

(a)(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.

This requirement is the most difficult threshold in the list to interpret. Staff considered the following in making an interpretation about item (a)(7).

- a) How much water does a 500 dwelling unit project use in California?
- b) How much water does a 500 dwelling unit project use in the city of Huntington Beach?
- c) What would staff assume a 500 dwelling unit project would use?
- d) Would the city of Huntington Beach define the amended HBEP as a “project” under Water Code Section 10912?
- e) Would the amended HBEP qualify as a “project” under Water Code Section 10912?

A. How much water does a 500 dwelling unit project use in California?

Guidance for interpreting Water Code Section 10912 is provided in a California Department of Water Resources (DWR) document titled “Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 (DWR2003).” A helpful interpretive section on page 3 of the Guidebook explains how to estimate water consumption for 500 dwelling units. It states that one dwelling unit typically consumes 0.3 to 0.5 AFY (DWR2003). Therefore 500 dwelling units could be interpreted to mean 150 to 250 AFY.

Staff reviewed recent water use data for the state to test the use estimates provided by DWR. During 2015, the statewide average residential gallon per day per capita use rate was 86.0 (SWRCB2016). Census.gov reports that there was an average of 2.95 persons per household in California for years 2010-2014 (Census2016). This equates to 0.28 AF/DU, or 142 AF/500DUs.

The statewide average use for 2015 was very close to DWR's low estimate per household. In the last few years California has experienced an unprecedented drought. Mandatory water use restrictions statewide have resulted in a substantial reduction in water use.

B. How much water does a 500 dwelling unit project use in the city of Huntington Beach?

Staff used two methods to estimate what 500 dwelling units would use in the city of Huntington Beach, both based on actual usage data from the city of Huntington Beach. The first method utilized data provided in the city of Huntington Beach's 2010 Urban Waste Management Plan (UWMP) (UWMP2010). The UWMP plan provides the total water delivered (and projected to be delivered) to residential units, single- and multi-family, in the city's service area. The UWMP also provides the number of single- and multi-family connections. **Soil & Water Table 3** below shows that the expected use for 500 dwelling units in the city of Huntington Beach would be between 151 and 168 AFY, averaging 163 AFY for the projected period 2010 through 2035.

Soil & Water Table 3
Summary of City of Huntington Beach Dwelling Unit Water Usage

	2010	2015	2020	2025	2030	2035
Single Family Use (AF)	14,707	13,754	15,526	16,029	16,252	16,384
Multi-Family Use (AF)	6,908	6,149	7,035	7,119	7,346	7,525
Single Family Units	44,147	44,420	45,459	47,464	48,725	49,562
Multi-Family Units	20,595	21,275	21,730	22,980	23,380	23,965
Total Water Used (AF)	21,615	19,903	22,561	23,148	23,598	23,909
Total Dwelling Units (AF)	64,742	65,695	67,189	70,444	72,105	73,527
Avg Water Used (AF/DU)	0.33	0.30	0.34	0.33	0.33	0.33
Avg AF / 500DUs	167	151	168	164	164	163

Using a slightly different method, staff reviewed water use data submitted by the city of Huntington Beach to the State Water Resources Control Board (SWRCB2016), which is shown in **Soil & Water Table 4** below. Staff assumed the water used in 2015 was used by 65,695 units, as was calculated by the city and shown in **Table 3** above. Based on data the city submitted to the SWRCB, the average rate of use per 500 homes in Huntington Beach was 126 AF in 2015. This lower use rate is consistent with city of Huntington Beach conservation standard imposed by the SWRCB, requiring a 20-percent reduction in residential per capita use due to the recent drought.

C. What would staff assume a 500 dwelling unit project would use?

As shown above, staff has four estimates of water use per 500 dwelling units, based on actual water use rates¹. The lower estimate provided by DWR is 150 AFY. The statewide average in 2015 during the drought was 142 AFY. The most recently published UWMP for the city of Huntington Beach indicates an average use of 163 AFY. Data submitted by the city of Huntington Beach to the SWRCB for 2015, indicates 126 AFY per 500 dwellings. The range of estimates provided is from 126 AFY to 163 AFY. Staff believes all the provided estimates are equally valid.

Soil & Water Table 4
Summary of Residential Water Use in City of Huntington Beach, 2015

Year	Month	Total Use (gal)	R-GPCD	percent res	Total Use Res (gal)	Units	gal/unit	gal/500 units	AF/500 units
2015	Jan	617,781,720	69.1	0.68	420,091,570	65,695	6,395	3,197,287	10
2015	Feb	602,336,363	74.6	0.68	409,588,727	65,695	6,235	3,117,351	10
2015	Mar	720,750,771	80.6	0.68	490,110,525	65,695	7,460	3,730,197	11
2015	Apr	736,098,374	85.1	0.68	500,546,894	65,695	7,619	3,809,627	12
2015	May	710,779,718	79.5	0.68	483,330,208	65,695	7,357	3,678,592	11
2015	Jun	719,251,855	83.2	0.68	489,091,261	65,695	7,445	3,722,439	11
2015	Jul	725,540,787	86.0	0.72	522,389,367	65,695	7,952	3,975,869	12
2015	Aug	763,111,457	90.4	0.72	549,440,249	65,695	8,364	4,181,751	13
2015	Sep	688,328,554	86.6	0.74	509,363,130	65,695	7,753	3,876,727	12
2015	Oct	694,845,583	83.5	0.73	507,237,276	65,695	7,721	3,860,547	12
2015	Nov	649,421,894	80.6	0.73	474,077,983	65,695	7,216	3,608,174	11
2015	Dec	608,820,806	75.1	0.75	456,615,605	65,695	6,951	3,475,269	11
								Total	126

¹ The 2014 HBEP Decision limited the representative 500 dwelling units to low and very low income housing. The UWMP for Huntington Beach forecasts a mix of housing, with the majority being for moderate and high income.

D. Would the city of Huntington Beach define the amended HBEP as a “project” under Water Code Section 10912?

No. Staff inquired with the city regarding the applicability of a WSA for the amended HBEP. The city provided a letter stating that a WSA would not need to be prepared for the project. The letter states that the project’s proposed potable water demand would be less than one-half of the four year (Fiscal Year 2009/2010 to 2013/2014) billed average of 252 AFY, for Huntington Beach Generating Station. The project’s proposed use would result in a net reduction in water delivery of at least 132 AFY (CITY2015a).

E. Would the amended HBEP qualify as a “project” under Water Code Section 10912?

No. HBEP proposes to use up to 120 AFY, which is below the lowest estimate of use per 500 dwelling units, 126 AFY. HBEP would therefore not be considered a “project” under Water Code Section 10912. This conclusion is in agreement with the letter provided by the city of Huntington Beach Public Works Department, stating that a WSA does not need to be prepared for HBEP.

CUMULATIVE IMPACTS

The proposed amendment would result in a reduction in the net water demand on the city of Huntington Beach water supply system. Staff has not identified adverse environmental impacts that could result from the approval of the amended HBEP. There are no threats to existing populations near the proposed project identified in this analysis.

COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT

COMMENTS FROM THE CALIFORNIA COASTAL COMMISSION (CCC)

CCC submitted comments similar to those received in the previous project’s proceeding (12-AFC-02). Though most of the comments were addressed directly by the Commission Decision (2014) for the previous case, staff wanted to provide additional response for instances where it pertains to the amended project.

CCC-1: *Recommended new Condition of Certification* **SOIL&WATER-8:** *Flood Damage Prevention. Prior to the start of construction, AES shall submit for CPM review and approval, certification from a licensed engineer that the proposed facility is elevated above, or protected from, a 500-year flood event at the project site that includes an additional 24 inches of sea level rise. The engineer’s determination shall describe the methods and include the calculations used to determine the elevation of the current 500-year flood event at the site and those used to determine the elevation of a future 500-year flood event with the additional 24 inches of sea level rise expected during the facility’s thirty year operating life.*

Staff Response: The Commission addressed the subject in this comment in the previous proceeding, stating;

“In the Soil and Water Resources section of this Decision, we reviewed the basis for the Coastal Commission’s insertion of a 500-year flood event into the design and implementation of the HBEP. We state again that the conditions of certification already contain sufficient mitigation for the potential impacts of inundation to even a critical facility such as the HBEP. Imposing additional mitigation would not be proportionate to the identified impacts nor necessary to comply with LORS.”

There is no new evidence to suggest that the 100-year level protection is inadequate. This standard is still an applicable engineering standard and provides adequate protection for this type of facility.

CCC-2: *The site is also within the Prado Dam Failure Inundation Zone (see Exhibit 9 – Prado Dam Failure Inundation Zone), which the city established in recognition of the potential failure of the Prado Dam, an earthen structure in the upper Santa Ana River watershed built before modern seismic-resistant designs. Failure of the dam would flood over 100,000 acres, including most of the area of Huntington Beach surrounding the proposed project, with an inundation area of up to 15 miles wide and water levels of greater than 30 feet in some areas. Maximum water levels at the HBEP site from that event are estimated to reach elevations of between 10 and 15 feet.*

Staff Response: Staff reviewed two Prado Dam failure scenarios and found different expected depths of inundation at the part of Huntington Beach where the facility would be constructed. The city of Huntington Beach Hazard Mitigation Plan shows the expected inundation resulting from Prado Dam failure in Huntington Beach at the intersection of Beach Boulevard and Atlanta Avenue. The reported total elevation is 9 feet NGVD29 (or 11.3 feet NAVD88), and would be expected to arrive 9.5 hours after dam failure (HMP 2004). The Coast Community College District Hazard Mitigation Plan similarly shows inundation from dam failure would arrive 9.5 hours after failure, with a resulting total elevation of 9 feet NAVD88 (CCCD 2012). Both of these elevations are lower than the site elevation, 12 to 16 feet NAVD88. Prado Dam failure does not create a particular risk at the site due to its elevation advantage over the surrounding areas. In addition, if flooding were to occur, there would be sufficient time to evacuate personnel and ensure worker safety.

CCC-3: *Drawdown that affects nearby ESHA/wetland areas would be inconsistent with LCP Policies 6.1.4, 7.1.2, and 7.1.3, which require that habitat values be maintained and protected. To ensure project dewatering is done in a manner consistent with these policies, the Commission recommends the CEC modify FSA Condition **GEO-1** to 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 ESHA/wetland areas, the Condition would also require AES to identify and implement methods to avoid those effects, such as installing sheet piles, slurry walls, or other similar barriers, or conduct alternative dewatering methods that would avoid drawing down groundwater in these sensitive areas.*

Staff Response: If dewatering is expected, the project owner would be required to submit a dewatering plan. Staff has already included a Condition (**SOIL&WATER-3**) to cover the discharge of dewatering water and potential impacts from drawdown. Additionally the Commission responded to this comment in the previous proceeding stating,

“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.”

CITY OF HUNTINGTON BEACH

CITY-1: *The discussion of 22 acres of combined construction parking and construction laydown at the adjacent Plains All-American site is different than the approved 1.9 acres of parking previously approved and should be more fully described. The construction laydown activities should be fully analyzed throughout all issue areas of the PSA, including... Soil and Water Resources (drainage at Plains All-American site).*

Staff Response: The new construction and laydown area was discussed in the Soil and Water Resources section of the PSA and is still discussed in the FSA on page 4.9-5. Staff still believes that requiring the owner to obtain a construction storm water permit, as required by Condition **SOIL&WATER-1** would adequately protect the areas surrounding the temporary parking from impacts related to storm water runoff and sedimentation.

CONCLUSIONS AND RECOMMENDATIONS

Staff presented updated information about threats posed by sea-level rise and coastal flooding to the amended HBEP. This new information represents the best available science for planning-level decisions. Staff believes the information provided shows that HBEP has adequate protection from coastal flooding and sea-level rise during the project's life.

The water supply analysis demonstrates that the amended HBEP does not qualify as a “project” under Water Code Section 10912 and that a WSA does not need to be prepared. The Committee should re-analyze the conclusions of the 2014 Decision regarding the maximum amount of water to be used by the project alongside the new information provided in this analysis. This section augments the existing record to reflect current environmental conditions and policy considerations.

PROPOSED CONDITIONS OF CERTIFICATION

The conditions of certification below include the approved conditions of certification from the licensed project and any modifications, additions or deletions required for the amended HBEP. Deleted text is in ~~strike through~~; new text is **bold and underlined**).

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 delegate chief building official (CBO) and compliance project manager (CPM) for review and the SWRCB for review and 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 shall also include estimates of drawdown that may occur at the adjacent marsh land, and identify potential

mitigation, as needed, as well as describe under what circumstances such mitigation 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 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 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: Prior to any dewatering water discharge, the project owner shall submit a ROWD to the RWQCB to obtain the appropriate waiver or permit **and submit the dewatering plan to the CPM.** The appropriate waiver or permit, **as well as dewatering plan,** must be obtained at least 30 days prior to the discharge. 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~~ **120** 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 annual compliance report.

REFERENCES

CCC 2016d – California Coastal Commission/Tom Luster (TN 210681). Total Water Level Contributions Near Huntington Beach. Submitted to CEC/Docket Unit on March 11, 2016

CCCD 2012 – Coast Community College District, Hazard Mitigation Plan. 2012

CENSUS 2016 - United States Census Bureau, State and County Quick Facts, website. Accessed at: <http://quickfacts.census.gov/qfd/states/06000.html>. Accessed on April 8, 2016.

CITY 2015a – Response Letter to the 10/26/15 Request for Water Supply Assessment, city of Huntington Beach Public Work Department. December 11, 2015. TN# 207017.

DWR 2003 – Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. California Department of Water Resources. October 8, 2003.

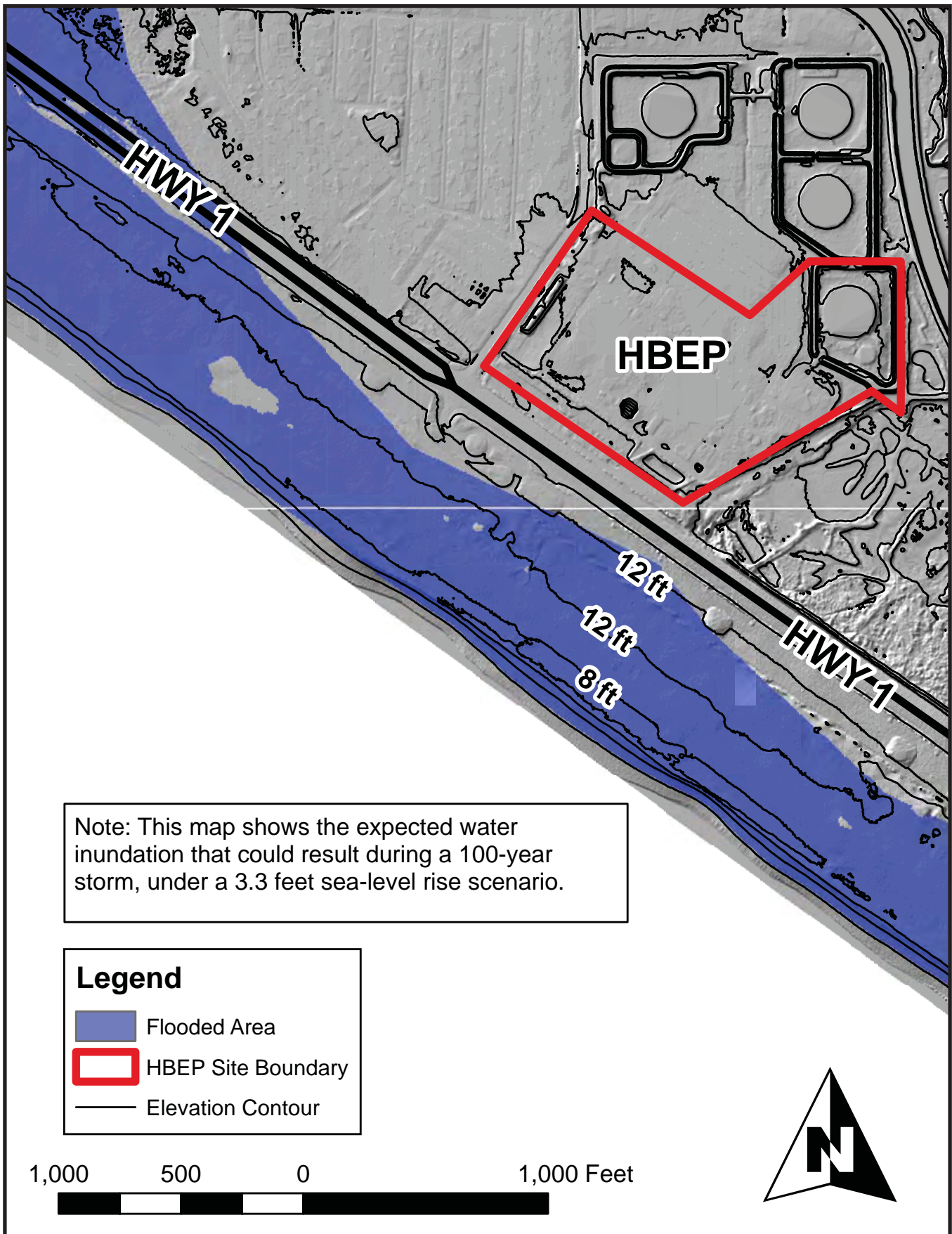
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SWRCB 2016 – State Water Resources Control Board, Water Conservation Portal. Accessed on April 8, 2016. Accessed at: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml

USGS 2016 – United State Geological Survey, Costal Storm Modelling System. Accessed March 2016, accessed at: https://walrus.wr.usgs.gov/coastal_processes/cosmos/socal3.0/index.html.

UWMP 2010 – 2010 Urban Water Management Plan, City of Huntington Beach. June 20, 2011.

SOIL AND WATER RESOURCES - FIGURE 1
Huntington Beach Energy Project- Inundation Map



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: DATA FROM USGS, 2016

TRAFFIC AND TRANSPORTATION

Testimony of John Hope

SUMMARY OF CONCLUSIONS

Staff reviewed potential traffic and transportation impacts previously analyzed for the licensed Huntington Beach Energy Project (HBEP). Staff concludes that the amended HBEP would not result in new significant traffic and transportation effects or increase the severity of previously identified significant effects. In accordance with California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the 2014 Commission Decision is necessary for traffic and transportation. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision with regards to traffic and transportation and does not need to re-analyze them.

The amended HBEP would remain in compliance with applicable laws, ordinances, regulations, and standards (LORS) related to traffic and transportation. Although the proposed amended HBEP would require additional roadway improvements compared to the licensed HBEP, existing Condition of Certification **TRANS-4** would ensure the project owner complies with the city of Huntington Beach's requirements for encroachments into public rights-of-way. Implementation of the amended HBEP could require use of the vacant parcel located across Newland Street and the Plains former oil storage site for construction laydown area and employee parking. Therefore, staff is recommending two new Conditions of Certification: **TRANS-8** (approval of pedestrian access and crossings) and **TRANS-9** (coastal zone parking requirements).

INTRODUCTION

Staff reviewed the 2014 Commission Decision and analyzed the changes to the licensed HBEP, which include:

- Replacing Block 1 with a two-on-one combined-cycle gas turbine (CCGT) configuration,
- Replacing Block 2 as licensed with two simple-cycle gas turbine units,
- Using a natural-gas-fired auxiliary boiler to support the CCGT power block,
- Using a set of natural gas compressors in each power block,
- Constructing other equipment and facilities to be shared by both power blocks,
- Constructing the project on 30 acres within the footprint of the existing Huntington Beach Generating Station (HBGS), and
- Adding a 22-acre area for temporary construction laydown and construction worker parking at the former Plains All-American Tank Farm property.

SUMMARY OF THE DECISION

The Energy Commission's Final Decision for the HBEP was published in November 2014. Based on the evidence presented in the original proceeding, the Energy Commission found and concluded that construction of the HBEP would add traffic to local roadways which would reduce the level of service (LOS) at the Beach Boulevard/ Pacific Coast Highway (PCH) and Brookhurst Street/ PCH intersections. To reduce these impacts, the project owner was required to implement a Traffic Control Plan (TCP) to ensure LOS on local roadways is not significantly degraded and to ensure the safety of the public and construction workers. In addition, the Commission required the project owner to implement 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.

The Energy Commission also concluded that the HBEP's thermal exhaust plumes could present a potential impact to helicopters and small aircraft if they were to fly over the HBEP at low altitude. To mitigate this impact, the Commission required the project owner to coordinate with the Federal Aviation Administration (FAA) to issue various notifications to pilots to advise them against direct overflight of the HBEP.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project have changed since the Commission Decision was published in October 29, 2014. Additionally, the proposed amendment would not trigger new LORS that may not have been applicable to the original project. The amended HBEP would remain in compliance with applicable LORS. As discussed further below, the amended HBEP would involve roadway improvements associated with the proposed expanded use of the Plains All American Tank Farm site. Existing Condition of Certification **TRANS-4** and proposed new Conditions of Certification **TRANS-8** and **TRANS-9** would ensure the project owner complies with the city of Huntington Beach's requirements for encroachments into public rights-of-way.

ENVIRONMENTAL IMPACT ANALYSIS

Staff has reviewed the petition for potential environmental effects. Based on this review, staff determined that modification to the HBEP license would result in changes to the traffic and transportation environment related to construction parking, construction traffic generation, and thermal exhaust plumes.

CONSTRUCTION PARKING

Construction worker parking for construction of the HBEP and demolition of the existing power generating units at the HBGS would be provided by a combination of onsite parking and offsite parking. As with the licensed HBEP, a maximum of 330 parking spaces would be required during construction and demolition activities. The construction and demolition parking options discussed below would include approximately 28.9 acres (approximately 975 parking stalls).

The licensed HBEP included the following parking locations:

- 1.5 acres onsite at the HBGS (approximately 130 parking stalls)
- 3 acres of existing paved/graveled parking located adjacent to the HBEP across Newland Street (approximately 300 parking stalls)
- 2.5 acres of existing paved parking located at the corner of Pacific Coast Highway and Beach Boulevard (approximately 215 parking stalls)
- 1.9 acres at the former Plains All American Tank Farm site located adjacent to the HBEP site (approximately 170 parking stalls).

The amended HBEP would add an additional 20 acres (for a total of 21.9 acres) at the former Plains All American Tank Farm site (for a total of approximately 330 parking stalls). The expanded area would also be used for construction laydown.

To facilitate use of the Plains All American site for construction worker parking and as a construction laydown area, the project owner would construct a new entrance (two lanes in each direction) at the existing Magnolia and Banning signalized intersection. This intersection is currently controlled by an existing three-way traffic signal. The project owner would modify the intersection to a 4-way traffic signal in coordination with the city of Huntington Beach engineering and planning departments in regards to design and meeting the city's specifications. Construction workers who park at the Plains site would walk to the HBEP site via an existing bridge over the Huntington Beach Channel and a walking path. (HBEP 2015a, pg. 2-14) This walking path crosses land owned by the Huntington Beach Wetlands Conservancy (HBWC), which has expressed concern with the project owner's proposed use of the Plains All American site for construction worker parking. Specifically, HBWC states the use of this pathway crossing the wetlands is prohibited. (HBWC 2016) At the April 19, 2016, status conference, the project owner acknowledged HBWC's comments related to the pathway. The project owner responded by stating they would continue pursuing the use of the pathway but would revise the project description if an agreement cannot be reached. It should be noted that the licensed HBEP includes the operation of a shuttle from offsite parking areas which provide sufficient area to accommodate construction worker parking.

The existing Condition of Certification **TRANS-4** would ensure the project owner coordinates with the city of Huntington Beach prior to constructing any improvements to the Magnolia/Banning intersection. Specifically, Condition of Certification **TRANS-4** would require the project owner to provide the compliance project manager (CPM) with copies of all related permit(s) received from the city of Huntington Beach prior to any ground disturbance or obstruction of traffic that would occur with improvements to this intersection. Implementation of the amended HBEP could require use of the vacant parcel located across Newland Street and the Plains former oil storage site for construction laydown area and employee parking. Therefore, staff is recommending a new Condition of Certification **TRANS-8** which would require the project owner to provide to the city of Huntington Beach for review and approval engineering drawings/plans for the design and configuration of the Magnolia/Banning intersection and of pedestrian access and crossings across Newland Street prior to constructing any improvements. In addition, design and configuration of the Magnolia/Banning intersection as part of the amended HBEP could remove existing parking space near

the coast and therefore could conflict with the city of Huntington Beach's requirements for coastal zone parking. Therefore, staff is recommending a new Condition of Certification **TRANS-9** which would require the project owner to comply with the city of Huntington Beach's requirements for coastal zone parking.

CONSTRUCTION TRAFFIC GENERATION

Implementation of the amended HBEP would result in fewer construction trips than the licensed HBEP. Based on the proposed construction activities and workforce estimates, the amended HBEP would generate 638 daily one-way trips and 312 peak hour trips. In comparison, the licensed HBEP was estimated to generate 734 daily trips and 343 peak hour trips. Routes used for construction workers and truck deliveries, including heavy-haul routes, would not change with implementation of the proposed amended HBEP.

Magnolia Street

The project owner assumes that 100 percent of the construction workers for the amended HBEP would park at the Plains All American site. Therefore, it is also assumed that a higher percentage of the project traffic would be distributed to Magnolia Street than what was previously evaluated for the licensed HBEP. The project owner evaluated potential traffic impacts to three intersections along Magnolia Avenue, including at Atlanta Avenue, Hamilton Avenue, and Pacific Coast Highway.

Traffic and Transportation Table 1 below shows the daily traffic volumes and volume-to-capacity (V/C) ratio for the existing plus project conditions on Magnolia Street between Garfield Avenue and Yorktown Avenue. As shown in the table, Magnolia Street would continue to operate at LOS C under the assumption that 100 percent of the workforce uses this roadway exclusively.

**Traffic And Transportation Table 1
Construction Roadway Segment LOS**

Roadway Segment	Number of Lanes	Average Annual Daily Volume	Construction Volume	Total Volume with Construction	Construction V/C Ratio	Construction LOS
Magnolia Street between Garfield Avenue and Yorktown Avenue	4	23,000	638	23,638	0.79	C

Source: HBEP 2015a, page 5-12-5

The project owner also assessed the operating conditions of the intersections on Magnolia Street closest to the Plains All American Tank Farm. **Traffic and Transportation Table 2** below shows the existing AM and PM peak hour intersection LOS for three intersections along Magnolia Street. As shown in the table, the intersections currently operate at LOS A and are estimated to have sufficient capacity to accommodate the increase in project-related trips during both peak hours. This conclusion is based on the minimal increase of traffic along Magnolia Street (3 percent of average annual daily volume) that would occur during construction. Increased traffic generated during construction of the proposed amended HBEP would not have the potential to substantially change the existing operating conditions of Magnolia Street (estimated to operate at LOS C) or intersections which currently operate at LOS A.

Traffic And Transportation Table 2
Existing Intersection LOS

Intersection	AM Peak Hour		PM Peak Hour	
	ICU ¹	LOS	ICU ¹	LOS
Magnolia Street at Atlanta Avenue	0.53	A	0.49	A
Magnolia Street at Hamilton Avenue	0.49	A	0.55	A
Magnolia Street at Pacific Coast Highway	0.56	A	0.57	A

¹ For signalized intersections, the intersection capacity utilization (ICU) methodology is used by the city of Huntington Beach to evaluate the intersection LOS. This methodology sums the V/C ratios for the critical movements of an intersection and results in a total V/C for an intersection, which correlates to a LOS for the intersection.

THERMAL PLUMES

Staff conducted an updated thermal plume analysis of the amended HBEP's combustion turbines (simple- and combined-cycle units), auxiliary boiler, air cooled condenser, and fin fan coolers. The analysis concluded that the air-cooled condenser could cause the greatest risk to any light aircraft that may fly over the HBEP site, with thermal plumes predicted to drop below the critical velocity threshold of 4.3 meters per second (m/s) at 2,200 feet above ground level (AGL). For the licensed HBEP, the thermal plumes were predicted to drop below 4.3 m/s at 1,740 feet AGL. The updated thermal plume velocity analysis is provided in **Traffic and Transportation Appendix TT-1**. However, as discussed in the Commission Decision, pilots would have the ability to safely avoid the HBEP thermal plumes because of the small number of aircraft likely to fly over the HBEP and the presence of available flight paths to avoid the thermal plumes (CEC 2014bb, page 6.2-24). Staff has proposed changes to Condition of Certification **TRANS-7** (Pilot Notification and Awareness) to reflect the increased height of the thermal plumes to be avoided, to update the names of aviation publications and charts, and to improve clarity.

CUMULATIVE IMPACTS

Based on the evidence presented in the original proceeding, the Energy Commission found and concluded that trips generated by 26 known past, current, and probable future projects near the proposed HBEP project and located within the transportation network used by HBEP may combine with HBEP trips to result in cumulative impacts to the LOS of nearby highways, roadways, and intersections. **Traffic and Transportation Table 11** in the Final Commission Decision lists the locations of these cumulative projects (HBEP 2014bb). The Commission concluded that, with imposition and implementation of Conditions of Certification **TRANS-1** through **TRANS-4**, all traffic related direct impacts would be less than significant, and therefore, the project's incremental effects would not be cumulatively considerable.

However, staff has identified that the Poseidon Desalination project was not specifically identified as a cumulative project in the analysis of traffic and transportation impacts provided in the 2014 Final Commission Decision. Trips generated by this project would occur within the transportation network used by HBEP and may combine with HBEP trips to result in cumulative impacts to the LOS of nearby highways, roadways, and intersections. The Poseidon Desalination project, similar to the cumulative projects listed in **Traffic and Transportation Table 11** in the Final Commission Decision, would be required to make road improvements to mitigate the traffic impacts associated with this specific 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 of the Poseidon Desalination project to affected roadways would be addressed as part of the city's Capital Improvement Program or the road improvements would directly reduce the potential impacts to within acceptable city LOS standards. In addition, with imposition and implementation of the Conditions of Certification **TRANS-1** through **TRANS-4**, all traffic related direct impacts of the HBEP would be less than significant. The project's incremental effects would not be cumulatively considerable.

RESPONSE TO COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT

Staff received comments on the Preliminary Staff Assessment (PSA) related to traffic and transportation from the California Coastal Commission and the city of Huntington Beach (TN# 212797, 212437). The project owner provided comments on the PSA which were responses specifically to comments from the city of Huntington Beach (TN# 212379, 212752).

Comment

The applicant stated they have no comments on traffic and transportation analysis contained in the PSA. The applicant also acknowledges willingness to incorporate two additional conditions of certification in response to comments submitted by the city of Huntington Beach.

In response to the city's comments regarding a lack of access and pedestrian crossings of Newland Street from the vacant parcel proposed to be used for construction employee parking, the project owner proposed the new Condition of Certification **TRANS-8**. This new condition would ensure the project owner provides to the city of Huntington Beach for review and approval engineering drawings/plans for the design and configuration of a pedestrian crosswalk for the Newland Street construction parking area.

The city of Huntington Beach informed staff about their requirements for coastal zone parking. Staff agrees that design and configuration of the Magnolia/Banning intersection as part of the amended HBEP could remove existing parking space near the coast and therefore could conflict with the city of Huntington Beach's requirements. In response, to the city's comments, the project owner proposed the new Condition of Certification **TRANS-9** which would require the project owner to comply with the city of Huntington Beach's requirements for coastal zone parking.

Comment

The Coastal Commission recommends that the Traffic Control Plan include measures necessary to ensure that project-related traffic would at least maintain the existing LOS along Pacific Coast Highway (PCH), Newland Avenue, Brookhurst Street, Magnolia Street, and Beach Boulevard during the anticipated 10 years of construction for this project, to ensure no reduction in public access to the shoreline.

As identified by the commentor, the amended HBEP would result in "minor reductions in the LOS at nearby intersections during peak construction and peak traffic times." The purpose of this FSA is to identify any new significant traffic and transportation effects or potential increase in the severity of previously identified significant traffic and transportation effects from the licensed HBEP. Staff reviewed potential traffic and transportation impacts previously analyzed for the licensed HBEP and concur with the commentor's conclusion that the amended HBEP would result in minor reduction of traffic levels. Based on this conclusion, the amended HBEP would not create new or increased traffic effects and conclusions related to the licensed HBEP conformance with LOS standards would not change with the amended HBEP.

Comment

The Coastal Commission also recommends that the CEC modify the project's traffic analysis to incorporate additional cumulative traffic impacts—namely, the construction traffic of up to 225 trips per day resulting from the proposed adjacent Poseidon desalination project and up to about 200 trips per day from the nearby Ascon Landfill cleanup project.

The ASCON Landfill Remediation project was considered as part of the cumulative scenario as part of the 2014 Commission Decision (see Traffic and Transportation Table 11 of the 2014 Final Commission Decision). However, the Poseidon Desalination project was not specifically identified in the analysis of cumulative traffic and transportation impacts. The cumulative analysis has been updated in this FSA to reflect this.

Comment

The PSA did not address the coastal zone replacement parking requirements with the proposed Magnolia Street and Banning Avenue intersection reconfiguration.

The city of Huntington Beach informed staff about their requirements for coastal zone parking. Staff agrees that design and configuration of the Magnolia/Banning intersection as part of the amended HBEP could remove existing parking space near the coast and therefore conflict with the city of Huntington Beach's requirements. In response to the city's comments, the project owner proposed the new Condition of Certification **TRANS-9** which would ensure the project owner complies with the city of Huntington Beach's requirements for coastal zone parking.

Comment

The PSA did not remark on the access and pedestrian crossings of Newland Street from the vacant parcel proposed to be used for construction employee parking.

In response to the city's comments, the project owner proposed the new Condition of Certification **TRANS-8** would ensure the project owner provides to the city of Huntington Beach for review and approval engineering drawings/plans for the design and configuration of a pedestrian crosswalk for the Newland Street construction parking area.

Comment

The analysis did not justify the need for two ingress and two egress lanes associated with the proposed Magnolia Street and Banning Avenue intersection reconfiguration.

As identified by the project owner, the proposed project would redesign and reconfigure the existing three-way traffic signal at the Magnolia/Banning intersection to facilitate use of the Plains All American site for construction worker parking and as a construction laydown area. It is noted that the existing Condition of Certification **TRANS-4** and new Condition of Certification **TRANS-8** would ensure the project owner provides to the city of Huntington Beach for review and approval engineering drawings/plans for the design and configuration of the Magnolia/Banning intersection prior to constructing any improvements.

Comment

Traffic analysis of intersection operations during construction (with project conditions) was not provided.

As identified on page 4.10-4 of the PSA, implementation of the amended HBEP would result in fewer construction trips than the licensed HBEP. The proposed amended HBEP is estimated to generate 638 daily one-way trips and 312 peak hour trips as compared to the licensed HBEP which was estimated to generate 734 daily trips and 343 peak hour trips. A new analysis of intersection operations during construction (with project conditions) is not necessary for the amended HBEP because the amended project would not increase the number of trips.

Comment

The cumulative traffic impacts should be reanalyzed to include the ASCON Landfill Remediation project and Poseidon Desalination project.

The ASCON Landfill Remediation project was considered as part of the cumulative scenario as part of the 2014 Commission Decision (see Traffic and Transportation Table 11 of the 2014 Final Commission Decision). However, the Poseidon Desalination project was not specifically identified in the analysis of cumulative traffic and transportation impacts. The cumulative analysis has been updated in this FSA to reflect this.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that the proposed amendment would not result in new significant traffic and transportation effects, or increased the severity of previously identified significant effects. Existing Conditions of Certification **TRANS-1** through **TRANS-6**, and **TRANS-7** as modified to reflect the increased height of the thermal plumes, would be sufficient to reduce the amended HBEP's traffic impacts to a less-than-significant level. Therefore, staff concludes that the findings of fact from the licensed HBEP Commission Decision would still apply to the amended HBEP. In accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the 2014 Commission Decision is necessary for traffic and transportation. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision with regards to traffic and transportation and does not need to re-analyze them.

Subsequent to the HBEP Decision, staff became aware of updated sectional charts and changes to FAA circulars and regulations related to the safe operation of aircraft near a power plant. Therefore, staff recommends minor administrative changes to Conditions of Certification **TRANS-6** and **TRANS-7** to reflect these updates and changes. Staff proposes deleting the portions of the Verification for **TRANS-6** related to obstruction marking and lighting on permanent structures, which appear to have been included in error. **TRANS-6** relates to the marking and lighting per FAA regulations of objects taller than 200 feet AGL (i.e., construction equipment). As discussed in the Commission Decision, the licensed HBEP's tallest permanent structures (its 120-foot tall exhaust stacks) would not exceed this threshold and neither would the amended HBEP's tallest permanent structures (150-foot tall stacks). Staff has proposed other minor changes to **TRANS-7** to improve clarity and implementation of certain elements of the condition.

The amended HBEP would remain in compliance with applicable LORS related to traffic and transportation. Existing Condition of Certification **TRANS-4** would ensure the project owner complies with the city of Huntington Beach requirements for encroachments into public rights-of-way prior to constructing any improvements. The amended HBEP would require improvements to the Magnolia Street/Banning Avenue intersection, therefore staff is proposing new Conditions of Certification **TRANS-8** and **TRANS-9**. Condition of Certification **TRANS-8** would require the project owner to provide to the city of Huntington Beach for review and approval engineering drawings/plans for the design and configuration of the Magnolia/Banning intersection and of pedestrian access and crossings across Newland Street prior to constructing any

improvements. In addition, design and configuration of the Magnolia/Banning intersection as part of the amended HBEP could remove existing parking space near the coast and therefore could conflict with the city of Huntington Beach's requirements for coastal zone parking. Therefore, staff is recommending a new Condition of Certification **TRANS-9** which would require the project owner to comply with the city of Huntington Beach's requirements for coastal zone parking.

Socioeconomics **Figure 1** shows no presence of an environmental justice population living in the project's six-mile radius.

PROPOSED CONDITIONS OF CERTIFICATION

Conditions of Certification **TRANS-3** through **TRANS-5** do not require any changes. Staff proposes two minor editorial changes to conditions **TRANS-1** and **TRANS-2** for clarity. As discussed above, staff proposes minor changes to Conditions of Certification **TRANS-6** and **TRANS-7** and the addition of Conditions of Certification **TRANS-8** and **TRANS-9**. Deleted text is in ~~striktthrough~~. New text is **bold** and **underlined**.

TRANS-1 ROADWAY USE PERMITS AND REGULATIONS

The project owner shall apply to each jurisdiction along the route of travel from the Port of Long Beach to the **Alamitos Generating Station (AGS)** and/or project site for all necessary transportation permits 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.

TRANS-2 RESTORATION OF ALL PUBLIC ROADS, EASEMENTS, AND RIGHTS-OF-WAY

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.

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.

TRANS-3 TRAFFIC CONTROL PLAN

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,~~ **and the operations of shuttle(s) from offsite parking areas**. 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:

1. 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,
2. Placement of necessary signage, lighting, and traffic control devices at the project construction site and lay-down areas;
3. 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;
4. Location and details of construction along affected roadways at night, where permitted;

5. Temporary closure of travel lanes or disruptions to street segments and intersections during construction activities;
6. Traffic diversion plans (in coordination all applicable local jurisdictions and Caltrans) to ensure access during temporary lane/road closures;
7. Access to residential and/or commercial property located near construction work and truck traffic routes;
8. Assurance of access for emergency vehicles to the project site;
9. Advance notification to residents, businesses, emergency providers, and hospitals that would be affected when roads may be partially or completely closed;
10. Identification of safety procedures for exiting and entering the site access gate;
11. 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. **The Parking/Staging Plan shall identify operation time(s) and route(s) for shuttle(s) from offsite parking areas.** The Parking/Staging Plan shall prohibit use of the Huntington Beach City parking area unless the CPM determines that there are insufficient parking spaces available at the other parking facilities identified in this Decision.

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.

TRANS-4 ENCROACHMENT INTO PUBLIC RIGHTS-OF-WAY

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.

TRANS-5 HAZARDOUS MATERIALS

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.

TRANS-6 OBSTRUCTION MARKING AND LIGHTING

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 **FAA Advisory Circular 70/7460-1L (or current circular in effect)**, 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.~~

TRANS-7 PILOT NOTIFICATION AND AWARENESS

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 **2,200** 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 ~~Los Angeles~~San Diego Sectional Chart with a notice to “avoid overflight below 1,740 2,200 feet AGL”.
- ~~Submit a letter Requesting~~ that Southern California Terminal Radar Approach Control (TRACON) submit aerodrome remarks describing the location of the HBEP plant and advising against direct overflight below 1,740 2,200 feet AGL to the:
- ~~FAA AeroNav Services, formerly the FAA National Aeronautical Charting Office (Airport/Facility Directory)~~ - Southwest U.S.
- ~~Jeppesen Sanderson Inc. (JeppGuide Airport Directory,~~ Airway Manual Services - Western Region U.S. Airport Directory)
- ~~Airguide Publications (Flight Guide, Western States)~~ Pilot's Guide to California Airports

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 and Southern California TRACON) to the CPM for review and approval.

Within ~~At least 60 days prior to the start of operations,~~ after CPM approval of draft language for the letters of request to the FAA and Southern California TRACON, the project owner shall submit the required letters of request to the FAA and request ~~that to~~ to Southern California TRACON to 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 additional action related to that request and shall be deemed compliance with that portion of this condition of certification.

TRANS-8 CONSTRUCTION WORKER PARKING/CONSTRUCTION LAYDOWN ACCESS

The project owner shall provide the engineering plan/drawings for the design and reconfiguration of the Magnolia/Banning intersection (signal and street striping/signage), including the grading and civil engineering to construct a two-lane entrance road into the Plains former oil storage site to the City of Huntington Beach Public Works Department for review and comment, and to the CBO for review and approval.

The project owner shall provide the engineering plan/drawings for the design and configuration of entrances and a pedestrian crosswalk for the Newland Street construction parking area to the City of Huntington Beach Public Works Department for review and comment, and to the CBO for review and approval.

Verification: At least 30 days prior to construction of the intersection reconfiguration, the project owner shall provide the engineering plan/drawings for the design and reconfiguration of the Magnolia/Banning intersection and entrance road into the Plains site and the design and configuration of entrances to the City of Huntington Beach Public Works Department for review and comment and to the CBO for review and approval.

At least 30 days prior to use of the Newland Street construction parking area, the project owner shall provide the engineering plan/drawings for the design and reconfiguration of the pedestrian crosswalk to the City of Huntington Beach Public Works Department for review and comment and to the CBO for review and approval.

TRANS-9 REPLACEMENT OF STREET PARKING DUE TO RECONFIGURATION OF MAGNOLIA/BANNING INTERSECTION

If existing street parking on Magnolia Street is reduced as a result of the project's reconfiguration of the Magnolia/Banning intersection and the construction of the new entrance to the Plains site, the project owner shall replace the loss of street parking on a one-for-one basis within "walking distance" of the displaced parking spaces as required by Section 231.28 of the City of Huntington Beach Zoning Code. Replacement parking shall be assured before removal of any existing parking to ensure no reduction in available parking spaces.

Verification: At least 10 days prior to reduction of existing street parking, the project owner shall submit a parking replacement plan to the City of Huntington Beach for review and comment, and submit to the CPM for review and approval. The plan shall identify the number and location of parking spaces to be removed and the number and location of parking spaces to be replaced.

REFERENCES

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

FAA 2015 – *Aeronautical Information Manual, Section 7-5-15. Avoid Flight in the Vicinity of Exhaust Plumes (Smoke Stacks and Cooling Towers)*. December 10, 2015.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

HBEP 2014j – City of Huntington Beach Comments Regarding Final Staff Assessment, dated June 26, 2014 (TN 202629). Submitted to CEC/Docket Unit on June 30, 2014.

HBWC 2016 – Huntington Beach Wetlands Conservation / Gordon W. Smith (tn211134). Comments of the Huntington Beach Energy Projects' Petition to Amend, dated 04/18/2016. Submitted to CEC/Dockets Unit on 04/18/2016.

APPENDIX TT-1: PLUME VELOCITY ANALYSIS

Wenjun Qian, Ph.D., P.E.

INTRODUCTION

The following provides the assessment exhaust stack plume vertical velocities of the Amended Huntington Beach Energy Project (Amended HBEP) combustion turbines, auxiliary boiler, air cooled condenser (ACC) and fin fan coolers. Staff completed calculations to determine the worst-case vertical plume velocities at different heights above the stacks based on the project owner's proposed facility design, with staff corrections to some of the operational data. The purpose of this appendix is to provide documentation of the method used to estimate worst-case vertical plume velocity estimates to assist evaluation of the project's impacts on aviation safety in the vicinity of the Amended HBEP.

SUMMARY OF THE DECISION

On October 29, 2014, the Energy Commission approved the HBEP as a 939 MW (nominal output) combined cycle power plant with two power blocks. Each power block would consist of three Mitsubishi Heavy Industries 501DA gas turbine generators coupled with one steam turbine, in a combined cycle configuration. The Final Commission Decision (CEC 2014bb) of HBEP concluded that the average velocity of the gas turbines drops below 4.3 m/s at the height of 1,740 feet (with two plumes fully merged). The Final Commission Decision also shows that the vertical plume velocity for the air cooled condenser (ACC) would drop below 4.3 m/s at a lower height, between 1,000 and 1,100 feet above ground level (AGL).

PROJECT DESCRIPTION

The Amended HBEP would be a natural-gas-fired, combined-cycle and simple-cycle, air-cooled electrical generating facility located on the site of the existing Huntington Beach Generating Station (HBGS) in Huntington Beach, California. The combined-cycle power block would consist of one two-on-one combined-cycle unit – two GE Frame 7FA.05 gas turbines, two unfired heat recovery steam generators (HRSGs), one steam turbine generator, one air-cooled condenser, one natural-gas-fired auxiliary boiler, and related ancillary equipment. The other power block would include two simple cycle GE LMS-100PB combustion turbines with one fin-fan cooler each and their separate ancillary equipment.

PLUME VELOCITY CALCULATION METHOD

SPILLANE APPROACH

Staff uses a calculation approach from a technical paper (Best 2003) to estimate the worst-case plume vertical velocities for vertical turbulence from plumes such as the Amended HBEP stacks and cooling system. The calculation approach, which is also known as the “Spillane approach”, used by staff is limited to calm wind conditions, which are the worst-case wind conditions. The Spillane approach uses the following equations to determine vertical velocity for single stacks during dead calm wind (i.e., wind speed = 0) conditions:

$$(1) \quad (V \cdot a)^3 = (V \cdot a)_o^3 + 0.12 \cdot F_o \cdot [(z - z_v)^2 - (6.25D - z_v)^2]$$

$$(2) \quad (V \cdot a)_o = V_{\text{exit}} \cdot D / 2 \cdot (T_a / T_s)^{0.5}$$

$$(3) \quad F_o = g \cdot V_{\text{exit}} \cdot D^2 \cdot (1 - T_a / T_s) / 4$$

$$(4) \quad Z_v = 6.25D \cdot [1 - (T_a / T_s)^{0.5}]$$

Where: V = vertical velocity (m/s), plume-average velocity

a = plume top-hat radius (m, increases at a linear rate of $a = 0.16 \cdot (z - z_v)$)

F_o = initial stack buoyancy flux m^4/s^3

z = height above ground (m)

z_v = virtual source height (m)

V_{exit} = initial stack velocity (m/s)

D = stack diameter (m)

T_a = ambient temperature (K)

T_s = stack temperature (K)

g = acceleration of gravity (9.8 m/s^2)

Equation (1) is solved for V at any given height above ground that is above the momentum rise stage for single stacks (where $z > 6.25D$) and at the end of the plume merged stage for multiple plumes. This solution provides the plume-average velocity for the area of the plume at a given height above ground; the peak plume velocity would be two times higher than the plume-average velocity predicted by this equation. The stack buoyancy flux (Equation 3) is a prominent part of Equation (1). The calm condition calculation basis clearly represents the worst-case conditions, and the vertical velocity will decrease substantially as wind speed increases.

For multiple stack plumes, where the stacks are equivalent as is the case for HBEP, the multiple stack plume velocity during calm winds is calculated by staff in a simplified fashion, presented in the Best Paper as follows:

$$(5) \quad V_m = V_{\text{sp}} \cdot N^{0.25}$$

Where: V_m = multiple stack combined plume vertical velocity (m/s)

V_{sp} = single plume vertical velocity (m/s), calculated using Equation (1)

N = number of stacks

This simplified multiple stack plume velocity calculation method predicts somewhat lower velocity values than the full Spillane approach methodology for multiple plumes as given in data results presented in the Best paper (Best 2003). However, for a long linear set of plumes, such as the ACC designed for the Amended HBEP project, it is very unlikely that all plumes can merge fully to allow this velocity given the stack separation and the height/atmospheric conditions needed for them to fully merge. Therefore the use of this approach will likely over predict the combined plume velocities in this case.

MITRE EXHAUST PLUME ANALYZER

On September 24, 2015, the Federal Aviation Administration (FAA) released a guidance memorandum (FAA 2015) recommending that thermal plumes be evaluated for air traffic safety. FAA determined that the overall risk associated with thermal plumes in causing a disruption of flight is low. However, it determined that such plumes in the vicinity of airports may pose a unique hazard to aircraft in critical phases of flight (such as take-off and landing). In this memorandum a new computer model, different than the analysis technique used by staff and identified above as the Spillane Approach, is used to evaluate vertical plumes for hazards to light aircraft. It was prepared under FAA funding and available for use in evaluating exhaust plume impacts.

This new model, the MITRE Corporation's Exhaust Plume Analyzer (MITRE 2012), was identified by the FAA as a potentially effective tool to assess the impact that exhaust plumes may impose on flight operations in the vicinity of airports (FAA 2015). The Exhaust Plume Analyzer was developed to evaluate aviation risks from large thermal stacks, such as turbine exhaust stacks. The model provides output in the form of graphical risk probability isopleths ranging from 10^{-2} to 10^{-7} risk probabilities for both severe turbulence and upset conditions for four different aircraft sizes. However, at this time the Exhaust Plume Analyzer model cannot be used to provide reasonable risk predictions on variable exhaust temperature thermal plume sources, such as cooling towers and air cooled condensers.

The FAA has not provided guidance on how to evaluate the risk probability isopleth output of the Exhaust Plume Analyzer model, but states in their memorandum that they intend to update their guidance on near-airport land use, including evaluation of thermal exhaust plumes, in fiscal year 2016. However, MITRE Corporation is suggesting that a probability of severe turbulence at an occurrence level of greater than 1×10^{-7} (they call this a Target Safety Level) should be considered potentially significant. This is equivalent to one occurrence of severe aircraft turbulence in 10 million flights. For the past 50 years, the MITRE Corporation has provided air traffic safety guidance to FAA, and their recommended Target Safety Level is based on this experience (MITRE 2016).

Additionally, the MITRE model has a probability of occurrence plot limitation. While it provides output for predict plumes up to a maximum height of 3,500 feet above ground, the meteorological data that is used by the model is currently limited to a maximum height of 3,000 feet, so any higher altitudes simply reuse the 3,000 foot meteorological data. The model was developed with the assumption that a plume would not rise higher than 3,000-3,500 feet above ground level, so the modeling output was terminated at that height¹. The effort to expand the data set and model to work properly at altitudes above 3,000 feet above ground level is such that the MITRE Corporation would need additional funding.

The MITRE Exhaust Plume Analyzer model uses site specific computer-generated, three dimensional meteorological data (atmospheric temperature and wind speed, varying with height above ground at the specific site location) combined with a series of aircraft conditions related to the determination of turbulence effects and upset to develop the modeling output. The data sources used to create the site specific meteorological data are from the National Oceanic and Atmospheric Administration's National Weather Service (NWS). These computer-generated data are averaged over 13-kilometer grid cells using a model covering the continental United States. The specific NWS measuring stations that provide this data were not identified in the model documentation. The model uses three years of the computer-generated site specific hourly meteorological data to perform these calculations (MITRE 2012).

Staff conducted a preliminary evaluation using the MITRE model for the proposed GE 7FA.05 turbines and GE LMS-100PB turbines plumes, and results for the level of significance recommended by MITRE Corporation (1×10^{-7}) were above 3,000 feet above ground, outside the recommended output range of the model and above the 3,500 foot level provided as the highest extent in the model's graphical output files. At this time staff does not believe the MITRE model should be used for final work products until the vertical axis is extended, the significance threshold is verified by the FAA and the model capabilities are enhanced to include other thermal plume sources such as cooling towers and air-cooled condensers.

STAFF ANALYSIS

This appendix uses the Spillane Approach method to be consistent with staff assessments done for other projects and because the Spillane Approach is described in the FAA materials as providing similar risk assessments for light aircraft. As stated above, staff will consider using the new MITRE method to the extent that it is applicable after conducting further review of the FAA methodology and once FAA develops guidance on how to evaluate the output of the Exhaust Plume Analyzer.

¹ This recommendation seems to be based on MITRE's worst case exhaust assumptions that are similar to the exhaust conditions of a GE LM6000 gas turbine operating in simple cycle mode. However, there are many larger turbines operating in simple cycle mode, such as the GE LMS100 gas turbines proposed for the Amended HBEP that have about twice the thermal exhaust output of a GE LM6000 gas turbine.

EQUIPMENT DESIGN AND OPERATING PARAMETERS

GE 7FA.05 COMBUSTION GAS TURBINE DESIGN AND OPERATING PARAMETERS

The design and operating parameter data for the GE 7FA.05 combustion gas turbine stacks are provided in **Plume Velocity Table 1**. Staff chose four scenarios from the project owner-provided modeling inputs from the Petition to Amend (PTA) Appendix 5.1B and Appendix 5.1C (HBEP 2015a). Operating parameters chosen were for ambient temperatures of 32, 65.8, and 110 degree Fahrenheit (°F) at maximum turbine loads to compute worst-case vertical plume velocities. Therefore the exhaust operating parameters shown correspond to full load operation for the corresponding ambient conditions.

Plume Velocity Table 1
GE 7FA.05 CTG Exhaust Parameters

Parameter	GE 7FA.05			
Stack Height	150 ft. (45.72 meters)			
Stack Diameter	20 ft. (6.10 meters)			
CTG Load (%)	100			
Ambient Temperature (°F)	32	65.8	110	
With Inlet Air Cooling	No	No	Yes	No
Exhaust Temperature (°F)	216	215	221	223
Exhaust Velocity (ft/s)	66.95	66.21	66.36	58.91
Exhaust Flow Rate (1000 lb/hr)	4,360	4,307	4,268	3,797

Source: HBEP 2015a

GE LMS-100PB COMBUSTION GAS TURBINE DESIGN AND OPERATING PARAMETERS

The design and operating parameter data for the GE LMS-100PB combustion gas turbine stacks are provided in **Plume Velocity Table 2**. Staff chose three scenarios from the project owner-provided modeling inputs from the Petition to Amend (PTA) Appendix 5.1B and Appendix 5.1C (HBEP 2015a). Operating parameters chosen were for ambient temperatures of 32, 65.8, and 110 degree Fahrenheit (°F) at maximum turbine loads to compute worst-case vertical plume velocities. Therefore the exhaust operating parameters shown correspond to full load operation for the corresponding ambient conditions.

Plume Velocity Table 2
GE LMS-100PB CTG Exhaust Parameters

Parameter	GE LMS-100PB		
Stack Height	80 ft. (24.38 meters)		
Stack Diameter	13.5 ft. (4.11 meters)		
CTG Load (%)	100		
Ambient Temperature (°F)	32	65.8	110
With Inlet Air Cooling	No	Yes	Yes
Exhaust Temperature (°F)	789	794	848
Exhaust Velocity (ft/s)	109.18	108.66	96.61
Exhaust Flow Rate (1000 lb/hr)	1,754	1,746	1,473

Source: HBEP 2015a

AUXILIARY BOILER DESIGN AND OPERATING PARAMETERS

Plume Velocity Table 3 shows the design and operating parameter data for the auxiliary boiler stack, which were provided by the project owner in the PTA (HBEP 2015a). Staff chose the operating parameters (shown in **Plume Velocity Table 3**) which correspond to the maximum heat input case to compute worst-case vertical plume velocities.

Plume Velocity Table 3
Auxiliary Boiler Exhaust Parameters

Parameter	Auxiliary Boiler
Stack Height	80 ft. (24.38 meters)
Stack Diameter	3 ft. (0.91 meters)
Exhaust Temperature (°F)	318
Exhaust Velocity (ft/s)	69.6
Exhaust Flow Rate (Actual Cubic Feet per Minute [ACFM])	29,473

Source: HBEP 2015a

AIR-COOLED CONDENSER DESIGN AND OPERATING PARAMETERS

Plume Velocity Table 4 shows the design and operating parameter data for the air-cooled condenser (ACC) for the combined-cycle power block. The project owner provided the data in Data Responses Set 1 (HBEP 2015i). Staff noticed that the project owner-provided outlet air flow rates, outlet air exit velocities, and cell dimensions of the ACC are internally inconsistent with each other. Staff measured the diameter of each fan of the ACC from PTA Figure 2.1-2 General Arrangement/Site Plan (HBEP 2015a). Staff recalculated the outlet air exit velocities using the project owner-provided outlet air flow rates and staff-measured fan diameter. The staff-measured fan diameter and staff-calculated outlet air exit velocities are shown in **Plume Velocity Table 4** with an asterisk symbol (*).

FIN FAN COOLER DESIGN AND OPERATING PARAMETERS

Plume Velocity Table 5 shows the design and operating parameter data for each of the fin fan coolers for the simple-cycle power block. The project owner originally provided the data for the fin fan coolers in Data Responses Set 1 (HBEP 2015i). However, staff noticed that the project owner-provided heat rejection, outlet air flow rates, outlet air exit velocities, and cell dimensions of the fin fan coolers are internally inconsistent with each other. Staff requested the project owner to provide performance data sheets from the vendor and clarify the inconsistencies. The project owner provided follow-up vendor data sheets (HBEP 2016o) for the fin fan coolers. Staff recalculated the outlet air exit velocities and heat rejection rates using the air flow rates, inlet and outlet air temperatures from the vendor data sheets (HBEP 2016o), and the cell diameter from Data Responses Set 1 (HBEP 2015i). Staff corrected the 32°F ambient temperature case exhaust data using mass and energy balance calculations based on the vendor data supplied by the project owner and the number of fans in operation (12 fans in operation in the 32°F case rather than 28). The staff-calculated values are shown in **Plume Velocity Table 5** with an asterisk symbol (*).

Plume Velocity Table 4
Air-Cooled Condenser Exhaust Parameters

Parameter	Combined-Cycle Air-Cooled Condenser		
Number of Cells	30		
Cell Height (ft)	53.1		
Cell Diameter (ft)	43.9 (L) x 43.1 (W)		
Fan Diameter (ft) ^a	40*		
Distance Between Cells (ft)	0 ft (adjoining cells share a single column)		
Ambient Temperature	32	65.8	110
Ambient Relative Humidity	87%	58%	8%
Number of Cells in Operation	13	30	28
Heat Rejection (MW)	369.4	378.6	400.9
Outlet Air Temperature (°F)	90.9	92.7	142.2
Outlet Air Exit Velocity (ft/s) ^b	21.79*	21.14*	20.86*
Outlet Air Flow (lb/hr)	92,142,000	205,538,400	173,790,000

Source: HBEP 2015a, HBEP 2015i, and independent staff analysis

Notes:

^a Staff measured the diameter of each fan from PTA Figure 2.1-2 General Arrangement/Site Plan (HBEP 2015a).

^b Staff calculated the exit velocities based on the project owner-provided outlet air flow rates and staff-measured fan diameter from PTA.

Plume Velocity Table 5
Fin Fan Cooler Exhaust Parameters

Parameter	Simple-Cycle Fin Fan Cooler		
Number of Cells (Fans)	28 total, 14 bays (2 fan per bay)		
Cell Height (ft)	24		
Cell Diameter (ft)	13		
Ambient Temperature (°F)	32	65.8	110
Ambient Relative Humidity	87%	58%	8%
Number in Operation	12 fans	28 fans	28 fans
Outlet Air Temperature (°F)	70.85	82.2	126.26
Air flow rate/fan (acfm/cell) ^a	222,100*	217,467	238,733
Outlet Air Exit Velocity (ft/s) ^a	27.9*	27.31*	29.98*
Heat Rejection (MW) ^a	33.2*	31.3*	31.3*

Source: HBEP 2015i, HBEP 2016o, and independent staff analysis

Note:

^a Staff calculated the exit velocities and heat rejection rates based on the air flow rates, inlet and outlet air temperatures from the vendor data sheets (HBEP 2016o), and the cell diameter from Data Responses Set 1 (HBEP 2015i). Staff corrected the 32°F ambient temperature case exhaust data using mass and energy balance calculations based on the vendor data supplied by the project owner and the number of fans in operation (12 fans in operation in the 32°F case rather than 28).

PLUME VELOCITY CALCULATION RESULTS

Using the Spillane Approach, the plume average vertical velocities at different heights above ground were determined by staff for calm conditions for the proposed gas turbines, auxiliary boiler, air-cooled condenser (ACC) and fin fan coolers. Staff evaluated the potential for plume merging using the following stack-to-stack distances: (1) the distance between the two GE 7FA.05 combined-cycle turbine stacks would be about 44 meters (m), (2) the distance between the two GE LMS-100PB simple-cycle turbine stacks would be about 44 m. Plumes begin merging when the radius of each of the two plumes added together equals the distance between the stacks. As a rule of thumb they are considered fully merged when the sum of the plume radii adds to equal twice the distance between stacks.

As explained in the Transportation and Traffic section, a plume average vertical velocity of 4.3 m/s has been determined by staff to be the critical velocity of concern to light aircraft. This is based on the Australian Civil Aviation Safety Authority (CASA) advisory circular (CASA 2003). Vertical velocities below this level are not of concern to light aircraft.

The combined-cycle power block would have two GE 7FA.05 combined-cycle turbine stacks, with a spacing of about 44 meters from each other. When the spacing between the stacks is not large enough to prevent plume merging, the exhaust plumes may spread enough to significantly merge prior to the velocity lowering to vertical velocities below levels of concern. Therefore, staff calculated the plume size and vertical velocities for the single plume without merging (N=1) and two plumes fully merged (N=2). Staff calculated plume average vertical velocities for all four operating cases shown in **Plume Velocity Table 1** for the GE 7FA.05 turbines and determined that the worst-case predicted plume velocities would occur at full load operation without inlet air cooling at the 32°F ambient temperature condition. Staff's calculated worst-case plume average velocity values are provided in **Plume Velocity Table 6**.

The GE 7FA.05 gas turbine plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 810 feet above ground for the single turbine plume (N=1). The plume diameter at this height would be around 62.6 meters, which would be larger than the distance between the two GE7FA.05 gas turbine stacks (44 meters). Therefore the merging of the adjacent turbine plumes should be considered. In the case of two plumes fully merging (N=2), the average velocity is calculated to drop below 4.3 m/s at the height of 1,220 feet above ground.

Plume Velocity Table 6
GE 7FA.05 Turbine Plume Size (m) and Vertical Plume Velocities (m/s)

Height Above Ground Level (Feet)	Plume Diameter (m) ^a	Plume Velocity (m/s) ^b	
		N=1	N=2
300	12.84	8.84	Not Merged
400	22.59	6.46	Not Merged
500	32.35	5.51	Not Merged
600	42.10	4.96	Not Merged
700	51.85	4.59	Not Merged
800	61.61	4.31	Not Merged
900	71.36	4.09	Not Merged
1,000	81.12	3.91	Not Merged
1,100	90.87	3.76	4.47
1,200	100.62	3.63	4.32
1,300	110.38	3.52	4.18
1,400	120.13	3.42	4.06
1,500	129.88	3.33	3.96
1,600	139.64	3.25	3.86
1,700	149.39	3.17	3.77
1,800	159.14	3.11	3.70
1,900	168.90	3.05	3.62
2,000	178.65	2.99	3.55
2,100	188.41	2.94	3.49

Notes:

a – The separation between the two stacks would be about 44 meters 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.

The simple-cycle power block would have two GE LMS-100PB simple-cycle turbine stacks, with a spacing of about 44 meters from each other. Staff calculated the plume size and vertical velocities for the single plume without merging (N=1) and two plumes fully merged (N=2). Staff calculated plume average vertical velocities for all three operating cases shown in **Plume Velocity Table 2** for the GE LMS-100PB turbines and determined that the worst-case predicted plume velocities would occur at 100 percent load operation without inlet air cooling at the 32°F ambient temperature condition. Staff's calculated worst-case plume average velocity values are provided in **Plume Velocity Table 7**.

The GE LMS-100PB gas turbine plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 1,140 feet above ground for the single turbine plume (N=1). The plume diameter at this height would be around 100.3 meters, which would be larger than the distance between the two GE LMS-100PB gas turbine stacks (44 meters). Therefore the merging of the adjacent turbine plumes should be considered. In the case of two plumes fully merging (N=2), the average velocity is calculated to drop below 4.3 m/s at the height of 1,820 feet above ground.

Plume Velocity Table 7
GE LMS-100PB Turbine Plume Size (m) and Vertical Plume Velocities (m/s)

Height Above Ground Level (Feet)	Plume Diameter (m) ^a	Plume Velocity (m/s) ^b	
		N=1	N=2
300	18.39	7.91	Not Merged
400	28.15	6.68	Not Merged
500	37.90	5.99	Not Merged
600	47.65	5.53	Not Merged
700	57.41	5.18	Not Merged
800	67.16	4.91	Not Merged
900	76.92	4.69	Not Merged
1,000	86.67	4.50	Not Merged
1,100	96.42	4.34	5.16
1,200	106.18	4.20	5.00
1,300	115.93	4.08	4.85
1,400	125.68	3.97	4.72
1,500	135.44	3.87	4.61
1,600	145.19	3.79	4.50
1,700	154.94	3.70	4.40
1,800	164.70	3.63	4.32
1,900	174.45	3.56	4.23
2,000	184.21	3.50	4.16
2,100	193.96	3.44	4.09

Notes:

a – The separation between the two stacks would be about 44 meters 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.

Staff also calculated plume average vertical velocities for the auxiliary boiler using the operating parameters shown in **Plume Velocity Table 3**. **Plume Velocity Table 8** shows the worst-case plume average velocity values for the auxiliary boiler. The auxiliary boiler plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 130 feet above ground.

Plume Velocity Table 8
Auxiliary Boiler Plume Size (m) and Vertical Plume Velocities (m/s)

Height Above Ground Level (Feet)	Plume Diameter (m)	Plume Velocity (m/s)
100	1.58	9.83
110	2.55	6.38
120	3.53	4.92
130	4.50	4.12
140	5.48	3.63
150	6.45	3.29
160	7.43	3.05
170	8.40	2.86
180	9.38	2.72
190	10.35	2.60
200	11.33	2.49
210	12.31	2.41
220	13.28	2.33
230	14.26	2.27
240	15.23	2.21
250	16.21	2.16
260	17.18	2.11
270	18.16	2.07
280	19.13	2.03
290	20.11	1.99
300	21.08	1.95

Staff calculated plume average vertical velocities for all three operating cases shown in **Plume Velocity Table 4** for the combined-cycle's air-cooled condenser and determined that the worst-case height at which the plume velocities would drop below 4.3 m/s would occur at 32°F ambient temperature condition. Staff assumed that the plumes from all cells in operation would be fully merged. Staff's calculated worst-case plume average velocity values are provided in **Plume Velocity Table 9**. The combined-cycle air-cooled condenser plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 2,200 feet above ground.

Plume Velocity Table 9
Combined-Cycle Air-Cooled Condenser Vertical Plume Velocities (m/s)

Height Above Ground Level (Feet)	Plume Velocity (m/s)
400	7.01
500	6.82
600	6.53
700	6.26
800	6.01
900	5.79
1,000	5.59
1,100	5.42
1,200	5.27
1,300	5.13
1,400	5.00
1,500	4.89
1,600	4.78
1,700	4.69
1,800	4.60
1,900	4.51
2,000	4.44
2,100	4.36
2,200	4.30
2,300	4.23
2,400	4.17
2,500	4.11

Finally, staff calculated plume average vertical velocities for all three operating cases shown in **Plume Velocity Table 5** for the simple-cycle fin fan coolers determined that the worst-case height at which the plume velocities would drop below 4.3 m/s would occur at 110°F ambient temperature condition. Staff assumed that the plumes from all cells in operation would be fully merged. Staff's calculated worst-case plume average velocity values are provided in **Plume Velocity Table 10**. The combined-cycle air-cooled condenser plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 280 feet above ground.

Plume Velocity Table 10
Simple-Cycle Fin Fan Cooler Vertical Plume Velocities (m/s)

Height Above Ground Level (Feet)	Plume Velocity (m/s)
110	9.97
120	9.02
130	8.26
140	7.63
150	7.12
160	6.68
170	6.31
180	5.99
190	5.71
200	5.46
210	5.25
220	5.06
230	4.89
240	4.73
250	4.59
260	4.47
270	4.35
280	4.24
290	4.15
300	4.06

The velocity values listed above in **Plume Velocity Table 6** through **Plume Velocity Table 10** are plume average velocities across the area of the plume. The maximum plume velocity, based on a normal Gaussian distribution, is two times the plume average velocities shown in the tables.

It should be noted that additional thermal plume merging between the gas turbine stacks, the air-cooled condenser, the auxiliary boiler, and the fin fan coolers could occur and increase the plume heights where vertical velocities of 4.3 m/s are exceeded under worst case conditions. The model used for this analysis is not able to add different kinds of thermal plumes together. However, the approach is still conservative given the conservatism built in the model.

WIND SPEED STATISTICS

The Air Quality section of this document uses meteorological data from John Wayne airport station, which is about 6.6 miles northeast of the Amended HBEP site. The wind roses and wind frequency distribution data collected from the John Wayne airport station were considered to be representative for the project site location. The project owner provides the calm wind speed statistics for John Wayne airport station from ground-level meteorological data collected for 2010 through 2014 (HBEP 2015a). Calm winds for the purposes of the reported monitoring station statistics are those hours with average wind speeds below 0.5 m/s. Calm or very low wind speeds can also occur for shorter periods of time within each of the monitored average hourly conditions. However, the shortest time resolution for the available meteorological data is one hour. The annual wind rose data shows calm/low wind speed conditions averaging an hour or longer is 2.8 percent in the site area, or about 245 hours per year.

CONCLUSIONS

The worst case calm wind condition vertical plume average velocities from the proposed GE 7FA.05 combined-cycle turbine stacks are predicted to drop below 4.3 m/s at the height of 1,220 feet assuming two plumes fully merged. The worst case calm wind condition vertical plume average velocities from the proposed GE LMS-100PB turbine stacks are predicted to drop below 4.3 m/s at the height of 1,820 feet assuming two plumes fully merged. The worst case auxiliary boiler plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 130 feet. The worst case air-cooled condenser plume average velocity is calculated to drop below 4.3 m/s at a height of approximately 2,200 feet. The worst case plume average velocity for each of the fin fan coolers is calculated to drop below 4.3 m/s at a height of approximately 280 feet. Thus, the thermal plume from the proposed air-cooled condenser would cause greatest risk to light aircraft.

Also, there is the potential for additional thermal plume merging between the gas turbine stacks and the air-cooled condenser or fin fan coolers that could increase the plume heights where vertical velocities of 4.3 m/s are exceeded under worst case conditions. Calm/low wind speed conditions (wind speeds less than 0.5 m/s) conducive to the formation of worst-case thermal plume velocities would occur on average approximately 2.8 percent of the time.

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TRANSMISSION LINE SAFETY AND NUISANCE

Testimony of Obed Odoemelum, Ph.D.

SUMMARY OF CONCLUSIONS

The Petition to Amend (PTA) for the licensed Huntington Beach Energy Project (HBEP) proposes project modifications that would not change the Transmission Line Safety and Nuisance (TLSN) conditions of certification as already approved (HBEP 2015a). These certification requirements were intended in the California Energy Commission's 2014 Final Decision (Decision) to ensure that any transmission line safety and nuisance impacts would be less than significant (2014a). Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the 2014 Decision is necessary for TLSN. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision regarding TLSN (CEC 2014a) and does not need to re-analyze them. Staff's assessment shows that the proposed design and operational plan would not affect the ability of the Amended HBEP to comply with applicable laws, ordinances, regulations, and standards (LORS) given that the previously-approved conditions of certification would be retained.

INTRODUCTION

The safety and nuisance impacts from operating transmission lines depend on compliance with specific nuisance and safety LORS. Such compliance is ensured by maintaining these impacts within levels considered appropriate by the California Public Utilities Commission (CPUC). The owner of the licensed HBEP established the adequacy of their proposed design and operational plan before the Energy Commission which approved the proposal and specified the four conditions of certification necessary (2014a). The project owner is proposing the same HBEP compliance measures for the Amended HBEP (HBEP 2015a). Staff has reviewed the related 2014 Decision along with the owner's amendment request documents to determine whether or not the proposed modification would affect the ability of the Amended HBEP to comply with applicable LORS.

SUMMARY OF THE DECISION

In its 2014 Decision (CEC 2014a), the California Energy Commission found the design, routing and operational plan for licensed HBEP transmission line to be adequate to ensure operation without adverse safety and nuisance impacts. To ensure implementation of the necessary mitigation measures, the Decision included staff's proposed TLSN Conditions of Certification **TLSN-1** through **TLSN-4**.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS COMPLIANCE

There have been no changes to the transmission line-related LORS of concern to staff since the Decision was published on October 29, 2014 for the licensed HBEP.

ENVIRONMENTAL IMPACT ANALYSIS

As more fully described in the **Project Description** and **Transmission System Engineering** sections, the Amended HBEP would be located at the site of the licensed HBEP with the generated power transmitted to the region's electric grid using the existing Southern California Edison's (SCE's) 230-kilovolt (kV) switchyard. As with the licensed HBEP, the lines for the Amended HBEP would lie entirely within the boundaries of the existing Huntington Beach Generating Station and no offsite line would be necessary (HBEP 2015a). The applicant has provided the proposed support tower design as necessary for compliance with the National Electrical Safety Code, CPUC's General Order (GO) 95 and other applicable safety requirements.

COMPLIANCE WITH LORS

As discussed in staff's analysis for the licensed HBEP (CEC 2014b), current CPUC policy on minimizing the field and non-field impacts of any line is to design and operate the line according to the guidelines of the main area utility lines to which the line would be connected. The utility in this case is the SCE. Since the proposed HBEP line would be designed according to the respective requirements of GO-95, GO-52, GO-128, GO-131-D, and Title 8, Section 2700 et seq. of the California Code of Regulations, and operated and maintained according to current SCE guidelines, staff considers the proposed design and operational plan to be in compliance with the applicable LORS.

CONCLUSIONS AND RECOMMENDATIONS

The project owner proposes to implement the same design, operational and routing plan approved in the Commission's 2014 Decision on HBEP along with the four implementing conditions of certification. Since the related mitigation requirements would be adequate to minimize the safety and nuisance impacts of specific concern to staff, we conclude that the proposed modification would not affect HBEP's ability to comply with the applicable transmission line safety and nuisance LORS.

CONDITIONS OF CERTIFICATION

Since the Amended HBEP transmission line design and operational plan would ensure compliance with applicable safety and nuisance LORS by retaining the conditions of certification already required for the licensed HBEP, staff does not propose further mitigation. These conditions of certification are presented below for information purposes.

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 for Electrical Facilities.

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 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 to validate the estimates provided by the applicant 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. These measurements shall be completed no later than six months after the start of operations.

Verification: The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements. The CPM shall determine the need for further mitigation from these field measurements.

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.

REFERENCES

CEC 2014a – California Energy Commission. Final Commission Decision, Huntington Beach Energy Project. Docketed on 11/4/2014.

CEC 2014b – California Energy Commission. Huntington Beach Power Project: Final Staff Assessment . May 2014.

HBEP 2015a – Huntington Energy Project: Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015

VISUAL RESOURCES

Testimony of Jeanine Hinde

SUMMARY OF CONCLUSIONS

Staff reviewed potential visual resources impacts previously analyzed for the Huntington Beach Energy Project (HBEP). Because the amended HBEP would change the types, sizes, and massing of power plant structures on the site, staff evaluated how those changes could affect views of the project site for the key observation points (KOPs) closest to the project site. Staff concludes that the amended HBEP would not result in new significant adverse impacts on visual resources or increase the severity of previously identified significant effects. The amended HBEP would not cause any inconsistencies with visual resources laws, ordinances, regulations, and standards (LORS) identified in the Energy Commission's Final Decision (Decision) (Energy Commission 2014a). The amended HBEP does not change the "Findings of Fact" or "Conclusions of Law" for visual resources that are contained in the Decision.

INTRODUCTION

Staff reviewed the visual resources analysis contained in the project owner's Petition to Amend the HBEP (AES 2015a) and compared the potential visual impacts of the amended HBEP to those of the licensed HBEP.

KEY OBSERVATION POINTS

The visual analysis for the licensed HBEP involved identifying KOPs that would most clearly show the visual effects of the proposed project. A total of seven KOPs were selected to represent views from areas with relatively high levels of visual sensitivity. The KOPs represent viewing conditions for nearby residential areas, designated scenic roadways, and visitor and recreation areas. These are the seven KOPs in the visual resources analysis, which are carried forward to staff's analysis of the amended project (see **Visual Resources (VR) Figure 1**):

- **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

ARCHITECTURAL ENHANCEMENT CONCEPT FOR THE PROJECT SITE

In April 2014, during the original proceeding for the HBEP, the city of Huntington Beach (City) adopted Resolution No. 2014-18 supporting the applicant's conceptual architectural enhancements for the project (City of Huntington Beach 2014). Resolution No. 2014-18 included a recommendation that the Energy Commission incorporate the architectural enhancement concept, with modifications, into final project approvals. The visual resources analysis for the licensed HBEP used the recommended concept for architectural enhancements to assess impacts on visual resources from the KOPs closest to the project site (KOPs 1, 4, and 5). The simulations showing the concept for architectural screening are included in the Decision, which discusses how the proposed architectural screening would contribute to reduce the project's visual impacts (Energy Commission 2014a). In its Decision, the Energy Commission specified that visual enhancements were to be consistent with the architectural treatment recommended for approval by the City.

The amended HBEP would change the types, sizes, and massing of power plant structures on the site. Consequently, the petitioner developed and presented some revised architectural screening concepts for review and consideration by staff in the City's Planning Division. The petitioner also submitted an application to the City's Design Review Board with the visual enhancement concept that was the product of the coordination process with City planning staff. The City is following a similar process as before, and on March 10, 2016, the Design Review Board took action on the application and issued a recommendation for approval to the City Council as submitted. In its Notice of Action on the proposed visual enhancements, the Design Review Board states that the conceptual plan "should not be construed as a precise plan, reflecting conformance to all Zoning and Subdivision Ordinance requirements." It also states that additional requirements may be imposed before the project starts. An attachment to the Notice of Action includes a condition of approval requiring the project owner to design the visual screening to withstand the elements of the coastal environment and maintain the structures continuously. On March 16, 2016, the petitioner submitted a status update to the Energy Commission on the visual enhancement concept for the amended project, which included the Design Review Board's recommendation and simulated images showing the revised visual enhancement concept (AES 2016).

City planning staff presented the visual enhancement concept for consideration at a City Council study session on April 18, 2016. On May 2, 2016, the City Council voted to adopt Resolution No. 2016-27 in support of the proposed architectural improvements consisting of a marine inspired sphere wall design treatment. On July 21, 2016, an executed copy of the City's modified and approved resolution was submitted to the Energy Commission for docketing under this proceeding (City of Huntington Beach 2016).

The simulated images for the modified visual enhancement concept show three wave-like screens using 24-inch plastic spheres in shades of blue attached to high tensile vertical wires (see the subsection below, “Visual Change for the KOPs,” with references to figures at the end of this analysis showing the modified visual screening concept). As described by the project owner, the sphere wall structures will stand approximately 120 feet tall at their highest points. Resolution No. 2016-27 includes a recommendation that the Energy Commission incorporate the architectural treatments into its final project approvals.

During comments and questions offered at the May 2 City Council meeting, Council member Jill Hardy asked about the potential effects of glare from the screening wall spheres. The Decision for the HBEP imposed Condition of Certification **VIS-1**, which requires that surface treatments minimize the potential visual effects of glare from project surfaces. **VIS-1** also requires the project owner to submit samples of colors and finishes for architectural screening structures for review and approval by the Energy Commission compliance project manager; staff proposes to add a requirement for a physical sample of the plastic material that will be used for the sphere installation on the screening wall (see the subsection below, “Proposed Modifications to Conditions of Certification”). These submittals will allow staff to assess the project’s compliance with **VIS-1**.

SUMMARY OF THE DECISION

The November 2014 Decision for the HBEP describes the architectural screening concept that was adopted by the City under its previous Resolution No. 2014-18. The Energy Commission imposed Condition of Certification **VIS-1**, which requires preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures that was to be consistent with the City’s recommended visual screening concept.

The Decision describes the project’s operational impacts and visual effects for each of the project’s KOPs. For KOP 1 from Huntington State Beach and KOP 3 from Edison Community Park, the Energy Commission concludes that although the impacts at those KOPs are considered less than significant, implementation of Condition of Certification **VIS-1** could reduce perceived visual changes between the existing power plant (Huntington Beach Generating Station) and the HBEP. The Decision includes a figure showing the conceptual architectural enhancements from the KOP 1 viewpoint (Energy Commission 2014a).

For KOP 4 from Magnolia Street near the Pacific Coast Highway (PCH), the Decision concludes that implementation of the HBEP with no visual screening would substantially degrade the existing visual character of the site and its surroundings. The Energy Commission imposed Condition of Certification **VIS-1**, and the Decision includes a figure showing the conceptual architectural enhancements from the KOP 4 viewpoint. The Energy Commission adopted Condition of Certification **VIS-2**, which requires preparation and implementation of a Perimeter Screening and On-site Landscape and Irrigation Plan to further mitigate the visual impact at KOP 4 (Energy Commission 2014a). With implementation of Conditions of Certification **VIS-1** and **VIS-2**, the Energy

Commission concludes in the Decision that visual impacts at KOP 4 would be reduced to less than significant.

For KOP 5 from the entrance to the Huntington By-The-Sea Mobile Estates and RV Park, the Energy Commission concludes that implementation of the HBEP with no surface treatments or visual screening would cause a significant impact on visual resources. With adoption of Conditions of Certification **VIS-1** and **VIS-2**, the Energy Commission concludes that the visual impact at KOP 5 would be reduced to less than significant. The Decision includes a figure showing the conceptual architectural enhancements from the KOP 5 viewpoint (Energy Commission 2014a).

The Decision discusses the potential for visual impacts to occur during project demolition and construction. The Energy Commission adopted Conditions of Certification **VIS-3** and **VIS-4** to screen construction sites, protect existing landscape plantings, and implement appropriate construction lighting to reduce those impacts to less than significant (Energy Commission 2014a).

For KOPs 2, 6, and 7, the Energy Commission concludes that potential impacts on visual resources are considered less than significant with no mitigation required (Energy Commission 2014a).

For potential visual impacts of light or glare during project operations, the Energy Commission adopted Conditions of Certification **VIS-5** and **VIS-6** that require preparation and implementation of a Lighting Management Plan and related documentation. The Energy Commission concludes that with implementation of the adopted visual resources conditions of certification, “the project will meet all applicable LORS relating to visual resources which are contained in this Decision” (Energy Commission 2014a).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

An assessment of the project’s consistency with applicable LORS is presented in the **Visual Resources** section of the Decision (Energy Commission 2014a). Staff concludes that no changes or updates to the previous list of applicable LORS are necessary. The table in the Decision, “Proposed Project Consistency with Applicable Visual Resources LORS,” includes a comprehensive list of visual resources LORS that also apply to the amended project.

Staff has identified some minor corrections needed to the LORS consistency table under the column, “Basis for Determination.” In **Visual Resources (VR) Table 1**, below, these modifications are shown in ~~strike-through~~ for deletions and **bold and underline** for additions. The edits to the table were made primarily to update the City’s resolution number supporting the petitioner’s conceptual architectural improvements. Although few changes were made to the LORS table published in the Decision, it is entirely reproduced below for clarity.

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
California Coastal Act of 1976		
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.	Consistent, with implementation of VIS-1 and VIS-2	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 city of Huntington Beach (City), and timely comments from that agency will be considered by the Energy Commission Compliance Project Manager (CPM) prior to plan approval.
City of Huntington Beach General Plan		
Land Use Element		
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.	Consistent, with implementation of VIS-1 and VIS-2	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.
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.	Refer to the analyses (below) under the goals, policies, and objectives for the Urban Design Element.	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.
Urban Design Element		
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.	Consistent, with implementation of VIS-1 and VIS-2	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.
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.	Consistent, with implementation of VIS-1 and VIS-2	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
<p>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 existing utility facilities to ensure no visual impairment of coastal corridors and entry nodes.¹</p>		
Circulation Element		
<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.</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 City, and timely comments from that agency 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		
<p>Goal U 5. Maintain and expand service provision to City residences and businesses.</p> <p>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 City, and timely comments from that agency 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>
Environmental Resources / Conservation Element		
<p>Goal ERC 4. Maintain the visual quality of the City's natural environment.</p> <p>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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.</p>

¹ 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 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
<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.</p> <p>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 <u>amended</u> 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>
Coastal Element		
<p>Goal C 4. Preserve, enhance, and restore the aesthetic resources of the coastal zone, including natural areas, beaches, bluffs, and significant public views.</p> <p>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>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>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 City, and timely comments from that agency 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>Preparation and implementation of a Lighting Management Plan (VIS-5), which will be submitted to 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 purchasing lighting equipment for Power Block-2 <u>the simple-cycle gas turbine units</u>.</p>

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
<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>	Consistent, with implementation of VIS-1 and VIS-2	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.
Huntington Beach Zoning & Subdivision Ordinance		
Title 21 – Base Districts		
<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>	Consistent, with implementation of VIS-1	Preparation and implementation of a Visual Screening and Enhancement Plan for Project Structures (VIS-1). The plan will be submitted to the City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval. The consistency determination is also based on the City's approval of Resolution No. 2014-48 2016-27 (TN #202084) supporting the <u>applicant's project owner's</u> conceptual architectural improvements as modified and the approximately 425 <u>150</u> -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 City, and timely comments from that agency 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>	Consistency with the requirement to evaluate the visual effects of the proposed project is achieved with preparation of this analysis.	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
	Consistency with the requirement to preserve visual resources is achieved with implementation of VIS-1 and VIS-2 .	
<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 City, and timely comments from that agency 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 2016-27 (TN #202084) supporting the applicant's project owner's conceptual architectural improvements as modified and the approximately 125 150 -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>	Consistent, with implementation of VIS-1	<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 City, and timely comments from that agency 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 2016-27 (TN #202084) supporting the applicant's project owner's conceptual architectural improvements as modified and the approximately 125 150-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>	Consistent, with implementation of VIS-4 , VIS-5 , and VIS-6	Preparation and implementation of a Lighting Management Plan (VIS-5), which will be submitted to the City for timely review and comment. VIS-4 requires project lighting during demolition, construction, and commissioning to minimize potential night lighting impacts.

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
		<p>VIS-6 requires a full review of the approved Lighting Management Plan prior purchasing lighting equipment for Power Block 2 <u>the simple-cycle gas turbine units</u>.</p> <p>VIS-5 and VIS-6 require new lighting fixtures to achieve high energy efficiency for the <u>amended</u> 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 Plan consistent with the requirements of VIS-2. The plan will be submitted to the City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.</p>
<p>Ch. 232, Landscape Improvements.</p> <p>Section 232.04 General Requirements. Landscape plans prepared by a California State Licensed Landscape Architect shall be submitted 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>Consistent, with implementation of VIS-2</p>	<p>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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.</p>

Visual Resources Table 1
Amended Project Consistency with Applicable Visual Resources LORS

LORS Summary Description	Consistency Determination	Basis for Determination
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 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>	Consistent, with implementation of VIS-1 and VIS-2	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 City, and timely comments from that agency will be considered by the Energy Commission CPM prior to plan approval.

ENVIRONMENTAL IMPACT ANALYSIS

Staff compared the amended HBEP's visual impacts to the licensed HBEP by evaluating proposed changes to the locations, dimensions, and massing of power plant structures.

MAJOR COMPONENTS OF THE AMENDED HBEP

VR Table 2 compares the dimensions of structures for the licensed HBEP's Power Block 1 to the same or similar structures for the amended HBEP's General Electric (GE) Frame 7FA.05 combined-cycle units. Project features are included on the northeast and east portions of the project site that would likely be visible from publicly accessible areas.

Compared to the licensed HBEP, the amended project's air cooled condenser (ACC) would be twice as long as the ACC unit for the licensed HBEP. The amended HBEP's ACC would also be a few feet taller and wider. The licensed project's three exhaust stacks were 120 feet tall and 18 feet in diameter whereas the amended HBEP's exhaust stacks would be 150 feet tall and 20 feet in diameter. Under the amended HBEP, the

exhaust stacks would be more prominent in views from recreational and residential areas and local roadways in the project vicinity, including the PCH.

Compared to the licensed HBEP's three heat recovery steam generators (HRSGs), the amended project's two HRSGs would each be larger in general and considerably longer. The amended HBEP's steam turbine generator (STG) would be considerably larger than the STG for the licensed project, as shown in **VR Table 2**.

The amended HBEP would include construction of two 50-foot-tall sound/acoustical walls on the northeast portion of the site. The longest segment would stretch along the east/northeast side of the site adjacent to Magnolia Marsh. No similar walls were proposed under the original HBEP.

Compared to the licensed HBEP's three combustion gas turbine (CGT) air intake systems, the amended project's two CGT system structures would be considerably longer and twice as tall.

Visual Resources Table 2
Comparison of Licensed HBEP Power Block 1 to the Amended Project's
Combined-Cycle Units for Visually Prominent Structures

Project Feature (see note)	Licensed HBEP Power Block 1				Amended HBEP GE Frame 7FA.05			
	Length (feet)	Width/ Diameter (feet)	Height (feet)	Quantity	Length (feet)	Width/ Diameter (feet)	Height (feet)	Quantity
CGT	89	32	34	3	40	18	30	2
CGT Generator Enclosure	16	39	34	3	65	24	30	2
STG	23	—	52	1	100	50	59	1
STG Enclosure	59	55	40	1	—	—	—	—
HRSG	77	44	92	3	140	32	94	2
Stack	—	18	120	3	—	20	150	2
CGT Air Intake System	40	17	38	3	62	18	75	2
ACC	209	127	104	1	420	128	110	1
Service/Fire Water Tank	—	—	—	—	—	52	40 or 45	1
Demineralized Water Tank	—	—	—	—	—	33	30 or 33	1
Eastern Sound Wall	—	—	—	—	848	2.5	50	1
Western Sound Wall	—	—	—	—	170	2.5	50	1
Transmission Structure	—	—	85–135	3	—	—	85–135	1
Transmission Dead-end Structure	—	—	75	3	—	—	75	4

Source: AES 2015a and 2015b

VR Table 3 compares the dimensions of structures for the licensed HBEP's Power Block 2 to the same or similar structures for the amended HBEP's GE LMS100PB simple-cycle turbines. Project features are included on the west portions of the project site that would likely be visible from publicly accessible areas. The project structures associated with the proposed simple-cycle units are generally smaller in scale compared to the licensed HBEP's structures in the former Power Block 2.

Visual Resources Table 3
Comparison of Licensed HBEP Power Block 2 to the Amended Project's
Simple-Cycle Units for Visually Prominent Structures

Project Feature	Licensed HBEP Power Block 2				Amended HBEP LMS100			
	Length (feet)	Width/Diameter (feet)	Height (feet)	Quantity	Length (feet)	Width/Diameter (feet)	Height (feet)	Quantity
CGT	89	32	34	3	40	35	30	2
CGT Generator Enclosure	16	39	34	3	24	20	20	2
STG	23	—	52	1	—	—	—	—
STG Enclosure	59	55	40	1	—	—	—	—
HRSG (licensed HBEP)	77	44	92	3	—	—	—	—
Exhaust Transition (amended HBEP)	—	—	—	—	45	25	40	2
Stack	—	18	120	3	—	13.5	80	2
CGT Air Intake System	40	17	38	3	50	15	47	2
ACC (licensed HBEP)	209	127	104	1	—	—	—	—
Fin Fan Cooler (amended HBEP)	—	—	—	—	110	102	24	2
Transmission Structure	—	—	85–135	2	—	—	85–135	1
Transmission Dead-end Structure	—	—	75	3	—	—	75	1

Source: AES 2015a and 2015b

Visual Change for the KOPs

KOP 1 represents views of the project site from Huntington State Beach. KOP 1 was used to show the conceptual architectural enhancement proposal that was recommended to the Energy Commission for approval in the original licensing proceeding. **VR Figure 2** shows how the approved architectural design concept from the Decision partially screens views of project structures from KOP 1. **VR Figure 3** shows the petitioner's visual simulation of the amended HBEP from KOP 1 with no visual enhancements or screening. **VR Figure 4** shows the revised visual enhancement concept for the amended project for the view from KOP 1; the simulated view is among

those included in the City's May 2, 2016, adoption of Resolution No. 2016-27 recommending the modified visual enhancement concept for the project. The visual enhancement concept uses architectural wave forms to screen views of the major power plant structures.

KOP 4 represents views of the project site from Magnolia Street along the southeast border of Magnolia Marsh near the PCH. **VR Figure 5** shows the approved architectural enhancement concept from the KOP 4 viewpoint as shown in the Decision. Under the amended HBEP, the sizes and massing of structures in the northeast portion of the site would be greater compared to the licensed project and clearly visible from KOP 4. The amended project's ACC for the combined-cycle units would be twice as long as the ACC unit for the licensed HBEP (420 feet compared to 209 feet). The amended HBEP's ACC would be situated closer to the project boundary along Magnolia Marsh. The 50-foot-tall sound wall is visible from KOP 4. **VR Figure 6** shows the petitioner's visual simulation of the amended HBEP from KOP 4 with no architectural enhancements or surface treatments. **VR Figure 7** shows the revised visual enhancement concept for the amended project for the view from KOP 4, which is included in the City's adopted Resolution No. 2016-27 recommending the visual enhancement concept for the project (City of Huntington Beach 2016). The architectural wave forms in shades of blue partially screen the mass of major power plant structures from this viewpoint. The architectural screening helps to obscure views of the turbines, the lower portions of the exhaust stacks, and the lower end of the ACC unit that is closest to Magnolia Marsh. As depicted in **VR Figure 7**, the color scheme proposed by the project owner for the sphere wall appears to be reproduced on the ACC unit, the sound wall, and the upper portions of the stacks as a coordinating paint scheme.

KOP 5 represents views toward the project site from the northwest-west side of the site along Newland Street. This KOP was photographed from inside the driveway entrance to the Huntington By-The-Sea Mobile Estates and RV Park, which is approximately 550 feet inland from the intersection of Newland Street with the PCH (see **VR Figure 1**). **VR Figure 8** shows the approved architectural enhancement concept from the KOP 5 viewpoint as shown in the Decision. The licensed project's ACC unit for the former Power Block 2 is prominently visible on the left side of the visual simulation, and the gas turbine units are screened behind the architectural wave form. The amended HBEP's GE LMS100PB simple-cycle turbines would not require an ACC unit. Under the amended HBEP, the simple-cycle gas turbine units and related structures would be oriented a little differently on the building pad such that a viewer at KOP 5 looking directly toward the site would see little of the power block structures (see **VR Figure 9**).

Under the licensed HBEP, the visual elements associated with the architectural screening concept would have improved the visual character and quality of the KOP 5 view. Staff concludes that the absence of power plant structures, even with visual enhancements, would improve the view compared to the licensed HBEP.

With implementation of an architectural and visual enhancement concept that is substantially consistent with the City's adopted Resolution No. 2016-27, staff concludes that the potentially significant visual impact at KOP 4 is reduced to less than significant. The redesign of the amended HBEP avoids the licensed project's significant visual impact at KOP 5. The visual enhancement concept recommended by the City would

achieve compliance with applicable LORS, including the requirement to restore and enhance visual quality in visually degraded areas in coastal areas. For KOPs 2, 3, 6, and 7, staff concludes that potential impacts of the amended HBEP on visual resources are similar to the licensed HBEP and less than significant.

Staff's conclusions for the amended HBEP are consistent with the Energy Commission's assessment and conclusions for visual resources impacts contained in the Decision for the HBEP.

Visible Plumes

Under the original proceeding for the licensed HBEP, Energy Commission air quality staff evaluated the project's exhaust gas characteristics and ambient air conditions and concluded that conditions would be unlikely to cause formation of visible plumes above the project's exhaust stacks (Energy Commission 2014a).

For the amended HBEP, staff concludes that visible water vapor plumes from the proposed GE 7FA.05 turbines/HRSGs and the auxiliary boiler are expected to occur very infrequently, well below 20 percent of seasonal daylight clear hours.

Staff also reviewed the visible plume potential for the GE LMS100PB simple-cycle turbines. Based on data provided by the petitioner, staff concludes there would be no potential for visible water vapor plumes to form above the turbine exhaust stacks. Air quality staff's visible plume analysis is presented in **Appendix VR-1** at the end of this visual resources analysis.

Visual resources staff concludes that no impact on visual resources would occur pertaining to visible water vapor plumes, and no new analysis or changes to the conclusions for the amended HBEP are required.

Cumulative Impacts

The Decision evaluated the impacts of cumulative projects on visual resources for the licensed HBEP (Energy Commission 2014a). The geographic scope of the area that could be subject to a cumulative visual effect is limited to the area near the project site. In the Decision, the cumulative analysis addressed the incremental effects of the HBEP combined with these projects:

- Poseidon Seawater Desalination Project
- Ascon Landfill Remedial Action Plan
- Demolition of Huntington Beach Generating Station (HBGS) Units 3 and 4
- Demolition of the Plains All American Pipeline Tank Farm

Staff has identified no new projects near the site since publication of the Decision; therefore, no new analysis or changes to the cumulative impact conclusions for the amended HBEP are required.

RESPONSE TO COMMENTS

Written comments on the Visual Resources section of the amended HBEP Preliminary Staff Assessment (PSA) were submitted by Stoel Rives, LLP on behalf of the project owner (Stoel Rives 2016). Comments are summarized and staff's responses are provided below.

AES HUNTINGTON BEACH ENERGY

Comment

The project owner refers to this sentence on page 4.12-26 of the PSA: "The Decision on the licensed HBEP was based on the City's recommended visual design concept." The comment states that the sentence suggests that the Decision found all KOPs potentially significant and that the PSA text is incorrect.

Response

Staff's visual analysis does not state that the Decision found visual impacts at all KOPs to be potentially significant. No change to staff's text is needed.

Comment

*The project owner's general comments on the PSA propose that certain filings and approvals required by the conditions of certification be deemed approved if no action is taken by Energy Commission staff within a specific time frame (Stoel Rives 2016). The project owner requests adding text to Conditions of Certification **VIS-1**, **VIS-2**, **VIS-3**, **VIS-5**, and **VIS-6** to specify a time frame for Energy Commission staff's review of plans submitted by the project owner. The comment states that the project schedule will be significantly impacted if the CPM does not provide timely comments to the project owner.*

Response

Staff declines to add the project owner's suggested automatic approval provisions to Conditions of Certification **VIS-1**, **VIS-2**, **VIS-3**, **VIS-5**, and **VIS-6**. While staff understands the project owner's stated concern regarding their preferred schedule, there is nothing to suggest that the CPM or staff could not—or would not—provide timely comments on the review of plans to the project owner in the regular course of business. Staff is always keenly aware of scheduling issues and routinely works with project owners to ensure that all of the technical areas of each facility are reviewed in a timely manner.

Comment

*Condition of Certification **VIS-1** requires the project owner to prepare and submit the Visual Screening and Enhancement Plan for Project Structures at least 60 calendar days before the start of construction of the amended HBEP. The project owner objects to the timing for submittal of the **VIS-1** plan and requests changing the timing for submittal until after construction of the combined-cycle gas turbine units (CCGT) and support equipment are completed in 2019 or 2020 (Stoel Rives 2016), which is more than 3 years into the construction schedule for the amended HBEP. (Refer to the demolition and construction activity timeline in the **Project Description** section of this staff assessment.)*

Response

The visual screening provided by the architectural sphere walls on the project site are conceptually shown in images provided by the project owner. The screening concept includes three approximately 120-foot-tall sphere walls constructed across the site. The easternmost and middle sphere wall will provide visual screening for the CCGT units (**VR Figure 10**). The third sphere wall near Newland Street and the PCH would provide visual screening for the simple-cycle gas turbine (SCGT) units. These are engineered structures that must be accounted for during project planning and design and not as add-ons to a site where power plant construction is substantially finished. In the visual simulations provided by the project owner, the sphere walls are shown to be installed in areas constrained by power block structures, fire access lanes, and the 50-foot-tall acoustical wall on the eastern area of the project site. As depicted on the conceptual site plan showing the architectural enhancements, the three sphere walls cross the fire access lanes on the project site at several points. In an e-mail to staff on September 14, 2016, the Huntington Beach Fire Department (HBFD) states that access lanes must be maintained “clear to sky” to comply with City Specification No. 401 addressing *Minimum Standards for Fire Apparatus Access* (City of Huntington Beach 2015). The e-mail states that “the HBFD will not accept the screens traveling over the fire department access lanes.” The HBFD recommends that the architectural screens be relocated south of the fire department access lanes (Huntington Beach Fire Department 2016). The **Worker Safety and Fire Protection** section of this staff assessment identifies applicable LORS, including the HBFD’s City Specifications.

Condition of Certification **STRUC-1** in the **Facility Design** section of this staff assessment requires the project owner to submit plans and calculations to the chief building official (CBO) for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications list, including the **VIS-1** plan. The required timing for the **STRUC-1** submittal is 60 days prior to the start of construction. The architectural enhancements that will be addressed in the **VIS-1** plan are engineered structures. Their design and construction will be subject to the California Building Standards Code, and the structures will have substantial requirements for footprint, foundations, maintenance access, and safety and fire clearances.

A revised design of the conceptual architectural screening plan is needed. Therefore, staff recommends adding a requirement to Condition of Certification **VIS-1** for the project owner to submit a *Preliminary Visual Screening and Enhancement Plan for Project Structures* prior to the start of project construction that will demonstrate how the plan will comply with City Specification No. 401 and achieve consistency with the City's adopted Resolution No. 2016-27. The preliminary plan will precede preparation and submittal of a detailed plan prior to the start of commissioning the CCGT units, which is intended to accommodate the project owner's request. Revised requirements for the visual screening and enhancement plan are provided below under Condition of Certification **VIS-1**.

Under "Verification" for **VIS-1**, staff recommends changing the requirement that the **VIS-1** plan be "fully implemented within 180 calendar days of completing demolition of the HBGS and construction of the amended HBEP." Because these project phases are planned for separate years, the timing of this verification requirement could be subject to interpretation. The project owner's proposed schedule for project demolition and construction could change during implementation of the amended HBEP, especially as it pertains to the construction schedule for the SCGT units. To account for potential schedule adjustments, staff recommends changing the timing for verification. To accommodate the project owner's request to postpone submittal of the visual screening plan, staff also recommends adjusting the timing requirement for submittal of a *Detailed Visual Screening and Enhancement Plan for Project Structures* to closer to the start of commissioning the CCGT units. Revised text is added below under "Verification" for Condition of Certification **VIS-1**.

In its comments on maintaining site access, the HBFD requests assurance that the middle sphere wall will not interfere with aerial access to the existing power plant (HBGS Units 1 and 2), which are denoted with gray shading on **VR Figure 10** (Huntington Beach Fire Department 2016). Under "Verification" for **VIS-1**, staff recommends that architectural screening and enhancement of the CCGT units be completed within 12 months of beginning commercial operation of those units, which is planned for the second quarter of 2020. Based on the demolition and construction timeline discussed in the **Project Description**, retirement of HBGS Unit 1 is planned for the fourth quarter of 2019, and retirement of Unit 2 is anticipated by the end of 2020. Assuming this approximate schedule, installation of the middle sphere wall could commence in early 2021, following shut down of HBGS Unit 2, and could be completed reasonably close to the 12-month schedule proposed by staff under **VIS-1**.

Comment

The project owner refers to the text on page 4.12-28 of the PSA requiring submittal of a "physical sample of a plastic sphere" from the City's recommended sphere wall. The comment requests changing the text to instead require submittal of a 6-inch by 6-inch sample of the plastic material that will be used to create the spheres.

Response

Staff has revised the requirements for Condition of Certification **VIS-1** consistent with this comment. Refer to the text changes below under **VIS-1**.

Comment

*Condition of Certification **VIS-2** requires the project owner to prepare and submit the Perimeter Screening and On-site Landscape and Irrigation Plan at least 90 calendar days before the start of site mobilization. The project owner objects to the timing for submittal of the **VIS-2** plan and requests changing the timing for submittal until after construction of the CCGT and support equipment are completed in 2019 or 2020 (Stoel Rives 2016).*

Response

Condition of Certification **VIS-2** addresses requirements for site landscaping and irrigation and design of the 8-foot-tall masonry wall along the site perimeter. **VIS-2** requires the project owner to document the project's conformance with the City's landscape screening and irrigation regulations. Staff agrees that the timing for preparation and submittal of the **VIS-2** plan can be changed as requested by the project owner. Refer to the verification requirements below under Condition of Certification **VIS-2**, which has been edited to require submittal of the **VIS-2** plan at least 90 calendar days before the start of commissioning the CCGT power block. Other minor edits are proposed under "Verification" consistent with the timing change and to clarify timing requirements.

Staff also proposes a minor edit to **VIS-2** to account for potential future changes to applicable LORS addressing landscape and irrigation requirements. Refer to the last bulleted item under **VIS-2** below.

Comment

*Condition of Certification **VIS-5** addresses requirements for permanent lighting for the project and submittal of a Lighting Management Plan for the project. The project owner objects to requiring that the plan address lighting to enhance the aesthetics of the project's architectural screening structures. The project owner's objections relate to potential violations of other requirements under **VIS-5** pertaining to potential light spillage beyond the site, backscatter to the night sky, and energy efficient lighting. The project owner proposes revising the text to state that "[I]f any lighting is proposed for the project's architectural screening structures, all such lighting shall be addressed in the Lighting Management Plan."*

Response

The requirement for nighttime aesthetic lighting has been deleted from the FSA.

CONCLUSIONS AND RECOMMENDATIONS

KOPs were selected to represent primary viewer groups and sensitive viewing locations in a defined area surrounding the project site where adverse visual impacts could occur (Energy Commission 2014b). The KOPs do not represent the only locations where the project site and structures may be prominently visible. For example, although the amended project's prominent structures would not be prominently visible to a viewer looking directly toward the site from KOP 5, the simple-cycle turbine units would be clearly visible from other nearby viewpoints, including nearby areas along Newland Street and the PCH. The architectural screening concept applies to the amended project as a whole and not only to the representative views provided by the KOPs.

The Decision on the licensed HBEP was based on the City's recommended visual design concept. The City has since completed its review of the petitioner's revised architectural design concept. **VR Figures 4 and 7** are included in this staff assessment to show the revised visual screening concept for the amended project. Staff concludes that with implementation of architectural screening for the project that is substantially consistent with the City's Resolution No. 2016-27 supporting the architectural enhancement concept as modified, the amended HBEP would comply with applicable visual resources LORS. Consistent with the Decision on the licensed project, the potentially significant impact at KOP 4 would be reduced to less than significant. No new significant impacts on visual resources would occur under the amended HBEP.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

Staff proposes several modifications to the visual resources conditions of certification published in the Decision for the HBEP (Energy Commission 2014a). These changes are primarily necessary to clarify verification requirements, increase consistency between verification requirements for related conditions of certification, and update content as necessary. A few text changes are recommended to correct mistakes.

Under Condition of Certification **VIS-1**, staff omitted the requirement to submit a Supplement to the Visual Screening and Enhancement Plan for Project Structures (Supplement). This omission is a result of the project owner's request to change submittal of the **VIS-1** plan (i.e., the Detailed Plan discussed above under "Response to Comments") until after construction of the combined-cycle gas turbine units is completed instead of prior to the start of construction. With this timing change, submittal of the Supplement is likely to be unnecessary and duplicative. Also, due to verification timing changes for Conditions of Certification **VIS-1** and **VIS-2**, written status updates are considered unnecessary and have been omitted from those conditions of certification, as shown below.

Modifications are shown in ~~strike-through~~ for deletions and **bold and underline** for additions.

VIS-1 VISUAL SCREENING AND ENHANCEMENT PLAN FOR PROJECT STRUCTURES – PROJECT OPERATION

Prior to the start of construction 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 **Preliminary** Visual Screening and Enhancement Plan for Project Structures (**Preliminary** Plan) that includes methods and materials to visually screen and treat surfaces of publicly visible power plant structures.

The Preliminary Plan shall include:

- Revised general arrangement/site plan to scale showing locations of and corridor spaces for the architectural screens/sphere walls.
- Information on how the architectural screens will comply with City Specification No. 401 and achieve consistency with the City's adopted Resolution No. 2016-27.
- Identity of the design firm that will plan and implement the architectural screening plan.
- Information on how surfaces of the 50-foot-tall acoustical wall, air cooled condenser, and exhaust stacks will be treated to coordinate visually with the architectural screens.
- Visual simulations using key observation points (KOPs) 1, 4, and 5 to accurately represent views of the architectural screens depicted on the site plan.

(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.)

Prior to the start of commissioning the combined-cycle gas turbine (CCGT) units, the project owner shall prepare and submit a Detailed Visual Screening and Enhancement Plan (Detailed Plan) that The submitted Plan will include evidence of review by a California-licensed structural or civil engineer and an assessment of the feasibility and structural integrity of the architectural and decorative screening elements contained in the **Detailed** Plan. The California-licensed engineer shall review and sign the **Detailed** Plan. Any design changes recommended by the California-licensed engineer to ensure the structural soundness and safety of the project and the architectural design elements shall be incorporated in the **Detailed** Plan before its submittal to the **compliance project manager (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 **Detailed** Plan is received from the CPM. Modifications to the final **Detailed** Plan shall not occur without the CPM's approval.

The Visual Screening and Enhancement **Detailed** Plan for Project Structures shall be consistent with **Resolution No. 2016-27 adopted by the City of Huntington Beach City Council recommending visual enhancements for the site**~~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 **Detailed** 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 to the extent practicable while maintaining compliance with **the City's adopted resolution** ~~Resolution No. 2014-18.~~

The **transmission structures** ~~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 **Detailed** Plan shall meet the following minimum content requirements:

- Inventory of major project structures, **sound/acoustical walls**, 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 **an accurately scaled site** plans and elevation views shall be included in the Plan with architectural and project structures clearly identified.
- **Color brochures, color chips, and/or physical samples for each proposed** ~~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, **the exhaust stacks, and the sound wall**). Proposed colors must be identified by vendor, name, and number, or according to a universal designation system. **Electronic files showing proposed colors may not be submitted in place of original samples.**
- **Physical sample of the plastic material that will be used to fabricate the spheres for the City's recommended sphere walls.**
- 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~~ **Detailed** 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 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 **Detailed** 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.~~

Verification: ~~**At least** No more than **60** 45 calendar days **prior to the start of construction** 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 **Preliminary** Visual Screening and Enhancement Plan for Project Structures (**Preliminary Plan**) 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 **Preliminary** Plan to the City of Huntington Beach Planning and Building Department for review and comment.~~

A different time frame for submitting the Preliminary Plan is allowed by agreement between the project owner and the CPM.

~~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. Simultaneously with the submission to the CPM, the project owner shall submit seven copies of the Supplement text and one set of physical samples of paint colors and other surface treatments to the City's Planning and Building Department for review and comment.~~

If the CPM determines that the **Preliminary** Plan and/or its Supplement requires 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 **Preliminary** Plan and/or the Supplement (if either **it** is required) shall be provided to the City for review and comment. City staff requires seven copies of the revised Plan or Supplement.

The project owner shall provide the CPM with copies of the transmittal letters submitted to the City requesting timely reviews of the **Preliminary Plan**, the Supplement, and any revisions. The City shall be allowed 30 calendar days following receipt of the stated plans to provide comments to the project owner and to the CPM ~~within 30 calendar days of receiving any of the stated plans~~. In the absence of comments within that timeframe, or a request from the City for an extension of time, the CPM may deem the **Preliminary Plan**, the Supplement, and any revisions acceptable to the City.

~~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.~~

At least 60 calendar days before the start of commissioning the CCGT units, the project owner shall prepare and submit the Detailed Plan to the CPM for review and approval. The review, comment, and approval process for the Detailed Plan shall be exactly the same as described above for the Preliminary Plan.

~~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 elements pertaining to screening and enhancement of the CCGT units** The Plan shall be fully implemented within **12 months of** 90 calendar days of completing demolition of the Huntington Beach Generating Station Units 1 and 2 **beginning commercial operation of the CCGT units. The Plan elements pertaining to screening and enhancement of the simple-cycle gas turbine (SCGT) units shall be implemented within 12 months of beginning commercial operation of the SCGT units.**

The project owner shall verify in writing when the **Detailed Plan elements pertaining to the CCGT units are** is fully implemented and the facility is ready for inspection. The project owner shall obtain **separate** written confirmations from the CPM that the project complies with the **Detailed** Visual Screening and Enhancement Plan for Project Structures **following completion of Plan elements for the CCGT units and later for the SCGT units.**

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.

VIS-2 PERIMETER SCREENING AND ON-SITE LANDSCAPE AND IRRIGATION PLAN – PROJECT OPERATION

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, 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 shall review and sign 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 minimize new opportunities for raptors to prey on special-status birds in the marsh.

~~Design and submittal of the~~ **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 exterior 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, the Plan shall emphasize the use of evergreen species. 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 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 branch and foliage characteristics that would not be attractive to 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 8-foot-tall decorative masonry walls along the exterior 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 Beach Zoning & Subdivision Ordinance, **including those** as identified in **Visual Resources Appendix-4** of the Final Staff Assessment **for the licensed project.**

Verification: **At least 90 calendar days before the start of commissioning the CCGT units** ~~No more than 45 calendar days after submitting the master drawings and master specifications list to the CBO (in accordance with the requirements of condition of certification GEN-2),~~ 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 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 for review and comment.

The project owner shall provide the CPM with copies of the transmittal letters submitted to the City requesting review of the Plan and any revisions. The City shall be allowed 30 calendar days following receipt of the stated plans to provide comments to the project owner and to the CPM. In the absence of comments within that timeframe, or a request from the City for an extension of time, the CPM may deem the Plan and any revisions acceptable to the City.

~~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 **elements that would screen and/or soften views of areas affected by construction of the CCGT units** shall be fully implemented no less than 60 days before commercial operation of Power Block #1 **within 270 calendar days of beginning commercial operation of the CCGT units.** Similarly, the Plan **elements that would screen and/or soften views of areas affected by construction of the SCGT units shall be implemented within 180 calendar days of beginning commercial operation of the SCGT units.**~~

The project owner shall verify in writing when the Plan **elements for the area affected by construction of the CCGT units are** is fully implemented and the facility is ready for inspection. The project owner shall obtain **separate** written confirmations from the CPM that the project complies with the **Perimeter Screening and On-site Landscape and Irrigation Plan following completion of Plan elements for the CCGT units and later for the SCGT units.** ~~Visual Screening and Enhancement Plan for Project Structures.~~

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.

VIS-3 LONG-TERM CONSTRUCTION SCREENING, LANDSCAPE PROTECTION, AND SITE RESTORATION PLAN – PROJECT DEMOLITION, CONSTRUCTION, AND COMMISSIONING

Prior to the start of site mobilization, the project owner shall prepare and implement a Construction Screening, Landscape Protection, and Site Restoration Plan (**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 property. 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 commencement of construction 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 color images showing options for site perimeter screening materials. 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 Restoration Plan shall describe the methods and schedule for the restoration work to occur.

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 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 ~~the a Construction Screening, Landscape Protection, and Site Restoration Plan~~ to the CPM, the project owner shall submit seven copies of ~~the 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. Seven copies of the revised Plan shall be submitted to the City of Huntington Beach Planning and Building Department for review and comment.

The project owner shall provide the CPM with a copy of the transmittal letter submitted to the City requesting review of the Construction Screening, Landscape Protection, and Site Restoration Plan and any revisions. The City shall be allowed 30 calendar days following receipt of the stated plans to provide comments to the project owner and to the CPM. In the absence of comments within that timeframe, or a request from the City for an extension of time, the CPM may deem the Construction Screening, Landscape Protection, and Site Restoration Plan and any revisions acceptable to the City.

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 construction of the permanent 8-foot-tall masonry wall is ready to begin, 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 will be erected.

Within 30 calendar days of ~~completing construction~~ **beginning commercial operation** of the ~~HBEP power blocks and buildings, including demolition of Huntington Beach Generating Station (HBGS) Units 1 and 2~~ **CCGT units**, 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 **elements pertaining to screening and restoring areas affected by construction of the CCGT units** shall be fully implemented within 180 calendar days of ~~completing demolition and construction~~ **beginning commercial operation of the CCGT units.** **Similarly, the Plan elements pertaining to screening and restoring areas affected by construction of the SCGT units shall be implemented within 180 calendar days of beginning commercial operation of the SCGT units.**

The project owner shall verify in writing that **when** the Plan **elements pertaining to the areas affected by construction of the CCGT units** are is implemented and **the site and** restored areas are ready for inspection. The project owner shall obtain **separate** written confirmations from the CPM that the project complies with the Plan **following completion of Plan elements for the CCGT units and later for the SCGT units.**

VIS-4 LONG-TERM LIGHTING – PROJECT DEMOLITION, CONSTRUCTION, AND COMMISSIONING

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 4~~ **the combined-cycle gas turbine units**,
- construction of ~~Power Block 2~~ **the simple-cycle gas turbine units**, 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.

VIS-5 LIGHTING MANAGEMENT PLAN – PROJECT OPERATION

Prior to purchasing lighting equipment for ~~commercial operation of the HBEP Power Block 4~~ CCGT units, 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 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) or illumination of areas 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.

Verification: At least 90 ~~60~~ calendar days before purchasing permanent lighting equipment for ~~commercial operation of Power Block 4~~ the CCGT units and other project 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 seven copies 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. Seven copies of the revised Lighting Management Plan 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 a copy of the transmittal letters to the City requesting review of the Lighting Management Plan and any plan revisions. The City shall be allowed 30 calendar days following receipt of the stated plans to provide comments to the project owner and to the CPM. In the absence of comments within that timeframe, or a request from the City for an extension of time, the CPM may deem the Lighting Management Plan and any revisions acceptable to the City.

Prior to the start of commercial operation of ~~Power Block 4~~ the CCGT units, the project owner shall notify the CPM in writing that installation of permanent lighting for ~~Power Block 4~~ those units 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.

VIS-6 LIGHTING MANAGEMENT PLAN, REVIEW AND LETTER REPORT – PROJECT OPERATION

Prior to purchasing lighting equipment for ~~commercial operation of the HBEP Power Block 2~~ SCGT units, 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 project owner shall not purchase or order any permanent lighting for ~~Power Block 2~~ **the SCGT units** 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~~ **the SCGT units**.

Verification: At least ~~90~~ 60 calendar days before **purchasing permanent lighting equipment for commercial operation of Power Block 2 the SCGT units and other project structures**, the project owner shall submit the Plan review and letter report to the CPM for review and approval. Simultaneously with the submission of the Plan review and letter report to the CPM, the project owner shall submit 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.~~

The project owner shall provide the CPM with a copy of the transmittal letter requesting the City's review of the Plan review and letter report. The City shall be allowed 30 calendar days following receipt of the stated ~~P~~plant to provide comments to the project owner and to the CPM. In the absence of comments within that timeframe, or a request from the City for an extension of time, the CPM may deem the letter report acceptable to the City.

Prior to the start of commercial operation of ~~Power Block 2~~ **the SCGT units**, 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.

REFERENCES

AES 2015a — AES Southland Development, LLC, *Petition to Amend, Huntington Beach Energy Project (12-AFC-02C)*, September 2015. Pages 2-13 and 5.13-1 to 5.13-10. Figures 2.1-2, 2.1-3a to 2.1-3d, and 5.13-1 to 5.13-7. Appendix 5.13A. (TN #206087) Submitted to the Energy Commission by AES Southland Development with technical assistance from CH2MHILL.

AES 2015b — AES Southland Development, LLC, Data Responses, *Set 1A (Response to Data Requests 1 to 74) (12-AFC-02C)*, December 4, 2015. Pages 22 to 23 and 36 to 45 (TN #206858) Submitted to the Energy Commission by AES Southland Development with technical assistance from CH2MHILL.

AES 2016 — AES Southland Development, LLC, Conceptual Design Plan – Status Update. March 16, 2016, letter from Stoel Rives, LLP, Sacramento, CA. transmitting the City of Huntington Beach Design Review Board March 10, 2016, Notice of Action on the Application No. 16-004, AES Energy Project – Visual Screening. (TN #210763).

City of Huntington Beach 2014 — Resolution No. 2014-18. A Resolution of the City Council of City of Huntington Beach Supporting Proposed Architectural Improvements as Modified and Approximate 125-foot-high Structures Related to the Reconstruction of the Huntington Beach Energy Project (11-3122/107796.doc). (TN #202084) Passed and adopted by the City Council of the City of Huntington Beach at a regular meeting thereof held on the 7th day of April, 2014.

City of Huntington Beach 2015 — City Specification No. 401, Reference to California Fire Code Section 503, Huntington Beach Fire Department, *Minimum Standards for Fire Apparatus Access*. Pages 1 and 7. November 2015 (Replaces September 2004). Available:
http://www.huntingtonbeachca.gov/government/departments/fire/fire_prevention_code_enforcement/fire_dept_city_specifications.cfm. Accessed August 22, 2016.

City of Huntington Beach 2016 — Resolution No. 2016-27. A Resolution of the City Council of the City of Huntington Beach Supporting Proposed Architectural Improvements as Modified and Approximate 150-foot-high Structures Related to the Reconstruction of the Huntington Beach Energy Project (16-5228/135252). (TN #212380) Passed and adopted by the City Council of the City of Huntington Beach at a regular meeting thereof on the 2nd day of May, 2016.

Energy Commission 2014a — *Huntington Beach Energy Project, Final Decision*, November 2014. Section E, Visual Resources on pages 6.5-1 to 6.5-32; Visual Resources Figures 1 through 14b; and pages APP-149 to APP-163 (TN #203309) Publication #CEC-800-2014-001-CMF, Docket #12-AFC-02.

Energy Commission 2014b — *Huntington Beach Energy Project, Final Staff Assessment*, May 2014. Pages 4.12-1 to 4.12-64, Figures 1 to 23, Appendices 1 to 4 and Attachment 1 (TN #202405) Publication #CEC-700-2013-002-FSA, Docket #12-AFC-02.

Huntington Beach Fire Department 2016 — Huntington Beach Fire Department Code Question. E-mail from Steve Eros, Fire Protection Analyst, on the HBFD's comments and requests pertaining to the conceptual architectural screening plan for the amended HBEP. September 14, 2016. TN # 213867.

Stoel Rives 2016 — Huntington Beach Energy Project – Petition to Amend (12-AFC-02C), Project Owner's Comments on the Preliminary Staff Assessment. Submitted to the Energy Commission on behalf of AES Huntington Beach Energy, LLC, July 21, 2016. Prepared by Stoel Rives, LLP, Sacramento, California.

APPENDIX VR-1: VISIBLE PLUME MODELING ANALYSIS

Wenjun Qian, Ph.D., P.E.

INTRODUCTION

The following provides the assessment of visible plumes for the proposed new GE7FA.05 combined-cycle turbines with heat recovery steam generators (HRSGs), GE LMS100PB simple-cycle turbines, and auxiliary boiler exhaust stacks for the Amended Huntington Beach Energy Project (HBEP). Staff completed a modeling analysis for the project owner proposed new gas turbines/HRSG and auxiliary boiler.

The Amended HBEP would be a natural-gas-fired, combined-cycle and simple-cycle, air-cooled electrical generating facility located on the site of the existing Huntington Beach Generating Station (HBGS) in Huntington Beach, California. The combined-cycle power block would consist of a two-on-one combined-cycle unit – two GE Frame 7FA.05 gas turbines, two unfired HRSGs, one steam turbine generator, one air-cooled condenser, one natural-gas-fired auxiliary boiler, and related ancillary equipment. The simple-cycle power block would include two GE LMS100 simple-cycle turbines and their separate ancillary equipment. The Amended HBEP would use dry cooling that would have no potential to create visible water vapor plumes.

SUMMARY OF THE DECISION

On October 29, 2014, the Energy Commission approved the HBEP as a 939 MW (nominal output) combined cycle power plant with two power blocks. Each power block would consist of three Mitsubishi Heavy Industries 501DA gas turbine generators coupled with one steam turbine, in a combined cycle configuration. The Final Commission Decision (CEC 2014bb) of HBEP concluded that power plants like the licensed HBEP produce high velocity, high temperature exhausts that disperse quickly, thereby minimizing the probability that visible plumes would form above the stacks. Therefore, Final Commission Decision concluded that no impact on visual resources would occur pertaining to formation of visible plumes from the licensed HBEP.

VISIBLE PLUME MODELING METHODS

PLUME FREQUENCY AND DIMENSION MODELING

The Combustion Stack Visible Plume (CSVP) model was used to estimate visible plume frequency for the gas turbines/HRSGs and auxiliary boiler. This model provides conservative estimates of visible plume frequency. This model utilizes hourly stack exhaust parameters and hourly ambient condition data to determine the visible plume frequency. This model is based on the algorithms of the Industrial Source Complex model (Version 2), that determine conditions at the plume centerline, but this model does not incorporate building downwash. Wind speeds are set to 1 m/s to represent calm hours.

CLOUD COVER DATA ANALYSIS METHOD

A plume frequency of 20 percent of seasonal (November through April) daylight no rain/fog high visual contrast (i.e. “clear”) hours is used as a plume impact study threshold trigger and to determine potential plume impact significance. The high visual contrast hour determination methodology is provided below:

The Energy Commission staff has identified a “clear” sky category during which plumes have the greatest potential to cause adverse visual impacts. For this project the meteorological data set² used in the analysis categorizes sky cover in 10% increments. Staff has included in the “Clear” category a) all hours with sky cover equal to or less than 10% plus b) half of the hours with total sky cover 20-90%. The rationale for including these two components in this category is as follows: a) plumes typically contrast most with sky under clear conditions and, when total sky cover is equal to or less than 10%, clouds either do not exist or they make up such a small proportion of the sky that conditions appear to be virtually clear; and b) for a substantial portion of the time when total sky cover is 20-90% and the opacity of sky cover is relatively low (equal to or less than 50%), this sky cover does not always substantially reduce contrast with plumes; staff has estimated that approximately half of the hours meeting the latter sky cover criteria can be considered high visual contrast hours and are included in the “clear” sky definition.

If it is determined that the seasonal daylight clear hour plume frequency is greater than 20 percent then plume dimensions are determined, and a significance analysis of the plumes is completed.

AMENDED HBEP VISIBLE PLUME MODELING ANALYSIS

GE 7FA.05 TURBINES/HRSGS PARAMETERS

Based on the stack exhaust parameters anticipated by the project owner (HBEP 2015a), the frequency of visual plumes can be estimated. The operating data for the GE 7FA.05 combined-cycle turbines/HRSGs stacks during full loads and average loads are provided in **Visible Plume Table 1**. The project owner anticipates each of the GE 7FA.05 combined-cycle turbines/HRSGs would operate up to 6,100 hours per year at steady state, plus 500 startups and 500 shutdowns (HBEP 2015a).

Staff noticed that the exhaust temperatures for the proposed new GE 7FA.05 turbines/HRSGs (from 216°F to 221°F at full loads) would be lower than the exhaust temperatures (from 358°F to 394°F at full loads [HBEP 2012a]) for the Mitsubishi Heavy Industries 501DA turbines approved by the Energy Commission in 2014. Therefore, staff expects the visual plume potential for the proposed new GE 7FA.05 turbines/HRSGs would be higher than that for the approved Mitsubishi Heavy Industries 501DA turbines.

² This analysis uses five-year (2010 through 2014) AERMET data at John Wayne Airport station, provided by the project owner for the air quality impact analysis. Staff processed and reformatted the data according to the data requirements of CSVP.

Visible Plume Table 1 shows that there would be up to 38°F difference in the stack exhaust temperatures between the full-load (230 MW nominal) and average-load (172.5 MW [75 percent load]) cases for the GE 7FA.05 turbines/HRSGs. However, there would not be much reduction in water contents. Staff expects that the average-load cases would result in more visible plume potential than the full-load cases for the proposed GE 7FA.05 turbines/HRSGs. In order to make sure the worst-case visible plume impacts are analyzed, staff has performed visible plume modeling analysis for both the full-load cases and the average-load cases.

Visible Plume Table 1
GE 7FA.05 Turbines/HRSGs Operating and Exhaust Parameters ^a

Parameters	GE Frame 7FA.05					
Stack Height (Feet)	150					
Stack Diameter (Feet)	20					
Ambient Temperature (°F)	32 (low)		65.8 (average)		110 (high)	
Ambient Relative Humidity	87%		58%		8%	
Operating Loads	Full	Average	Full	Average	Full	Average
Exhaust Temperature (°F)	216	178	213	175	221	198
Exhaust Moisture Content (% Mole Basis)	8.21	8.03	9.23	8.77	9.37	8.14
Exhaust Moisture Content (% by Weight) ^b	5.20	5.08	5.86	5.56	5.96	5.15
Exhaust Flow Rate (1000 lbs/hr)	4,360	3,523	4,302	3,381	4,268	3,042
Exhaust Average Molecular Weight	28.44	28.45	28.33	28.37	28.29	28.43

Source: HBEP 2015a and independent staff analysis

Notes:

^a Values were extrapolated or interpolated between hourly ambient condition data points as necessary.

^b Staff calculated the moisture content (% by weight) based on project owner provided data for moisture content (% by volume) and Molecular Weight.

GE 7FA.05 TURBINES/HRSGS VISIBLE PLUME MODELING ANALYSIS

Staff modeled the GE 7FA.05 turbines/HRSGs plumes using the CSVP model with a five-year (2010-2014) John Wayne meteorological data set. **Visible Plume Table 2** provides the CSVP model visible plume frequency results for full-load and average-load operations.

Since the plume frequency would be well below 20% of the seasonal (November through April) daylight clear hours for the operation of the GE 7FA.05 turbines/HRSGs, the corresponding plume dimensions were not estimated.

Visible Plume Table 2
Staff Predicted Hours with GE 7FA.05 Turbines/HRSGs Steam Plumes
John Wayne 2010–2014 Meteorological Data

Case	Available (hr)	Full Loads		Average Loads	
		Plume (hr)	Percent	Plume (hr)	Percent
All Hours	43,681	1	0.0%	144	0.3%
Daylights Hours	20,315	0	0.0%	12	0.1%
Daylight No Rain No Fog	20,107	0	0.0%	12	0.1%
Seasonal Daylight Hours*	9,136	0	0.0%	12	0.1%
Seasonal Daylight No Rain No Fog*	8,963	0	0.0%	12	0.1%
Seasonal Daylight Clear**	4,620	0	0.0%	3.5	0.1%

*Seasonal conditions occur anytime from November through April.

**Available hours based on seasonal daylight clear hours.

AUXILIARY BOILER PARAMETERS

The operating data for the auxiliary boiler stack during full load are provided in **Visible Plume Table 3**. The project owner estimated the annual emissions of the auxiliary boiler based on a conservative assumption of 8,760 hours of operation with 120 startups per year. However, staff expects that the auxiliary boiler would be operated much less than 8,760 hours per year because the purpose of the auxiliary boiler is to provide startup steam for the combined-cycle power block.

Visible Plume Table 3
Auxiliary Boiler Operating and Exhaust Parameters

Parameters	Auxiliary Boiler
Stack Height (Feet)	80
Stack Diameter (Feet)	3
Full Load Exhaust Temperature (°F)	318
Full Load Exhaust Moisture Content (% by weight)	10.03
Full Load Exhaust Volumetric Flow Rate (acfm)	29,473
Full Load Exhaust Mass Flow Rate (1000 lbs/hr) ^a	90
Full Load Exhaust Average Molecular Weight (% mole)	28.21

Source: HBEP 2015i and independent staff analysis

Notes:

^a Staff calculated the exhaust flow rate in 1000 lbs/hr based on project owner provided data volumetric flow rate and exhaust temperature.

AUXILIARY BOILER VISIBLE PLUME MODELING ANALYSIS

Staff modeled the auxiliary boiler plumes using the CSVP model with a five-year (2010-2014) John Wayne meteorological data set. **Visible Plume Table 4** provides the CSVP model visible plume frequency results for the auxiliary boiler.

Visible Plume Table 4
Staff Predicted Hours with Auxiliary Boiler Steam Plumes
John Wayne 2010–2014 Meteorological Data

Case	Available (hr)	Plume (hr)	Percent
All Hours	43,681	104	0.2%
Daylights Hours	20,315	10	0.0%
Daylight No Rain No Fog	20,107	10	0.0%
Seasonal Daylight Hours*	9,136	10	0.1%
Seasonal Daylight No Rain No Fog*	8,963	10	0.1%
Seasonal Daylight Clear**	4,620	3.0	0.1%

*Seasonal conditions occur anytime from November through April.

**Available hours based on seasonal daylight clear hours.

Since the plume frequency would be well below 20% of the seasonal (November through April) daylight clear hours for the operation of the auxiliary boiler, the corresponding plume dimensions were not estimated.

VISIBLE PLUME POTENTIAL FOR GE LMS100PB TURBINES

Staff also reviewed the visible plume potential for the GE LMS100PB simple-cycle turbines. Based on the project owner provided exhaust gas characteristics and ambient air conditions (HBEP 2015a), staff concludes that there would be no visible water vapor plume potential for the GE LMS100PB simple-cycle turbines.

CONCLUSIONS

Visible water vapor plumes from the proposed new GE 7FA.05 turbines/HRSGs and the auxiliary boiler are expected to occur very infrequently, well below 20 percent of seasonal daylight clear hours. It would be unlikely that visible plumes would form above the GE LMS100PB simple-cycle turbines exhaust stacks. Therefore, no further visual impact analysis of the expected plume dimensions has been completed.

REFERENCES

CEC 2014bb — Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

HBEP 2012a — AES Southland Development, LLC / Stephen O’Kane (TN 66003). Application for Certification (AFC), Volume I & II, dated, 06/27/2012. Submitted to CEC/Dockets on 06/27/2012.

HBEP 2015a — Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

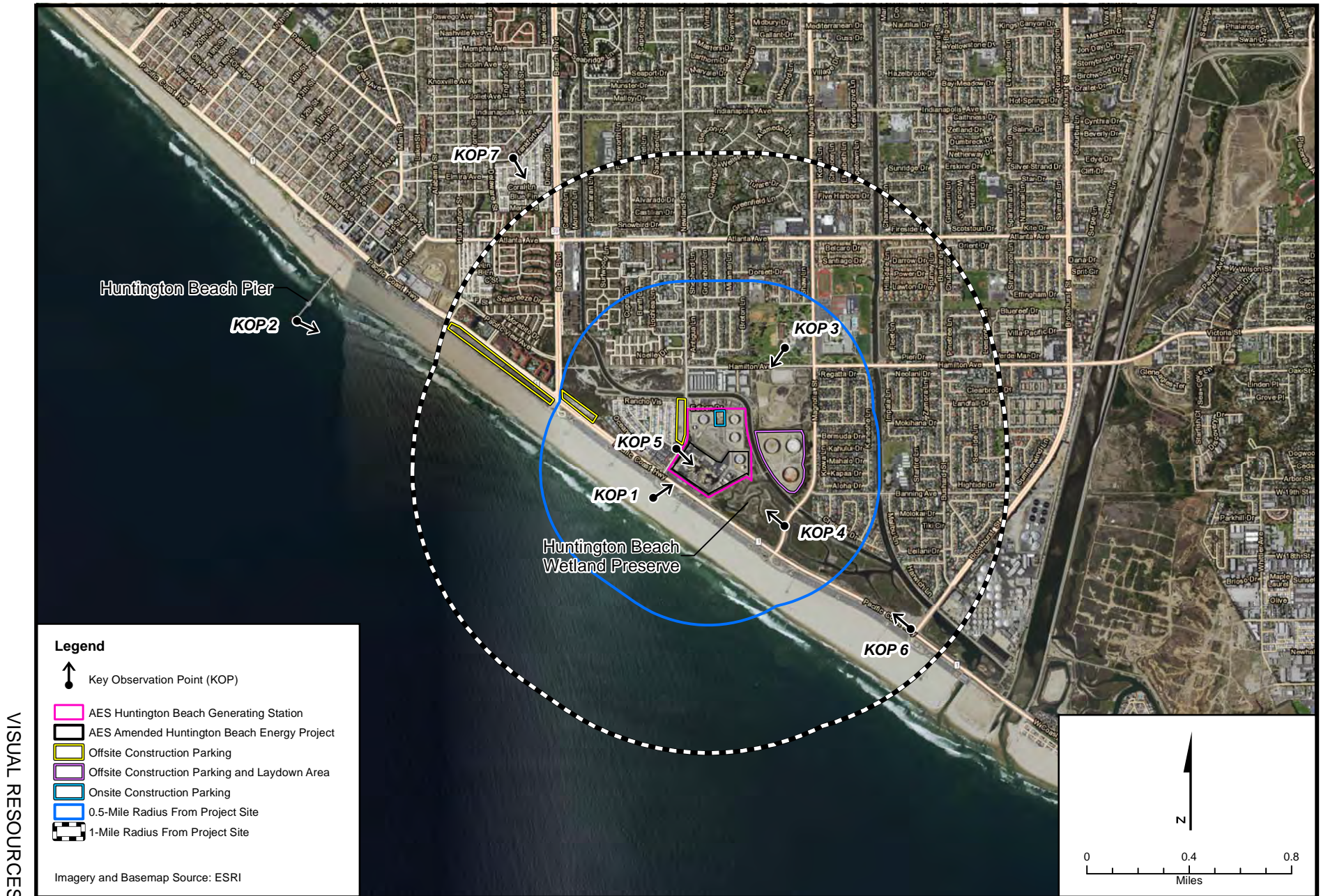
HBEP 2015i — Data Responses, Set1 (Responses to Data Request 1-74) (TN 206858). Submitted to CEC/Docket Unit on December 7, 2015.

VISUAL RESOURCES ATTACHMENT-1

Complaint Report and Resolution Form

Facility Name: Amended 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: If not, explain: Additional relevant information:	
If corrective action necessary, date completed: <div style="display: flex; justify-content: space-between;"> <div>Date of first response to complainant:</div> <div>(attach copy)</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Date of final response to complainant:</div> <div>(attach copy)</div> </div>	
This information is certified to be correct: Power plant or project manager's signature:	
Date:	

VISUAL RESOURCES - FIGURE 1
 Amended Huntington Beach Energy Project - Project Site and Key Observation Points



VISUAL RESOURCES - FIGURE 2

Amended Huntington Beach Energy Project - KOP 1 - City of Huntington Beach Recommended Architectural Improvements for the Licensed HBEP



VISUAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Energy Commission 2014a

VISUAL RESOURCES - FIGURE 3

Amended Huntington Beach Energy Project - KOP 1 - Proposed Amended HBEP



VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 4

Amended Huntington Beach Energy Project - KOP 1 – Modified Architectural Enhancements Recommended by the City of Huntington Beach



VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 5

Amended Huntington Beach Energy Project - KOP 4 – City of Huntington Beach Recommended Architectural Improvements for the Licensed HBEP



VISUAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Energy Commission 2014a

VISUAL RESOURCES - FIGURE 6

Amended Huntington Beach Energy Project - KOP 4 - Proposed Amended HBEP



VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 7

Amended Huntington Beach Energy Project - KOP 4 - Modified Architectural Enhancements Recommended by the City of Huntington Beach



VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 8

Amended Huntington Beach Energy Project - KOP 5 – City of Huntington Beach Recommended Architectural Improvements for the Licensed HBEP



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.

VISUAL RESOURCES - FIGURE 9

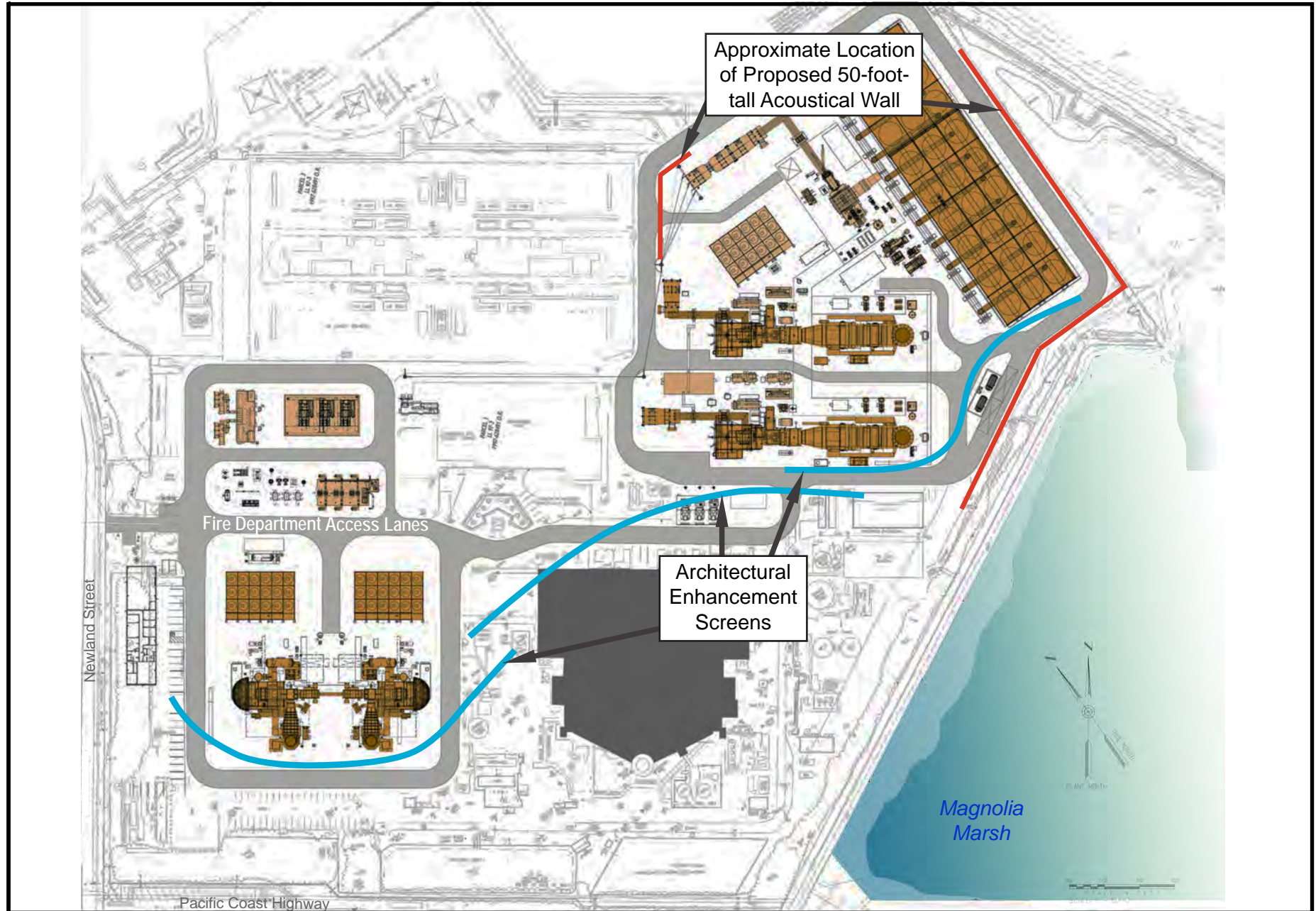
Amended Huntington Beach Energy Project - KOP 5 - Proposed Amended Project



VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 10

Amended Huntington Beach Energy Project - Site Plan for Modified Architectural Enhancement Concept



VISUAL RESOURCES

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Adapted from TN #210763

WASTE MANAGEMENT

Testimony of Ellen Townsend-Hough

SUMMARY OF CONCLUSIONS

The Petition to Amend (PTA) Huntington Beach Energy Project (HBEP) proposes to modify the project, resulting in changes to an existing Waste Management condition of certification. Similar to the conclusions in the licensed HBEP 2014 Energy Commission Final Decision (Decision), the potential impacts of the proposed PTA would be less than significant if mitigated in accordance with the adopted conditions of certification. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the 2014 Decision is necessary for Waste Management. The Committee may rely upon the environmental analysis and conclusions of the Commission Decision with regards to Waste Management and does not need to re-analyze them.

The city of Huntington Beach would be responsible for waste conservation programs within the city's limits. Therefore Condition of Certification **WASTE-5** would be modified to have the project owner provide a Construction and Demolition Debris Waste Reduction and Recycling Plan to the compliance project manager (CPM) and the city of Huntington Beach.

As with the HBEP Decision, the amount of waste generated by the HBEP would not significantly impact nonhazardous or hazardous landfill capacity. As with the licensed HBEP, the amended HBEP would be consistent with the applicable waste management laws, ordinances, regulations, and standards (LORS), if staff's approved conditions of certification are implemented.

INTRODUCTION

In this section, Energy Commission staff discusses potential impacts of the proposed amendment in relation to waste management. The purpose of this analysis is to determine whether the PTA project would require new mitigation or modified Waste Management conditions of certification.

SUMMARY OF THE DECISION

The HBEP Decision did not find any immitigable impacts to waste management. The Decision required Conditions **WASTE-1** through **WASTE-8** to account for the different types of wastes that would be generated during the construction and operation of the proposed project and must be managed appropriately to minimize the potential for adverse human and environmental impacts. The Decision assesses the adequacy of the waste management plan with respect to handling, storage and disposal of these wastes. The Waste Management analysis also evaluated the likelihood the project site contains hazardous waste.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

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

Applicable Law	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, §§ 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 Law	Description
<p>Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes</p>	<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>
<p>Title 49, CFR, Parts 172 and 173</p> <p>Hazardous Materials Regulations</p>	<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>
<p>State</p>	
<p>California Health and Safety Code, Chapter 6.5, §§ 25100, et seq.</p> <p>Hazardous Waste Control Act of 1972, as amended</p>	<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>
<p>Title 22, California Code of Regulations (CCR), Division 4.5</p> <p>Environmental Health Standards for the Management of Hazardous Waste</p>	<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. 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>

Applicable Law	Description
	<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 (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 Law	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 Law	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 418). Aboveground Storage Tanks (City Spec 425), Soil Cleanup Standards (City Specs 431-92)	The Huntington Beach Fire Department administers the Hazardous Waste, Underground Storage Tank, and Aboveground Petroleum Storage Tank programs

Applicable Law	Description
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.

Updated LORS that would apply to HBEP since the licensing of HBEP in 2015 are briefly described below.

Laws, Ordinances, Regulations, And Standards

Huntington Beach C&D Ordinance Section 8.21	Construction and Demolition (C&D) Debris Re-Use and Recycling Program. Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous C&D or meet a local C&D ordinance.
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Additional information can be found at:

<http://www.huntingtonbeachca.gov/files/users/building/C-and-D-Recycling-Worksheet.pdf>

Management of wastes generated during construction and operation of the HBEP would not result in any significant adverse impacts and would comply with applicable waste management laws, ordinances, regulations, and standards if the measures proposed in the PTA and staff's proposed conditions of certification are implemented.

Construction and demolition waste can be a significant portion of a jurisdiction's waste stream, and diverting it from landfills can help jurisdictions achieve and maintain their diversion goals established by AB939. Effective January 1, 2014, CALGreen mandates that permitted non-residential building construction, demolition, and certain additions and alteration projects recycle, and/or salvage for reuse, a minimum 50 percent of the nonhazardous C&D debris generated during the project (CALGreen Sections 5.408, 301.1.1, and 301.3). To comply with this new law, Condition of Certification **WASTE-5** has been modified to require the project owner to provide a C&D Debris Waste Reduction and Recycling Plan to the CPM and the city of Huntington Beach Department of Planning and Building.

ENVIRONMENTAL IMPACT ANALYSIS

Staff reviewed the HBEP PTA to determine whether there are any potential new impacts that are not analyzed in the original project license. Staff has conducted the necessary analysis to determine whether a change, addition, deletion, or new condition of certification would be necessary to address potential impacts. The evaluation of the proposed project and the mitigation measures are intended to reduce the risks and environmental impacts associated with handling, storing and disposing of waste.

On October 29, 2014 the Energy Commission issued the Decision authorizing AES Southland, LLC, to construct and operate the HBEP, a nominal 939-megawatt (MW) natural gas-fired, combined-cycle, air-cooled, electrical generating facility on a 28.6-acre site. AES Southland, LLC, filed the PTA September 14, 2015. The petition proposes to replace the original project with an 844-MW nominal capacity facility at the Huntington Beach site. The proposed changes are outlined in **Waste Management Table 2**. **Waste Management Table 2** provides a limited comparison of the licensed HBEP project to the proposed HBEP PTA (HBEP 2015b page 2-2). For a complete description of the PTA refer to the HBEP **Project Description**.

Waste Management Table 2
Licensed vs. Amended Huntington Beach Features Potentially Impacting Waste Management

Feature	Licensed HBEP (939 MW)	Amended HBEP (844 MW)
Power Production	Power Block 1: 3 combustion turbine generators, 3 supplemental-fired heat recovery steam generators, 1 steam turbine generator, air cooled condenser	Power Block 1: two combustion turbine generators, 2 heat recovery steam generators (no supplemental firing), 1 steam turbine generator, air cooled condenser
	Power Block 2: 3 combustion turbine generators, 3 heat recovery steam generators, 1 steam turbine generator, air cooled condenser, and an auxiliary boiler	Power Block 2: two simple-cycle combustion turbines
Project footprint	28.6 acres	30 acres
Area of temporary construction laydown and parking	1.9 acres	22 acres
Demolition of Units 1 & 2	Existing units demolished to their foundation	Demolish existing units down to the steam turbine deck

Sources: CEC 2015b, HBEP 2015a page 5.14-2, HBEP 2015F, HBEP 2015G

HBEP PTA would construct Power Block 1 and Block 2 in similar locations as the licensed project. The construction of amended Block 1 would require the demolition of Huntington Beach Generating Station (HBGS) retired Unit 5 (a retired combustion turbine generator unit) and two former oil tanks. To build Block 2, HBGS Units 3 and 4 would be demolished. HBGS Units 1 and 2, associated fuel oil pipelines, and containment berms would also be demolished. Existing HBGS Units 3 and 4 were licensed through California Energy Commission license 00-AFC-13C and are not part of the HBEP PTA definition. Demolition of Units 3 and 4 would occur irrespective of HBEP (PTA page 2-12).

SITE CONDITIONS

The proposed project site would be located within the existing HBGS site on 30 acres at 21730 Newland Street, in Huntington Beach, Orange County, California. HBGS is a highly disturbed industrial brownfield site. HBGS currently consists of five units. Units 1 and 2 are in operation. Units 3 and 4 were decommissioned in 2012 and converted to synchronous condensers¹, and Unit 5, a peaking unit, was retired in 2002.

The Huntington Beach Generating Station Phase I Environmental Site Assessment (ESA) report for the slightly larger 30-acre site concluded that a number of Recognized Environmental Conditions, Historical Recognized Environmental Conditions, and De Minimis Conditions are present at the existing site (HBEP 2012a Volume II). They are as follows:

- Plugged oil and gas wells both onsite and adjacent to the east;
- Known contamination below existing aboveground storage tanks (Plains America tanks), distillate tank, and presence of fuel pipelines onsite;
- Groundwater below the site affected by metals, volatile organic compounds (VOC), and 1,4-dioxane;
- Former extensive use of fuel oil;
- Former use of concrete degreasing pits;
- Former use of polychlorinated biphenyl -containing oil and suspected transformer oil;
- Large number of recorded underground storage tanks onsite without removal or closure documentation; and
- Known groundwater contamination on adjacent property to the north.

All of these site conditions are the same as those identified in the Phase I assessment for the 28.6 acre site in the original analysis. The main environmental concerns discussed in the ESA were the presence of asbestos containing buildings, lead based paint, and soil and water contaminated with VOCs. The project owner is currently in discussions with the Department of Toxic Substances Control Chatsworth Office to identify, quantify, and remediate past contamination issues at the HBGS (HBEP 2012n Data Request 69). Existing and discovered contamination would be remediated prior to the construction of HBEP (HBEP 2012n Data Response 70).

¹ Synchronous condensers provide voltage support to the grid, but do not generate electricity.

Demolition would begin with the decommissioned Unit 5 peaker, the east fuel oil storage tank, the JP4 storage tank, the fuel oil pipelines and berms (HBEP 2015a page 2-12). HBEP Block 1, the combined cycle units, would be constructed where Unit 5 and the two fuel oil storage tanks are located. HBEP Block 2, the two 100-MW simple-cycle units, would be constructed where HBGS Units 3 and 4 are located (HBEP 2015e page 2-1). HBGS Units 3 and 4 were licensed as part of the Huntington Beach Generating Station Modernization Project (00-AFC-13C) and their demolition is not considered part of the HBEP (HBEP 2015e page 2-1). Unit 1 would be retired to make room for interconnection capacity for the combined-cycle plant. Unit 2 would be demolished after the construction of the simple-cycle units (HBEP 2015e page 2-1).

The Huntington Beach Fire Department provided a comment letter, dated November 17, 2015, to the Energy Commission outlining the city's waste management code requirements for HBEP (CHB 2015a TN 206751). The Huntington Beach codes are called City Specifications. The project would be required to comply with certain specifications prior to obtaining building permits or start grading on the project site. Below is a description of the Waste Management City Specifications that apply.

- Due to the underlying oil reserves and possibility of the production of methane gas in native soils, the site and surrounding area has been mapped as being within a Methane Overlay District. Development within a Methane Overlay District must abide by the city of Huntington Beach Methane District Building Permit Requirements, City Specification 429, Methane District Building Permit, would be required. The City of Huntington Beach recommends not building structures over or near abandoned oil wells or hydro carbon contaminated soil. If abandoned wells can be proven safe and or hydro carbon contaminated soils conform to Huntington Beach Soil Cleanup Standard 431-92, construction may be allowed at the discretion of the Fire Chief.
- City Specification 431-21 is the Soil Quality Standard. In an attempt to restore hydrocarbon contaminated soil to a clean condition, meeting the environmental requirements listed within this specification, and to protect the health and safety of the community, the city of Huntington Beach maintains a standard for soil quality.
- City Specification 427 is the General Closure Requirement for Aboveground Hazardous Material Storage Facilities. Closure is required to ensure that no hazardous materials remain at a facility that could create public safety, environmental or health hazards.

Given the Recognized Environmental Concerns and Historical Recognized Environmental Conditions described above, Condition of Certification **WASTE-1** ensures that the project site is adequately investigated, characterized, and remediated as necessary, when areas of contamination are discovered. Condition of Certification **WASTE-1** specifies that the appropriate agencies be contacted and that all the appropriate documentation be provided to the Energy Commission CPM, DTSC, the Huntington Beach Fire Department, and Orange County.

Furthermore, Conditions of Certification **WASTE-3** and **WASTE-4** address any soil contamination encountered during project demolition and/or 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.

The demolition of HBGS Unit 5 and the fuel tanks, and the construction of Block 1 and Block 2, would produce a variety of mixed wastes, such as soil, wood, metal, and concrete, etc. Units 3 and 4 are subject to the Energy Commission's compliance oversight in 00-AFC-13C, and would be included in the Cumulative Impact analysis. The hazardous waste generated during this phase of the project would consist of asbestos debris, heavy metal dust, used oils, universal wastes, solvents, and empty hazardous waste material containers (HBEP 2012a, § 5.14.4).

Operation and maintenance of the plant and associated facilities would generate a variety of wastes, including a small quantity of hazardous wastes. To control air emissions, the project's turbine units would use selective catalytic reduction and oxidation catalyst equipment and chemicals, which generate both solid and hazardous waste. Waste would be recycled where practical and non-recyclable waste would be deposited in a Class III landfill.

DEMOLITION AND CONSTRUCTION IMPACTS AND MITIGATION

The HBEP facility would generate nonhazardous and hazardous waste that would add to the total waste generated in Orange County. The PTA does not include information on the amount of waste that would be generated by the amended HBEP. The PTA states that the amount of waste to be generated by the project would be slightly less or similar to the licensed HBEP (page 5.14-2). The types and volume of nonhazardous and hazardous wastes generated during demolition and construction waste would be slightly less for the PTA than what was analyzed for the licensed HBEP for the following reasons:

- The licensed HBEP assumed that existing Huntington Beach Generating Station Units 1 and 2 were demolished to their foundations. The amended HBEP proposes to demolish the existing Units 1 and 2 to the steam turbine deck, thus resulting in less demolition waste generated (HBEP 2015e, page 5.14-2).
- The amended HBEP consists of one combined-cycle power block and one simple-cycle power block, resulting in less construction waste generated (HBEP 2015e, page 5.14-2).

Staff concurs with this analysis and uses the more conservative estimates of the amount of nonhazardous and hazardous waste generated from the licensed HBEP to determine if the PTA would produce significant impacts.

Waste Management Table 3 provides an estimate of the amount of waste the licensed HBEP would generate.

**Waste Management Table 3
Licensed HBEP Waste Totals**

	Nonhazardous	Hazardous
Demolition	26,749 tons	1,205 tons
Construction	398 tons	8 tons
Operation	39 tons/year	
Recycle		
concrete	2,350 tons	
metal	22,000 tons	

Source: HBEP 2012a, page 5.14-13

Site preparation, demolition, and construction of the proposed power plant and associated facilities would generate both nonhazardous and hazardous wastes in solid and liquid form. Before demolition and construction can begin, the project owner would be required to develop and implement a C&D Waste Reduction and Recycling Plan, per proposed Condition of Certification **WASTE-5**.

Nonhazardous Wastes

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.

Adoption of Condition of Certification **WASTE-5** would facilitate proper management of project demolition and construction wastes since the city of Huntington Beach maintains a C&D Reduction and Recycling program. Staff proposes Condition of Certification **WASTE-5** requiring the project owner to develop and implement a C&D Waste Reduction Plan and submit copies of C&D paperwork to the CPM and the city of Huntington Beach. These conditions would require the applicant to identify type, volume, and waste disposal and recycling methods to be used during construction of the facility. Staff believes that compliance with proposed Condition of Certification **WASTE-5** would assist 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, 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. Please see the **Soil and Water Resources** section of this document for more information on the management of project wastewater.

Hazardous Wastes

The hazardous waste generated would include: asbestos waste, electrical equipment, used oils, universal wastes and lead-acid storage batteries (HBEP 2012a page 5.14-13). Demolition of Units 1, 2 and 5, which is the same as the licensed HBEP, would generate 700 tons of asbestos that would be disposed of in a permitted facility (HBEP 2012n, Data Request 71). 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 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 (HBEP 2012a, § 5.14.1.2.2).

Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner would be required by proposed Condition of Certification **WASTE-6** to notify the Energy Commission's CPM whenever the owner becomes aware of any such action.

In the event that construction excavation, grading, or trenching activities for the proposed project encounter potentially contaminated soils and/or specific handling, disposal, and other precautions that may be necessary pursuant to hazardous waste management LORS, staff finds that proposed Conditions of Certification **WASTE-3** and **WASTE-4** would be adequate to address any soil contamination contingency that may be encountered during construction of the project and would ensure compliance with LORS. Absent any unusual circumstances, staff considers project compliance with LORS to be sufficient to ensure that no significant impacts would occur as a result of project waste management activities.

OPERATION IMPACTS AND MITIGATION

The types and volume of wastes generated during operation of the PTA would be the same or less than what was analyzed for the licensed HBEP. The equipment for power block 1 and 2 is smaller. The PTA consists of one combined-cycle block and one simple-cycle power block. The amended HBEP would operate less than the licensed HBEP (See **Air Quality**). The operations workforce would be reduced from 33 to 23 members (See **Socioeconomics**). Staff used the more conservative estimates of the amount of nonhazardous and hazardous waste generated from the licensed HBEP to determine if the PTA would produce significant impacts.

The proposed HBEP would generate non-hazardous and hazardous wastes in both solid and liquid forms under normal operating conditions. Before operations can begin, the project owner would be required to develop and implement an Operation Waste Management Plan pursuant to proposed Condition of Certification **WASTE-7**.

Non-Hazardous Solid Wastes

Waste products include 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 would be regularly transported off site to a local solid waste disposal facility (HBEP 2012a, § 5.14.1.2.3).

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 spill wastes to a minimum. However, to ensure proper cleanup and management of any contaminated soils or waste materials generated from hazardous materials spills, staff proposes 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 are provided in the **Hazardous Material Management** section of the FSA.

The amount of hazardous wastes generated during the operation of amended HBEP would be minor, 100 pounds per year, with source reduction and recycling of wastes implemented whenever possible (HBEP 2012a, Table 5.14-4). This would be about the same or slightly less than what was expected from the licensed HBEP. 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 proposed Condition of Certification **WASTE-6** to notify the CPM whenever the owner becomes aware of any such action.

IMPACT ON EXISTING WASTE DISPOSAL FACILITIES

Nonhazardous Solid Wastes

Staff used the waste total from the licensed project because those are the most conservative estimates to determine the impacts on waste disposal facilities. Demolition, construction and operation of the PTA would produce the same amount or less than the amount of waste than the licensed project. During demolition, construction, and operation of the proposed project, approximately 26,749 tons (59,179 cubic yards), 398 tons (2,653 cubic yards), and 39 tons per year (260 cubic yards per year)², respectively, of nonhazardous waste would be generated and recycled or disposed of in a Class III landfill (HBEP 2012 page 5.14-13).

The combined remaining capacity of the two landfills that would be used by the project is 414 million cubic yards. Refer to **Waste Management Table 4**. The total amount of nonhazardous waste generated from project demolition, construction, and operation would contribute less than 1 percent of the available landfill capacity. Staff finds that solid waste disposal generated by the HBEP project could occur without significantly impacting the capacity or remaining life of Orange County landfills.

Waste Management Table 4
Solid Waste Disposal Facilities for HBEP

	Location	Permitted Capacity (Cubic Yards)	Remaining Capacity (Cubic Yards)
Fran Bowerman Sanitary Landfill	Irvine	266,000,000	198,000,000
Olinda Alpha Sanitary Landfill	Brea	148,000,000	47,000,000

Source: HBEP 2012aPage 5.14-11

Hazardous Wastes

Hazardous wastes generated during demolition, construction and operation would be recycled to the extent possible and practical. Any wastes that cannot be recycled would be transported off-site to a permitted Class I landfill. Staff determined the impact from the project by using the most conservative numbers, which were the waste numbers from licensed HBEP. It was estimated 8,033 cubic yards of demolition hazardous waste, 53 cubic yards of construction hazardous waste and less than 100 cubic yards per year of hazardous would be disposed of in a Class I landfill. Two hazardous waste (Class I) disposal facilities are currently accepting waste and could be used to manage HBEP wastes: the Clean Harbors Buttonwillow Landfill in Kern County and the Chemical Waste Management Kettleman Hills Landfill in Kings County. In total, there is a combined excess of 15.5 million cubic yards of remaining hazardous waste disposal capacity at these landfills.

² The volume estimates (cubic yards) for solid/non-hazardous waste are staff generated numbers based on a conversion factor of approximately 906 pounds per cubic yard (taking into account amount of ferrous metal and cement) and 300 pounds per cubic yard for construction waste (HBEP Tables 5.14-1, 5.14-2 and Table 5.14-3). See <http://www.calrecycle.ca.gov/lgcentral/library/dsg/apndxi.htm> and city of Antioch conversion factors.

Given the availability of recycling facilities for high volume hazardous wastes such as used oil and solvents, along with the remaining capacity available at Class I disposal facilities, staff concludes that the volume of hazardous waste from the HBEP project requiring off-site disposal would be minor and would therefore not significantly impact the capacity or remaining life of the Class I waste facilities.

The wastes generated by the proposed HBEP PTA would incrementally increase the volumes of waste requiring off-site management and disposal at local landfills. However, the HBEP project's proposed waste management methods and mitigation measures (implementation of source reduction, waste minimization and recycling), along with the proposed conditions of certification discussed below (including compliance with the city of Huntington Beach's construction and demolition waste recycling and diversion requirements), would ensure that wastes generated by the proposed project would not result in a significant impact to local waste management and disposal facilities.

CUMULATIVE IMPACTS AND MITIGATION

In general, cumulative impacts consist of impacts that are created as a result of the proposed project in combination with impacts from other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time (Cal. Code Regs., tit. 14, §15355.).

The **Land Use Section Cumulative Impacts Table** lists 26 projects that include transportation, energy, commercial and residential projects. The wastes generated by these projects and the proposed HBEP would incrementally increase the volumes of waste requiring offsite management and disposal at local or regional landfills. One of the waste generating projects in the area will be the Ascon Landfill. The Ascon landfill will generate and dispose of approximately 32,250 cubic feet. The waste from the Ascon landfill would be disposed in an out-of-state Class I landfill (Sayed 2016) therefore there would be no impact on landfills used for disposal of HBEP wastes.

The projects vary in size and there is no data detailing the amount of waste that would be generated from the various projects, however, all residential, commercial and industrial projects would have to comply with Cal Recycle, Mandatory Commercial Recycling, Title 14, Division 7, Chapter 9.1.³ and Title 24 (CALGreen). The implementation of these regulations would reduce solid waste disposal in the city of Huntington Beach and Orange County. All of the projects listed would be required to recycle 50 to 75 percent of the waste generated from their project, thus minimizing the amount of waste generated from construction and demolition of new and current projects. The project owner estimates that 27,147 tons of solid waste would be generated during demolition and construction of the licensed HBEP. It is estimated that 2,350 tons of recyclable concrete would be generated from removal of the existing foundations and that 22,000 tons of metal would also be recyclable from demolition of the existing Huntington Beach Generating Station Units 1, 2, and 5 (HBEP 2012a page

³ Regulatory requirements; Businesses and public entities that generate four or more cubic yards of solid waste per week, and multifamily residential dwellings that have five units or more, take action to reuse, recycle, compost or otherwise divert commercial solid waste from disposal.

5.14-6). Orange County landfilled 4,436,932 tons of solid waste in 2014. The amended HBEP's contribution would be less than one percent of the county's waste generation.

Staff has concluded that the HBEP project's proposed waste management methods and mitigation measures (implementation of source reduction, waste minimization and recycling), along with staff's proposed conditions of certification, would ensure that wastes generated by the proposed project would not result in a significant cumulative impact to local waste management and disposal facilities.

CONCLUSIONS AND RECOMMENDATIONS

Management of the waste generated during construction and operation of HBEP would not result in any significant adverse impacts and would comply with applicable waste management laws, ordinances, regulations, and standards, if the mitigation measures proposed in the staff's analysis are implemented. The implementation of the current conditions of certification for HBEP would mitigate impacts to below significance for the construction and operation of the project.

CONDITIONS OF CERTIFICATION

The existing conditions of certification are adequate to ensure there would be no unmitigated significant impacts. Deleted text is in ~~strike through~~ and new text is **and underlined**.

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 (HBFD), and/or the Orange County Health Care Agency. 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.

Prior to and during grading and construction, discovery of additional soil contamination not previously identified or already included in corrective action plans, work plans, or closure plans must be reported to the CPM, DTSC, and the HBFD immediately.

Verification: At least 45 days prior to remediation the project owner shall submit to the CPM for approval copies of remediation documentation, such as, but not limited to, soil sample results, work plans, and agreements regarding the corrective action plan requirements and activities at the project site. Pertinent correspondence such as, but not limited to, soil sample results, work plans, agreements, and authorizations involving DTSC, the HBFD, and/or (if applicable) the Orange County Health Care Agency regarding the corrective action plan requirements and activities at the project site will be provided to the CPM within 10 days of receipt.

At least 15 days prior to the start of site mobilization, the project owner shall provide to the CPM 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.

If soil contamination not previously identified or already included in corrective action plans, work plans, or closure plans is encountered prior to or during grading the project owner shall notify the CPM and DTSC, revise the approved work plan and submit it for concurrent CPM, HBFD, and DTSC review within 30 days after contamination is identified. Comments received within 30 days from all parties shall be incorporated and provided to DTSC for approval.

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.

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.

WASTE-5 The project owner shall prepare a ~~Construction Waste Management Plan~~ **Construction and Demolition (C&D) Debris Waste Reduction and Recycling Plan** for all wastes generated during **demolition and** 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 **C&D Debris Waste Reduction and Recycling Plan** ~~Construction Waste Management Plan~~ to the CPM **and the city of Huntington Beach Department of Planning and Building** for approval no less than 30 days prior to the initiation of **demolition** and 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.

REFERENCES

- CEC 2012d** – California Energy Commission/ Felicia Miller (TN 67424). Record of Conversation with Felicia Miller, CEC & Safouh Sayed, DTSC regarding ASCON Landfill Clean Up, dated, 09/19/2012. Submitted to CEC/Dockets Unit on 10/02/2012.
- CEC 2012e** – California Energy Commission/ Felicia Miller (TN 67504). Record of Conversation with Felicia Miller, CEC & Robert Mason, CH2MHill regarding Construction Details, dated, 10/01/2012. Submitted to CEC/Dockets Unit on 10/02/2012.
- CEC 2014b** – Revised Data Responses to 104 dated 4/22/14 (TN 202186). Submitted to CEC/Docket Unit on April 22, 2014.
- CEC 2014d** – Final Staff Assessment (TN 202405). Submitted to CEC/ Docket Unit June 2, 2014.
- CEC 2014u** – Energy Commission Staff's Supplemental Response and Comments to the Presiding Member's Proposed Decision (TN 203155). Submitted to CEC/Docket Unit on October 3, 2014.
- CEC 2014v** – Huntington Beach Energy Project Revised Presiding Member's Proposed Decision (TN 203180). Submitted to CEC/Docket Unit on October 9, 2014.
- CEC 2014x** – Energy Commission Staff's Response and Comments to the Revised Presiding Member's Proposed Decision and Response to Comments (TN 203223). Submitted to CEC/Docket Unit on October 21, 2014.
- CEC 2014y** – Errata Revised Presiding Member's Proposed Decision (TN 203266). Submitted to CEC/Docket Unit on October 28, 2014.
- CEC 2014bb** – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.
- HBEP 2012a** – AES Southland Development, LLC / Stephen O'Kane (TN 66003). Application for Certification (AFC), Volume I & II, dated, 06/27/2012. Submitted to CEC/Dockets on 06/27/2012.
- HBEP 2012c** – Stoel Rives LLP / Melissa A. Foster (TN 66490). Applicant's Data Adequacy Supplement, dated 08/06/2012. Submitted to CEC/Dockets on 08/06/2012.
- HBEP 2012n** – Stoel Rives LLP / Melissa A. Foster (TN 68366). Applicant's Responses to Staff's Data Requests, Set 1A (#1-72), dated, 11/02/2012. Submitted to CEC/Dockets on 11/02/2012.
- HBEP 2013b** – Stoel Rives LLP / Melissa A. Foster (TN 69208). Applicant's Responses to Staff's Data Requests, Set 2 (#73-98), dated 01/22/2013. Submitted to CEC/Dockets on 01/22/2013.

HBEP 2013p – Stoel Rives LLP / Melissa A. Foster (TN 69919). Applicant's Email Correspondence to Staff's Informal Inquiry Regarding the Existing Huntington Beach Generating Station's Fuel Oil Tanks, dated 03/14/2013. Submitted to CEC/Dockets on 03/14/2013.

HBEP 2013t – Stoel Rives LLP / Melissa A. Foster (TN 69961). Applicant's Revision to Construction and Demolition Schedule, dated 03/19/2013. Submitted to CEC/Dockets on 03/19/2013

HBEP 2013u – Stoel Rives LLP / Kimberly J. Hellwig (TN 69967). Applicant's Submittal of Additional Construction and Demolition Information, dated 03/20/2013. Submitted to CEC/Dockets on 03/20/2013

HBEP 2014j – City of Huntington Beach Comments Regarding Final Staff Assessment, dated June 26, 2014 (TN 202629). Submitted to CEC/Docket Unit on June 30, 2014.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

HBEP 2015e – Huntington Beach Energy Project – Petition to Amend Staff's Data Request, A1 through A74 (12 AFC-02C) (TN 206618). Submitted to CEC/Docket Unit on November 13, 2015.

HBEP 2015i – Data Responses, Set1 (Responses to Data Request 1-74) (TN 206858). Submitted to CEC/Docket Unit on December 7, 2015.

Sayed 2016 – Safouh Sayed, Hazardous Substances Engineer, Brownfields and Environmental Restoration Program, Department of Toxic Substances Control. Email communication with Ellie Townsend-Hough, California Energy Commission March 11, 2016.

CHB 2012a – City of Huntington Beach / Dept. of Planning & Building / Aaron Klemm / Jane James (TN 68804). City of Huntington Beach Comments on the Huntington Beach Energy Project, dated 12/06/2012. Submitted to CEC/Dockets on 12/07/2012.

CHB 2013a – City of Huntington Beach / Dept. of Planning & Building / Aaron Klemm / Jane James (TN 201173). City of Huntington Beach Comments on the Huntington Beach Energy Project Preliminary Staff Assessment, Part A, dated 11/12/2013. Submitted to CEC/Dockets on 11/13/2013.

CHB 2015a – City of Huntington Beach / Dept. of Planning & Building / Steve Bogart / Jane James (TN 206751). Comment Letter from the Huntington Beach Department of Public Works, Fire Department and Department of Planning & Building on the AES Huntington Beach Energy Project Petition to Amend dated 11/18/2013. Submitted to CEC/Dockets on 11/24/2015.

WORKER SAFETY AND FIRE PROTECTION

Testimony of Brett Fooks, PE and Geoff Lesh, PE

SUMMARY OF CONCLUSIONS

The Petition to Amend (PTA) the Huntington Beach Energy Project (HBEP) proposes to modify the project which will not necessitate modification to the existing set of Worker Safety and Fire Protection conditions of certification. Similar to the conclusions in the Huntington Beach Energy Project's 2014 Energy Commission Final Decision (Decision), the potential adverse impacts from the proposed changes to the project would be less than significant. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Worker Safety and Fire Protection. The committee may rely upon the environmental analysis and conclusions of the Decision with regards to Worker Safety and Fire Protection and does not need to re-analyze them.

Staff determined that the laws, ordinances, regulations, and standards (LORS) applicable to the project remain the same since the Decision. Staff further proposes a new Condition of Certification **WORKER SAFETY-7** that would clarify that conformance to the National Fire Protection Association (NFPA) 850 is required.

INTRODUCTION

The purpose of this analysis is to determine whether this PTA would require new mitigation or modified Worker Safety and Fire Protection conditions of certification. As discussed in detail in the Project Description section, the amended HBEP would be a natural gas fired, combined-cycle and simple-cycle, air-cooled electrical generating facility on the site of the existing Huntington Beach Generating Station in Huntington Beach, California.

SUMMARY OF THE DECISION

The Commission's Decision found that industrial workers at the proposed facility would operate equipment, handle hazardous materials, and face other workplace hazards that could result in accidents or serious injuries. The worker safety and fire protection measures for this project would be designed to either eliminate or minimize such hazards through special training, use of protective equipment, or implementation of procedural controls. With adoption of the proposed conditions of certification, the Commission found that the project would comply with all applicable LORS and would not result in any unmitigated significant impacts.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

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 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. I
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

Applicable Law	Description
NFPA 56 (adopted 2012)	NFPA 56 is the Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems.
NFPA 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.

There have been no changes in the applicable LORS to the amended HBEP since the Decision for worker safety/fire protection and the project would comply with all applicable LORS.

ENVIRONMENTAL IMPACT ANALYSIS

Staff has reviewed the PTA for potential environmental effects and consistency with applicable LORS. Staff has determined that the worker safety and fire protection impacts of the proposed amended HBEP would be the same or less than significant with the proposed mitigation as those described in the current Decision. However, staff would like to clarify the enforceability of fire protection best practices document NFPA 850: *Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations* by proposing a new condition of certification.

The project owner stated in the original application for certification that the project would be built to the NFPA 850 standard and staff concurred with this assessment in the Final Staff Analysis. For power plants permitted by the Energy Commission, the delegate chief building official (DCBO) is instructed through the Energy Commission's DCBO manual to apply NFPA 850 during the construction process of the project. This measure has ensured that past projects have been built to the NFPA 850 standard. However, staff believes that because NFPA 850 is written as a set of "recommended" practices rather than "required" ones, the potential for confusion exists about whether conformance to NFPA 850 is indeed required. Staff therefore proposes Condition of Certification **WORKER SAFETY-7** which would require the project's compliance with NFPA 850, giving NFPA 850 the effectiveness and clear enforceability of a building code in its application to HBEP. In any situations where both NFPA 850 and other state or local LORS have application, the more restrictive shall apply. This proposed condition of certification would clarify for all stakeholders the responsibilities of the project owner as they relate to NFPA 850.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Comment: *The city of Huntington Beach provided comments from the Huntington Beach Fire Department in the form of a code requirements letter for fire safety which identified specific city of Huntington Beach municipal and fire codes and specifications which would apply to the proposed project (CHBFD 2016c).*

Response: Staff agrees and notes that the project would be built to comply with all applicable LORS, including local ones. Conditions of Certification **WORKER SAFETY-6** and **-7** both require that the project owner provide the project's emergency access plan and fire protection design documents to the fire department for review and comment.

CONCLUSIONS AND RECOMMENDATIONS

Staff's proposed new Condition of Certification **WORKER SAFETY-7** would ensure that the project facility is built to comply with NFPA 850 recommendations by allowing the CBO to enforce all of the applicable provisions. Staff concludes that with the implementation of the existing conditions of certification and the newly proposed **WORKER SAFETY-7**, the proposed amendment would not have any adverse significant public impacts due to worker safety or fire protection practices.

PROPOSED CONDITIONS OF CERTIFICATION

Staff concludes that the existing conditions of certification along with the addition of **WORKER SAFETY-7** are adequate to ensure that there would be no unmitigated significant impacts. New text is shown in **bold underline** and deletions are shown in ~~strikethrough~~.

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 **a copy of the letter** from the Huntington Beach Fire Department stating the fire department's ~~timely~~ comments, **if and when any are received**, 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).

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, **if and when any comments are received**, 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 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. Corners must allow for clear travel of a minimum 17-foot inner radius and 45-foot outer radius (radius must be concentric). The fire lanes shall be designed and maintained to support the imposed loads of fire apparatus (75,000 lbs. load/12,000 point load) and shall be surfaced to provide all-weather driving capabilities. Fire lane signage shall be provided as per City of Huntington Beach Specification #415. 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 Huntington Beach City Fire Department for review and timely comment, and to the CPM and CBO for review and approval.

WORKER SAFETY-7 NFPA 850 FIRE PROTECTION FOR ELECTRIC GENERATING PLANTS

The project owner shall adhere to all applicable provisions of the latest version of NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations as the minimum level of fire protection. All applicable NFPA 850 provisions and actions that are otherwise recommendations shall be incorporated herein as requirements. In any situations where both NFPA 850 and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850. At least 60 days prior to the start of construction of the fire protection system, the project owner shall provide all fire protection system specifications and drawings to the Huntington Beach Fire Department for review and comment, to the CPM for review and approval, and to the DCBO for plan check and construction inspection.

REFERENCES

CHBFD 2016c – Huntington Beach Fire Department (TN 212438). AES Huntington Beach Energy Project Response to “Preliminary Staff Assessment”, dated July 19, 2016. Submitted to CEC/Docket Unit on July 25, 2016.

HBEP 2012a – AES Southland Development, LLC / Stephen O’Kane (TN 66003). Application for Certification (AFC), Volume I & II, dated, 06/27/2012. Submitted to CEC/Dockets on 06/27/2012.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

Engineering Assessment

FACILITY DESIGN

Testimony of Shahab Khoshmashrab

SUMMARY OF CONCLUSIONS

Similar to the conclusions in the Energy Commission Final Decision (Decision) for the Huntington Beach Energy Project (HBEP), the amended HBEP project would create no significant impacts related to facility design. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Facility Design. The Committee may rely upon the analysis and conclusions of the Decision with regards to Facility Design and does not need to re-analyze them.

Staff concludes that the amended project would comply with applicable engineering laws, ordinances, regulations, and standards (LORS). The same Facility Design conditions of certification contained in the Decision, and presented below, would ensure compliance with these LORS.

INTRODUCTION

Staff has reviewed the 2014 Decision (CEC 2014bb) and analyzed the changes to the licensed HBEP (HBEP 2015a), which include revising the two, three-on-one combined-cycle power blocks totaling 939 megawatts (MW), to a single two-on-one combined-cycle power block and two simple-cycle gas turbine units, totaling 844 MW. The following analysis evaluates the portions of the modified project that may affect the Facility Design analysis, findings, conclusions, and conditions of certification contained in the Decision.

SUMMARY OF THE DECISION

The Decision adopted the staff's conditions of certification that establish a design review and construction inspection process to ensure compliance with applicable engineering LORS and to confirm the project, including the architectural visual enhancements (the proposed surfboards or wave form walls), will be built in a manner to ensure life safety. Condition of Certification **GEN-2** contained in the Decision requires that the architectural visual enhancements be designed and constructed in compliance with the California Building Code (CBC).

In addition, those conditions of certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. They further require project design approval and construction inspection by the Energy Commission's delegate chief building official (CBO) to ensure compliance with those conditions of certification and the LORS.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

No LORS applicable to the project have changed since the Decision was published in 2014. The proposed amendment would not trigger new LORS that may not have been applicable to the original project. **Facility Design Table 1**, listing key engineering LORS applicable to Facility Design as described in the Decision, is shown below.

Facility Design Table 1: Key Engineering LORS

Applicable LORS	Description
Federal	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards
State	2013 (or the latest edition in effect) California Building Standards Code (also known as Title 24, California Code of Regulations)
Local	City of Huntington Beach regulations and ordinances
General	American National Standards Institute American Society of Mechanical Engineers American Welding Society American Society for Testing and Materials

The complete list of LORS applicable to each engineering discipline (civil, structural, mechanical, and electrical) is described in Appendix 2C of the Application for Certification for HBEP (CEC 2014bb, p. 3.1-1).

ANALYSIS

The modifications proposed in the amendment would not affect Facility Design since the same LORS and design review and inspection process apply to the amended HBEP as those in the Decision. Also compared to the Decision, the roles, qualifications, and responsibilities of engineering personnel who would oversee project design and construction are unchanged.

The amendment proposes to replace the architectural surfboards and wave forms with visual screening walls as described in the Visual Resources section of this document. Similar to the surfboards and wave forms, the design and construction of these screening walls must comply with the structural requirements of the CBC, and thus, the reference to the architectural visual enhancement in Condition of Certification **GEN-2** remains.

No further analysis is needed due to the following reasons.

- The changes in the amendment would not create new significant environmental impacts or substantial increases in the severity of previously identified significant impacts.
- The amendment does not propose substantial changes which would require major revisions of the Facility Design analysis contained in the Decision.

- The circumstances under which the amended project would be undertaken would not require major revisions of the Facility Design analysis contained in the Decision.

RESPONSE TO PSA COMMENTS

Staff received no comments from the public, interveners, agencies, or petitioner in the area of Facility Design.

CONCLUSIONS AND RECOMMENDATIONS

Similar to the conclusions in the Decision for the HBEP, the amended project would comply with applicable engineering LORS. Implementation of the existing Facility Design conditions of certification contained in the Decision would ensure the amended project's compliance with applicable engineering LORS.

PROPOSED CONDITIONS OF CERTIFICATION

No changes to the Facility Design conditions of certification are needed.

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 Energy Commission's delegate chief building official 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.

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.

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;
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:

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.

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 conditions 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.

GEN-9: NO SHORELINE PROTECTIVE DEVICE.

In the event that the approved development, including any future improvements, is threatened with damage or destruction from coastal hazards, or is damaged or destroyed by coastal hazards, protective structures (including but not limited to seawalls, revetments, groins, deep piers/caissons etc.) shall be prohibited. By acceptance of the CEC approval, the project owner waives any right to construct such protective structures, including any that may exist under Public Resources Code Section 30235.

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 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 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.

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 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;
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.

REFERENCES

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

GEOLOGY AND PALEONTOLOGY

Testimony of Mike Conway

SUMMARY OF CONCLUSIONS

The Petition to Amend (PTA) for the Huntington Beach Energy Project (HBEP) does not seek to substantially modify the existing Geology and Paleontology conditions of certification. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the 2014 HBEP Commission Decision is necessary for Geology and Paleontology. The Committee need not re-analyze the conclusions of the 2014 Decision. However, staff proposes new Condition of Certification **GEO-3** to mitigate potential impacts to public health and safety from tsunamis.

INTRODUCTION

In this section, Energy Commission staff discusses potential impacts of the amended HBEP on Geology and Paleontology. The HBEP was originally licensed as a 939-megawatt (MW) project in November 2014. The proposed amendment seeks to modify each of the two power block turbine configurations. The amended project would consist of two gas turbine generators and a steam turbine in a two-on-one combined-cycle configuration for power Block 1, with a 644-MW capacity, and two simple-cycle gas turbines for power Block 2, with 200 MW capacity. Total generating capacity of the amended HBEP would be reduced from 939 MW to 844 MW. The amended project would incorporate 1.4-acres of land acquired from Southern California Edison that is wholly contained within the existing project boundary. Thus, increasing the total project size, bringing the project up to 30-acres. An increase in temporary project laydown and parking would also be required. Total temporary construction area would be 22-acres.

SUMMARY OF THE DECISION

The 2014 Commission Decision for the project did not find any immitigable impacts to geologic or paleontological resources. The Decision states that no known mineralogical or paleontological resources exist at the project site, but required Conditions of Certification **PAL-1** through **PAL-8** account for the potential recovery of paleontological resources if any are found during construction. The Decision also required the owner to prepare an Engineering Geology Report to characterize the geologic conditions on site, through Condition of Certification **GEO-1**, and to identify abandoned gas wells, through Condition of Certification **GEO-2**.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

Applicable LORS	Description
Federal	The site is not located on federal land and there are no federal regulations directly applicable to the geological or paleontological conditions at the project site
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), section 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 section 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, 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 <i>Huntington Beach Municipal Code</i> . General Plan policies specific to geologic, soil, and seismic hazards are listed in the Environmental Hazards Element.
Huntington Beach Municipal Code and Grading Ordinance	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 <i>Huntington Beach Building Code</i> 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 City Specification 429 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. City Specification 429 directs the assessment 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.

ENVIRONMENTAL IMPACT ANALYSIS

Since the subsurface conditions and associated geologic hazards at the proposed site are expected to be similar to those previously analyzed, potential geologic hazards and the thresholds for significance are essentially the same as documented in the Commission Decision (CEC 2014). There are no significant geologic resources present in the project area, therefore there is no potential to impact those resources. There is however the potential to encounter paleontological resources during construction of the project.

CONSTRUCTION IMPACTS AND MITIGATION

Since construction of the proposed project would include significant amounts of grading, foundation excavation, and utility trenching, staff considers the probability that paleontological resources would be encountered during such activities to be high when native materials are encountered, based on Society of Vertebrate Paleontology (SVP 2010) assessment criteria. Conditions of Certification **PAL-1** through **PAL-8** are designed to mitigate any paleontological resource impacts, as discussed above, to a less than significant level.

OPERATION IMPACTS AND MITIGATION

The geologic hazards present at the amended HBEP site are essentially the same as those considered in the Commission Decision. These potential hazards can be effectively mitigated through facility design as required by the California Building Code (2013) and Condition of Certification **GEO-1**. **GEO-3** includes requirements that project design consider potential impacts of inundation from a tsunami. Staff discovered additional information since licensing of the HBEP that can be used to further analyze potential impacts from tsunami that is presented below.

Tsunami

Given the current planning scenario that shows the project site is in the tsunami inundation zone (CGS 2009), staff is concerned there may be a threat of impact to public health and safety from tsunami. Also, since the science behind estimating sea-level rise is evolving, it is possible projections could change during the life of the project and that the project design would not adequately incorporate mitigation for potential site inundation. In addition, recent fault studies and tsunami modeling that are currently being evaluated by the scientific community could add to the potential for tsunami impacts at the site. Staff concludes that it would be appropriate for the project owner to be prepared to respond to a potential tsunami event and ensure that all workers and site visitors would be safe from an event similar to the nearby areas of the city of Huntington Beach that are located in a tsunami zone.

The city of Huntington Beach prepared a Tsunami Evacuation Route map for its residents. The HBEP site is located within evacuation Zone 4. The proposed evacuation route from the site, as identified on the map, would be to travel northward on Newland Street. The nearest identified Safe Areas are Drew Park and Hawes Park, which are both approximately two miles north of the HBEP site (CITY 2007). See **Geology and Paleontology Figure 1** for details about the evacuation map.

Staff recommends the project owner be required to prepare and implement a Tsunami Hazard Mitigation Plan (THMP) in accordance with Condition of Certification **GEO-3**. The THMP would include, among other things, a discussion of the city of Huntington Beach evacuation plan and how it applies to the project. It would also include discussion of criteria for a response to ensure public safety for a tsunami event, show where on and offsite refuge can be accessed, and recommend evacuation routes. The THMP would also include a training program for visitors and workers. The purpose of training would be to inform workers and visitors on how to respond to tsunami hazards and where they may obtain refuge in the event it is necessary to evacuate the project site.

The THMP would be updated whenever the city of Huntington Beach or Orange County hazard response plans are updated. Whenever there is an update in hazard response plans the project owner shall submit an updated THMP to the compliance project manager (CPM).

The potential for, and mitigation of, the effects of tsunami on the proposed site should also be addressed in a project-specific geotechnical report, per CBC 2013 in accordance with Condition of Certification **GEO-1** and Conditions of Certification in Facility Design **GEN-1**, **GEN-5** and **CIVIL-1**. Mitigation of tsunami run-up hazards includes structural and civil engineering evaluation, strengthening of seafront structures and providing emergency warning systems. Structural reinforcement at the site can be included for tsunami protection, as deemed appropriate at the detailed design stage by the project structural engineer.

CUMULATIVE IMPACTS AND MITIGATION

There are no changes to the cumulative impacts section of the Commission Decision caused by the proposed amendment changes. As a result, no additional mitigation is considered necessary.

COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT

COMMENTS FROM THE CALIFORNIA COASTAL COMMISSION (CCC)

CCC submitted comments nearly identical to those received in the previous project's proceeding (12-AFC-02). Though the comments were addressed directly by the Commission Decision (2014) for the previous case, staff wanted to provide additional response for instances where it pertains to the amended project.

CCC-1: *Drawdown that affects nearby ESHA/wetland areas would be inconsistent with LCP Policies 6.1.4, 7.1.2, and 7.1.3, which require that habitat values be maintained and protected. To ensure project dewatering is done in a manner consistent with these policies, the Commission recommends the CEC modify FSA Condition **GEO-1** to require AES to conduct a geotechnical investigation that identifies expected dewatering volumes and the spatial extent of drawdown expected from that dewatering.*

Staff Response: The previous Commission Decision addressed this comment and added language staff recommended for **SOIL&WATER-3** that requires the owner to submit a dewatering plan. **GEO-1** also requires the project owner to conduct a geotechnical investigation to identify dewatering volumes and the spatial extent of drawdown from the anticipated dewatering. These conditions are adequate to address potential impacts from dewatering during construction.

CCC-2: Recommended New Condition GEO-3: Flood and Tsunami Hazard Mitigation Planning. *Prior to the start of construction, AES shall submit for CPM review and approval, a Facility Hazard Emergency Response Plan developed in coordination with the City of Huntington Beach, Southern California Edison, and the Orange County Flood Control District. The Facility Hazard Emergency Response Plan shall include, at a minimum:*

- 1. Results of hydraulic and hydrodynamic modeling using methods approved by the Federal Emergency Management Agency (FEMA) or the National Oceanic and Atmospheric Administration (NOAA) showing the effects of the facility's proposed structures on other nearby structures (including, but not limited to, structures associated with the existing adjacent power plant, the on-site Southern California Edison substation, and the Orange County Flood Control Channel) during: (1) a tsunami runup of 11 feet above mean sea level with an additional two feet of sea level rise (for a total runup of 13 feet above mean sea level); (2) the 100-year flood event with an additional two feet of sea level rise; and (3) the 500-year flood events as determined pursuant to Condition **SOIL&WATER-8**.*
- 2. Concurrence from Southern California Edison and the Orange County Flood Control District that the modeling efforts accurately reflect expected hazard levels at these nearby structures, and concurrence from the City of Huntington Beach that the Plan is consistent with the City's most recent Hazard Mitigation Plan and Multi-Hazard Mitigation Plan prepared pursuant to California Government Code Sections 8685.9 and 65302.6 and 44 CFR 201.6 et. seq.*
- 3. Structural and non-structural measures AES will implement to avoid, or if infeasible to avoid, to reduce any identified adverse effects of tsunami and flood events and to ensure human safety. Structural measures shall include either those that allow facility personnel immediate vertical evacuation to safe areas above tsunami runup elevations or those that allow facility personnel to remain inside structures that are not subject to inundation. The structural measures identified and required by this Plan shall be determined by a licensed structural engineer to be fully tsunami-resistant.*

Staff Response: The PSA proposed a Tsunami Hazard Mitigation Plan as part of **GEO-3** that would address threats to public safety. It would also require updates to the plan whenever the city of Huntington Beach or Orange County updates their tsunami response plan. Also, there is no new evidence to suggest that the 100-year level protection is inadequate. This is an applicable engineering standard and is adequately protective for this type of facility. The Energy Commission also responded to this comment in the previous proceeding stating,

“In the Soil and Water Resources section of this Decision, we reviewed the basis for the Coastal Commission’s insertion of a 500-year flood event into the design and implementation of the HBEP. We state again that the conditions of certification already contain sufficient mitigation for the potential impacts of inundation to even a critical facility such as the HBEP. Imposing additional mitigation would not be proportionate to the identified impacts nor necessary to comply with LORS.”

CCC-3: *We recommend that project changes resulting from the upcoming studies undergo additional public review, if those changes are likely to increase adverse coastal resource effects or reduce the project’s conformity to relevant Coastal Act and LCP provisions. We recommend the following modification to the FSA’s proposed Condition GEO-1:*

*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. **If the analyses or recommendations show that the project will cause greater or more significant adverse effects to coastal resources than identified and evaluated in the Presiding Member’s Final Decision for this AFC, the project owner shall submit the analyses and recommendations for additional public review to be conducted by the CEC staff.***

Staff Response: The recommended change to **GEO-1** is not supported by the record in these proceedings. There is no evidence that the proposed project cannot be engineered and constructed in accordance with all current building standards. Additionally, staff has identified no environmental impacts that could occur as a result of foundation construction. Staff notes however that all compliance submittals for a licensed project are part of the public record and available for review upon request.

CCC-4: *To allow conformity to the LCP’s Environmental Hazards Policy 1.1.4, the Commission recommends the following additional condition:*

“Condition GEO-4: Prior to issuance of the project grading permit, the project owner shall provide to the CPM documentation from the City of Huntington Beach showing that the project is consistent with the City’s most recent Flood Management Plan, Hazard Mitigation Plan, and Multi-Hazard Mitigation Plan prepared pursuant to California Government Code Sections 8685.9 and 65302.6 and 44 CFR 201.6 et seq.”

Staff Response: The additional condition as proposed by the Coastal Commission is not supported by the record. There is no conflict between the proposed project and the mentioned city plans, nor is there any evidence that the proposed project would hamper or otherwise impair the city’s flood or hazard planning objectives.

CCC-5: *The CCC discussed a number of issues with respect to the seismic safety of the project. Staff has compiled these observations into the following summary that staff believes represents the overarching concern of the CCC regarding seismic safety of the project.*

Seismic setting

The proposed facility is located within a seismically-active region that includes the underlying Newport-Inglewood Fault Zone (NIFZ), which extends about 50 miles from Newport Beach to Los Angeles. Within that NIFZ, the California Geological Survey (CGS) has designated several specific fault segments as being within an Alquist-Priolo Earthquake Fault Zone, including a portion of the NIFZ's North Branch Fault about one-half mile from the HBEP site. The HBEP would be located within a few hundred feet of the NIFZ's South Branch Fault (see Exhibit 11 – Mapped South Branch Fault Beneath Project Site).

A 1981 study noted that the NIFZ in the immediate project area had not been designated as active mainly because of the difficulty in identifying evidence for faulting. When investigating the NIFZ for designation within an Alquist-Priolo Earthquake Fault Zone, the CGS found sufficient evidence to designate just the above-referenced segment of the NIFZ's North Branch near the proposed project site. Results of geodetic studies published in 2001 found evidence suggesting that the South Branch may be active. Additionally, a 2007 study of another nearby project's potential pipeline routes described the South Branch Fault as "potentially active." More recently, the City noted that additional studies of the South Branch and other fault traces could result in Alquist-Priolo Earthquake Fault Zone designations. The City's 2011 Hazard Mitigation Plan describes the South Branch Fault as "active," and identifies critical infrastructure near that fault that may be subject to damage from seismic activity.

Site Seismic Hazards

The HBEP site is subject to several types of seismic hazards such as surface fault rupture, ground shaking, liquefaction, and lateral spreading. All of these issues need to be evaluated. It is not yet clear whether the upcoming geotechnical investigations and the resulting proposed mitigation measures will require substantial changes to the facility and cause additional and as-of-yet unknown and unquantified adverse effects on coastal resources. If the analyses or recommendations show that the project will cause greater or more significant adverse effects to coastal resources than identified and evaluated in the Presiding Member's Final Decision for this AFC, the project owner shall submit the analyses and recommendations for additional public review to be conducted by the CEC staff.

Staff Response: Staff understands the seismic issues at the site and is aware that site structures could be subject to seismically induced impacts such as ground shaking. These issues are not inconsequential and have been investigated in detail in the original Application for Certification (AFC) proceeding, the results of which are presented in the FSA. The CCC indicated a specific concern for surface rupture based on the presumption that the South Branch Fault is active and located beneath the project site and that the North Branch Fault is about one-half mile from the HBEP site. A detailed examination of a compilation of available scientific evidence indicates that the North Branch Fault is almost one mile distant from the site and the South Branch Fault does not actually pass beneath the site, but passes about 440 feet northeast of the site (Morton 2004).

Based on our investigation staff agrees with the CCC that seismic safety is a concern for the site. However, there is no evidence that the proposed project cannot be engineered and constructed in a safe and reliable manner by complying with current building standards.

Staff agrees the field investigations performed during construction to confirm the existing understanding of the site may identify changed conditions: indeed, that is one purpose for performing such investigations. However, the amount of existing data available and reviewed by staff during evaluation of this project is considerable and it is not reasonable to presume that geotechnical investigations for final project design will yield significantly different results. If significantly different conditions are encountered and project design changes are needed to address potential impacts not addressed in the Final Commission Decision the project owner would be required to file a petition to amend the Commission Decision which would be further analyzed by staff and made available for public review and comment. Additionally, all reports and findings during the construction process, including geotechnical reports, must be submitted to the CBO and CPM, and as such are part of the public record and are available for review upon request.

Staff does not propose any changes at this time.

COMMENTS FROM THE HUNTINGTON BEACH PUBLIC WORKS DEPARTMENT (HBPW)

HBPW-1: *A detailed soils and geological/seismic analysis shall be prepared by a registered engineer. This analysis shall include on-site soil sampling and laboratory testing of materials to provide detailed recommendations for grading, over excavation, engineered fill, dewatering, settlement, protection of adjacent structures, chemical and fill properties, liquefaction, retaining walls, streets, and utilities. (MC 17.05.150)*

Staff Response: Staff agrees the applicant should be required to undertake this type of analysis. Condition **GEO-1** requires the preparation of a soils engineering report to address the mentioned hazards.

CONCLUSIONS AND RECOMMENDATIONS

Staff proposes to add Condition of Certification **GEO-3** to include additional protection for HBEP employees and visitors from the threat of tsunami. In addition, staff is proposing minor changes to update the conditions of certification in this section for the purpose of making the existing requirements more clear.

PROPOSED CONDITIONS OF CERTIFICATION

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 tsunami. 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 tsunami, 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.

If 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.

GEO-3 TSUNAMI HAZARD MITIGATION PLAN

The project owner shall ensure that all staff and visitors at the project site are informed of tsunami hazards in the region and have been shown how and where to evacuate the site if there is potential for a tsunami to affect public health and safety at the site. The project owner shall ensure that the information provided to staff and visitors complies with the recommendations and procedures provided by the city of Huntington Beach or Orange County.

The project owner shall provide a Tsunami Hazard Mitigation Plan (THMP) to the compliance project manager (CPM) for review and approval.

The THMP shall include:

- A. A general discussion of tsunami hazard and the public safety risk they present at the site.**
- B. Identification of what tsunami hazards exist specific to the project site and how the project owner proposes to ensure compliance with applicable hazard response plans.**
- C. A discussion of criteria for a response to ensure public safety for a tsunami event and show where on and offsite refuge can be accessed, and evacuation routes.**
- D. Identification of any site modifications or signage that may be needed to show how and where refuge is accessible.**

E. The THMP shall also include a training program for visitors and workers, which could be incorporated with other safety training programs such as those required in WS-1 and WS-2. The purpose of training is to inform workers and visitors how to respond to tsunami hazards and where they may obtain refuge in the event it is determined it is necessary to evacuate the project site. The project owner may include the training for tsunami hazard response as a part of the Worker Environmental Awareness Program required in PAL-4 below. The training shall include:

1. Information on who and how staff and visitors will be notified that there is a potential for a tsunami event to impact the site and how they should respond;
2. Graphics showing methods of seeking refuge and routes for evacuation of the site;
3. A certification of completion form signed by each worker indicating that he/she has received the training; and
4. Submittal of 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 training.

The THMP shall be updated if the city of Huntington Beach or Orange County updates their tsunami response plan. When there is an update to hazard response plans, the project owner shall submit for CPM approval an updated THMP showing how the project owner proposes to comply.

Verification: The project owner shall submit the THMP 60 days prior to ground disturbance for CPM review and approval. The project owner shall submit any subsequent updates to the THMP to the CPM within 90 days of an update to an applicable THMP.

PAL-1 APPOINTMENT AND QUALIFICATIONS OF PALEONTOLOGICAL RESOURCE SPECIALIST (PRS)

The project owner shall provide the compliance project manager (CPM) with the resume and qualifications of its paleontological resource specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (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.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a 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 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.

~~The project owner may replace the PRS by submitting the required resume, references and contact information of the proposed alternate to the CPM.~~

Verification:

- (1)** At least 60 days prior to **the start of** ground disturbance, the project owner shall submit ~~the resume~~ **and statement of availability of its designated PRS** the proposed PRS, ~~with at least three references and contact information, to the CPM~~ for **on-site work to the CPM, whose review and approval must be obtained.**

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project. The letter shall state 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.

(3) Prior to any planned change in the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

~~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:

- (1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.
- (2) If there are planned changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

- (3) If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 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.

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.

Verification:

- (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 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:

- (1) 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.
- (2) 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, and copies of these logs shall be submitted with the MCR. 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 list of identified fossils. Negative findings, when no fossils are identified, shall also be reported. 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 identifying the entity that will be responsible for curating collected specimens. This document shall also show that fees have been paid for curation and the owner relinquishes control and ownership of all fossil material.

Certification of Completion

Worker Environmental Awareness Program

HUNTINGTON BEACH ENERGY PROJECT (12-AFC-02C)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
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Cultural Trainer: _____ Signature: _____ Date: ____/____/____

Paleo Trainer: _____ Signature: _____ Date: ____/____/____

Biological Trainer: _____ Signature: _____ Date: ____/____/____

REFERENCES

CEC 2014 – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

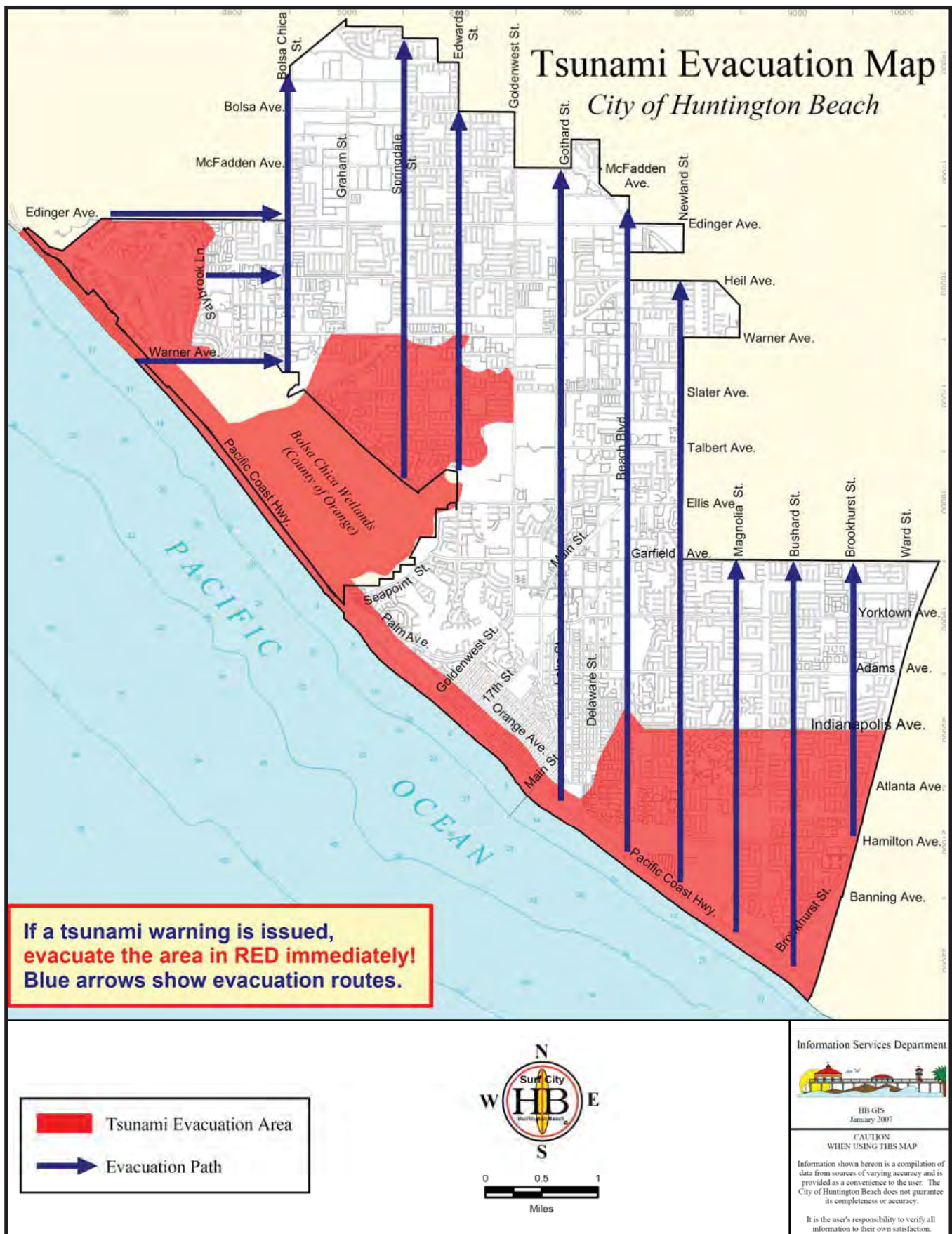
CGS 2009 – Tsunami Inundation Map for Emergency Planning, Newport Beach Quadrangle. California Geological Survey. March 15, 2009.

CITY 2007 – City of Huntington Beach Tsunami Evacuation Map. City of Huntington Beach Information Services Department. January 2007.

Morton 2004 – Morton, D.M., Preliminary Digital Geologic Map of the Santa Ana 30' x 60' Quadrangle, southern California, version 2.0, U.S. Geological Survey Open File Report 99-12, Version 2.0, 2004

SVP 2010 – Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, 2010.

GEOLOGY AND PALEONTOLOGY - FIGURE 1
Huntington Beach Energy Project - Tsunami Evacuation Map



POWER PLANT EFFICIENCY

Testimony of Edward Brady

SUMMARY OF CONCLUSIONS

Similar to the conclusions in the Commission Final Decision (Decision) for the HBEP, the amended HBEP project would create no significant impacts related to power plant efficiency. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Power Plant Efficiency. The Committee may rely upon the analysis and conclusions of the Decision with regards to Power Plant Efficiency and does not need to re-analyze them.

The thermal efficiency of the combined-cycle portion of the amended HBEP would compare quite favorably with the efficiency of the licensed combined-cycle HBEP. Furthermore, the efficiency of the simple-cycle units for the amended HBEP would be comparable to the efficiency of other modern simple-cycle units. The needed quantities of natural gas fuel for the amended project would not result in a significant impact on natural gas supplies and resources

INTRODUCTION

Staff has reviewed the Decision (CEC 2014bb) and analyzed the modifications proposed for the HBEP (HBEP 2015a), which include revising the approved pair of three-on-one combined-cycle electric power generating blocks to a single two-on-one combined-cycle power block and two simple-cycle combustion-turbine generators (CTGs). The following analysis evaluates the portions of the modified project that may affect the Power Plant Efficiency analysis, findings, conclusions, and conditions of certification contained in the Decision.

SUMMARY OF THE DECISION

The Decision (CEC 2014bb) found that the HBEP's efficiency of 46 percent was comparable to the average fuel efficiency of a typical rapid-response/flexible combined-cycle power plant. The Decision concluded that the needed quantities of natural gas fuel for the project will create a less-than-significant impact on natural gas supplies and resources and found the source of natural gas fuel for the project to be reliable.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

No federal, state, or local laws, ordinances, regulations, or standards (LORS) apply to power plant efficiency.

ENVIRONMENTAL IMPACT ANALYSIS

The approved HBEP includes two independent, three-on-one combined-cycle power blocks, consisting of a total of six Mitsubishi M501DA CTGs, six heat recovery steam generators (HRSGs), and two steam turbine generators (STGs), totaling 939 megawatts (MW). The amended HBEP would substitute these power blocks with a single two-on-one combined-cycle power block using two General Electric (GE) 7FA CTGs, two HRSGs, and one STG, and a second power block containing two GE LMS100 PB CTG simple-cycle units, all totaling 844 MW (HBEP 2015a, §§ 1.0, 2.1).

The efficiency of the combined-cycle portion of the amended project would be 56 percent (HBEP 2015a, Figures 2.1-5a and 2.1-5b). This efficiency compares quite favorably with the licensed HBEP's efficiency of 46 percent.

The efficiency of the simple-cycle portion of the amended project would be 41 percent (HBEP 2015a, § 2.6.2).¹ The LMS100 PB is a modern CTG and its efficiency is comparable to the efficiency of other, currently-operating, modern simple-cycle CTGs.

Consistent with the licensed HBEP, natural gas fuel for the amended HBEP would be delivered to the project site via an existing 16-inch-diameter Southern California Gas Company (SoCalGas) pipeline located on the northwest side of the project site (HBEP 2015a, § 2.1.1.3). SoCalGas' natural gas comes from resources in the Southwest, Canada, and the Rocky Mountains. This represents a resource of considerable capacity and offers access to adequate annual supplies of natural gas. However, gas demand is both instantaneous and long-term (e.g., annual), and the closure and potential long-term de-rate of the SoCalGas' Aliso Canyon natural gas storage facility, located north/northwest of the San Fernando Valley near Los Angeles, may impact instantaneous natural gas deliveries to the power plants it serves. This includes the existing Huntington Beach Generating Station (HBGS) and it could potentially impact the amended HBEP.

The state's program to phase out once-through cooling power plants is forcing the retirement of a substantial amount of dispatchable generation in coastal areas and their replacement with new electrical generation to preserve the reliability of the California electric grid system. In keeping with this program, the approximately 50-60 year-old retiring once-through cooling HBGS would be replaced by the modern and more efficient amended HBEP, resulting in less natural gas consumption per megawatt (MW) of generation. Additionally, dispatch orders generally call for the most efficiently-generated energy first, especially when peaking capacity is required (the amended HBEP would include peaking units). Therefore, the older, less efficient plants are being displaced by modern and more efficient gas-fired power generation. The electric grid system's reliance on new generation in the region rather than on the existing aging plants would result in further decreases in natural gas consumption per MW of generation and would help alleviate the potential effect of the closure of Aliso Canyon. The amended HBEP would start up 4-7 years into the future (HBEP 2015a, § 2.0) and it is not clear if the closure or de-rate of Aliso Canyon will continue until then.

¹ This efficiency is based on the average climatic conditions at the project site.

No further analysis is needed due to the following reasons:

- The changes in the amendment would not create new significant environmental impacts or substantial increases in the severity of previously identified significant impacts;
- The amendment does not propose substantial changes which would require major revisions of the Power Plant Efficiency analysis contained in the Decision; and
- The circumstances under which the amended project would be undertaken would not require major revisions of the Power Plant Efficiency analysis contained in the Decision.

RESPONSE TO PSA COMMENTS

Staff received no comments from the public, interveners, agencies, or petitioner in the area of Power Plant Efficiency.

CONCLUSIONS AND RECOMMENDATIONS

Similar to the conclusions in the Decision for the HBEP, the amended project would create no significant impacts related to power plant efficiency. The thermal efficiency of the combined-cycle portion of the amended HBEP would compare quite favorably with the efficiency of the licensed combined-cycle HBEP. Furthermore, the efficiency of the simple-cycle units proposed for the amended HBEP would be comparable to the efficiency of other modern simple-cycle units. The needed quantities of natural gas fuel for the amended project would not result in a significant impact on natural gas supplies and resources.

PROPOSED CONDITIONS OF CERTIFICATION

The Decision included no conditions of certification for Power Plant Efficiency and staff believes no such conditions are warranted by the proposed amendment, and none are proposed.

REFERENCES

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

POWER PLANT RELIABILITY

Testimony of Edward Brady

SUMMARY OF CONCLUSIONS

Similar to the conclusions in the Commission Final Decision (Decision) for the HBEP, the amended HBEP would be built and would operate in a manner consistent with industry norms for reliable operation and would maintain a level of reliability which equals or exceeds reliability of other electric generation power plants, including the licensed HBEP. Also similar to the licensed project, the amended project would create no significant impacts related to power plant reliability. Therefore, in accordance with the California Environmental Quality Act (CEQA) Guidelines section 15162 (Cal. Code Regs., tit. 14, § 15162), staff concludes that no supplementation to the Decision is necessary for Power Plant Reliability. The Committee may rely upon the analysis and conclusions of the Decision with regards to Power Plant Reliability and does not need to re-analyze them.

INTRODUCTION

Staff has reviewed the Decision (CEC 2014bb) and analyzed the changes to the licensed Huntington Beach Energy Project (HBEP), which include revising the approved pair of three-on-one combined-cycle electric power generating blocks to a single two-on-one combined-cycle power block and a second power block containing two simple-cycle combustion turbine generators (CTGs) (HBEP 2015a). The following analysis evaluates the portions of the modified project that may affect the Power Plant Reliability analysis, findings, conclusions, and conditions of certification contained in the Decision.

SUMMARY OF THE DECISION

The Decision (CEC 2014bb) found that the HBEP's plant maintenance program and redundant equipment list, the sources of the project's natural gas fuel and cooling water supplies, and the project's ability to withstand natural disasters by complying with the Facility Design conditions of certification will result in an adequate level of reliability; a level of reliability which equals or exceeds reliability of other power plants.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

No federal, state, or local/county laws, ordinances, regulations, or standards (LORS) apply to power plant reliability.

ANALYSIS

Similar to the licensed project, the amended project would include two independent power blocks. This arrangement provides inherent reliability. Failure of one power block cannot affect the operation of the other block, thereby allowing the power plant to continue to generate electricity, but at reduced output. Also, the amended HBEP's simple-cycle block would consist of two independent CTGs. Failure of one CTG would not hinder the operation of the other one, thus allowing the power block to continue to generate electricity (at reduced output). The amended HBEP's ancillary systems would also include adequate redundancy to ensure their continued operation if equipment fails (HBEP 2015a, § 2.5.2.1, Table 2.5-1).

The amendment describes the amended HBEP's plant maintenance program and the sources of natural gas fuel and cooling water supplies (HBEP 2015a, §§ 2.1.6, 2.1.8, 2.5.1), which are the same as the licensed HBEP. Also, similar to the licensed HBEP, the amended HBEP would be able to withstand natural disasters by complying with the Conditions of Certification described in the **Facility Design** section of this analysis. These conditions of certification would ensure the project is built in compliance with the latest applicable engineering and building codes.

Consistent with the licensed HBEP, natural gas fuel for the amended HBEP would be delivered to the project site via an existing 16-inch-diameter Southern California Gas Company (SoCalGas) pipeline located on the northwest side of the project site (HBEP 2015a, § 2.1.1.3). SoCalGas' natural gas comes from resources in the Southwest, Canada, and the Rocky Mountains. This represents a resource of considerable capacity and offers access to adequate annual supplies of natural gas. However, gas demand is both instantaneous and long-term (e.g., annual), and the closure and potential long-term de-rate of the SoCalGas' Aliso Canyon natural gas storage facility, located north/northwest of the San Fernando Valley near Los Angeles, may impact instantaneous natural gas deliveries to the power plants it serves. This includes the existing Huntington Beach Generating Station (HBGS) and it could potentially impact the amended HBEP.

The state's program to phase out once-through cooling power plants is forcing the retirement of a substantial amount of dispatchable generation in coastal areas and their replacement with new electrical generation to preserve the reliability of the California electric grid system. In keeping with this program, the approximately 50-60 year-old retiring once-through cooling HBGS would be replaced by the modern and more efficient amended HBEP, resulting in less natural gas consumption per megawatt (MW) of generation. Additionally, dispatch orders generally call for the most efficiently-generated energy first, especially when peaking capacity is required (the amended HBEP would include peaking units). Therefore, the older, less efficient plants are being displaced by modern and more efficient gas-fired power generation. The electric grid system's reliance on new generation in the region rather than on the existing aging plants would result in further decreases in natural gas consumption per MW of generation and would help alleviate the potential effect of the closure of Aliso Canyon. The amended HBEP would start up 4-7 years into the future (HBEP 2015a, § 2.0) and it is not clear if the closure or de-rate of Aliso Canyon will continue until then.

Therefore, the amended HBEP would be able to demonstrate a level of plant availability and reliability that equals or exceeds reliability of existing power plants. No further analysis is needed due to the following reasons.

- The changes in the amendment would not create new significant environmental impacts or substantial increases in the severity of previously identified significant impacts.
- The amendment does not propose substantial changes which would require major revisions of the Power Plant Reliability analysis contained in the Decision.
- The circumstances under which the amended project would be undertaken would not require major revisions of the Power Plant Reliability analysis contained in the Decision.

RESPONSE TO PSA COMMENTS

Staff received no comments from the public, interveners, agencies, or petitioner in the area of Power Plant Reliability.

CONCLUSIONS

Staff concludes that the amended HBEP would be built and would operate in a manner consistent with industry norms for reliable operation and would maintain a level of reliability which equals or exceeds reliability of other power plants, including the licensed HBEP.

CONDITIONS OF CERTIFICATION

The Decision included no conditions of certification for Power Plant Reliability and staff believes no such conditions are warranted by the proposed amendment, and none are proposed.

REFERENCES

CEC 2014bb – Final Commission Decision (TN 203309). Submitted to CEC/Docket Unit on November 4, 2014.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

TRANSMISSION SYSTEM ENGINEERING

Testimony of Laiping Ng and Mark Hesters

SUMMARY OF CONCLUSIONS

The proposed transmission facilities between the new generators at the Huntington Beach Energy Project (HBEP) and Southern California Edison (SCE) Huntington Beach Switching Station including the step-up transformers, the 230 kV overhead transmission lines, and terminations, are acceptable and would comply with all applicable laws, ordinances, regulations, and standards (LORS). The HBEP interconnection with the transmission grid would not require additional downstream transmission facilities (other than those proposed by the applicant) that require California Environmental Quality Act (CEQA) review.

The HBEP generation output is less than the generation output of the project as approved in the 2014 Energy Commission Decision (Decision). The HBEP would not cause additional downstream transmission impacts other than those identified in the Queue QC5 Phase II Interconnection Study Report Dated December 3, 2013, from California Independent System Operator (California ISO). The Study Report is still valid and no new study would be required.

Staff proposes no changes to Conditions of Certification **TSE 1-5**. The HBEP, as amended, would comply with LORS.

INTRODUCTION

The HBEP Petition to Amend (PTA) proposes to replace the licensed power block 1 with a two-on-one combined-cycle configuration and power block 2 with two simple-cycle gas turbine generators. Power block 1, with three generators, would generate at a total of 644 megawatts (MW) nominal output. Power block 2, with two generators, would generate approximately 200 MW nominal output. The nominal output from these two power blocks to the transmission system would be 844 MW. The amended HBEP generating facility has the potential to generate at a maximum output of 890 MW. This analysis is based on the maximum output to the SCE transmission system.

The approved two 230 kV overhead generator tie-lines which interconnect power block 1 and 2 to the Huntington Beach Switching Station remain unchanged. Power would be distributed to the transmission system in the same way as the approved HBEP.

SUMMARY OF THE DECISION

As stated in the Decision, two 230-kilovolt (kV) generator tie-lines will connect both HBEP power blocks 1 and 2 to the existing SCE 230-kV Huntington Beach Switching Station. The Huntington Beach Switching Station is connected to the SCE Ellis Substation. Power would be distributed the transmission system from the Ellis Substation.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

The LORS from the original Commission decision still apply. No update is required.

TRANSMISSION SYSTEM ANALYSIS

As proposed in the PTA, the Huntington Beach Energy Project would consist of two power blocks. Power block 1 consists of two combustion turbine generators (CTG) and one steam turbine generator (STG). Each CTG is expected to generate at maximum 234.5 megawatts (MW) with a power factor of 0.85 and the STG is expected to generate at maximum 241 MW with a power factor of 0.85. Power block 2 consists of two combustion turbine generators. Each CTG is expected to generate approximately 103 MW with a power factor of 0.85.

For power block 1, the combustion turbine generators would each be connected to the low side of its dedicated 162/215/270 Megavolt Ampere (MVA) generator step-up (18/230 kV) transformer through its own 10,000-ampere generator circuit breaker, via a short 10,000-ampere isolated phase bus. The steam turbine generator would be connected through its own 9,000-ampere generator circuit breaker via a short 10,000-ampere isolated phase bus to the low side of its dedicated 171/228/285 MVA generator step-up (18/230 kV) transformer.

The high sides of the generator transformers would each be connected through their dedicated 2,000-ampere breakers and 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 disconnect switch, a 2,000-ampere breaker, and a motor-operated disconnect switch with ground, to the SCE Huntington Beach Switching Station.

For power block 2, combustion turbine generators unit 1 and unit 2 would each be connected to the low side of their dedicated 72/96/120 MVA generator step-up (13.8/230 kV) transformer through their own 8,000-ampere generator circuit breaker via a short 6,000-ampere isolated phase bus.

The high sides of the block 2 generator transformers would each be connected through dedicated 2,000-ampere circuit breakers and a 2,000-ampere motor-operated disconnect switch with ground to the common generator tie bus. A single 230 kV generator tie-line would connect power block 2 through a 2,000-ampere breaker and a 2,000-ampere motor-operated disconnect switch with ground to the SCE Huntington Beach Switching Station.

The overhead generator tie-line 1 would be built with 1033.5 thousand circular mil (kcmil) Aluminum Conductor Steel Supported (ACSS) that is approximately 0.22 mile-long. The overhead generator tie-line 2 would also be built with 1033.5 kcmil ACSS conductor that is approximately 0.16 mile-long. Power would be distributed to the SCE transmission grid through the Huntington Beach Switching Station. The ACSS is not typically used for generator interconnections and is rated at a higher operating temperature (200 degrees Celsius) than other transmission equipment which is typically rated at 80 degrees Celsius. A conductor like an Aluminum Conductor Steel Reinforced is more common and is typically rated at an 80 degree Celsius operating temperature.

Since the amended HBEP output is less than the approved HBEP, there will not be any additional downstream transmission impacts other than those identified in the HBEP California ISO Phase II Interconnection Study Report dated December 3, 2013. The Study Report is still valid and no new study is required. No new environmental impact analysis is necessary (HBEP 2015a section 2.0, HBEP 2015i Figure DR 57A-1, HBEP 2015n).

CONCLUSIONS AND RECOMMENDATIONS

The proposed transmission facilities between the new generators at the HBEP and SCE Huntington Beach Switching Station including the step-up transformers, the 230 kV overhead transmission lines, and terminations, are acceptable and would comply with all applicable LORS. The interconnection with the transmission grid would not require additional downstream transmission facilities (other than those proposed by the applicant) that require CEQA review.

The amended HBEP would not cause additional downstream transmission impacts other than those identified in the Queue QC5 Phase II Interconnection Study Report dated December 3, 2013, from California ISO. The Study Report is still valid and no new study would be required.

Staff proposes no changes to Conditions of Certification **TSE 1-5**. The amended HBEP would comply with LORS.

PROPOSED CONDITIONS OF CERTIFICATION

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

Verification: 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 Large Generator Interconnection Agreement (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 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.
- 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 California ISO and the project owner and approved by the Federal Energy Regulatory Commission.

Prior to the start of construction 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 ISO prior to synchronizing the facility with the California Transmission system:

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

¹ Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

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

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

TSE-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.

REFERENCES

California ISO (California Independent System Operator) 1998a – California ISO Tariff Scheduling Protocol posted April 1998, Amendments 1,4,5,6, and 7 incorporated.

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CEC 2014d – Final Staff Assessment (TN 202405). Submitted to CEC/ Docket Unit June 2, 2014.

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HBEP 2012a - AES Southland Development, LLC/Stephen O’Kane (TN 66003). Application for Certification (AFC), Volume I & II, dated, 06/27/2012. Submitted to CEC/ Dockets on 06/27/2012.

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HBEP 2013kk – Stoel Rives LLP/Melissa A. Foster (TN 200631). California Independent System Operator’s (California ISO)’s Phase I Interconnection Study Report (Transmission System Engineering) for HBEP, dated 09/24/13. Submitted to CEC/Dockets on 09/24/2013.

HBEP 2013ss – Stoel Rives LLP/Melissa A. Foster (TN 201469). CA ISO Cluster 5 Phase II Interconnection Study, dated 12/3/13. Submitted to CEC/Dockets on 12/23/2013.

HBEP 2015a – Petition to Amend With Appendices (TN 206087). CEC/Docket Unit on September 9, 2015.

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NERC – (North American Electric Reliability Council). 2006. Reliability Standards for the Bulk Electric Systems of North America, May 2006.

WECC – (Western Electricity Coordinating Council) 2006 – NERC/WECC Planning Standards, August 2006.

Alternatives

ALTERNATIVES

Testimony of John Hope, Matthew Layton, and David Vidaver

SUMMARY OF CONCLUSIONS

Staff reviewed alternatives previously analyzed for the licensed Huntington Beach Energy Project (HBEP), including alternative site configurations, alternative generation technologies, and the “no project” alternative. Staff has augmented the discussion of preferred resources and included an analysis of clutch technology. Alternatives previously found to be infeasible remain infeasible, and would not substantially reduce one or more significant effects of the amended HBEP. In addition, no new information shows alternatives which are considerably different from those analyzed in the previous staff assessment for the licensed HBEP that would substantially reduce one or more significant effects on the environment. Therefore, in accordance with California Environmental Quality Act (CEQA) Guidelines section 15162, staff concludes that no supplementation to the 2014 Commission Decision (Decision) is necessary for Alternatives. The Committee may rely upon the environmental analysis and conclusions of the Decision with regards to Alternatives and does not need to re-analyze them.

INTRODUCTION

Staff reviewed the 2014 Commission Decision and analyzed the changes to the licensed HBEP, which include:

- Replacing Block 1 with a two-on-one combined-cycle gas turbine (CCGT) configuration,
- Replacing Block 2 as licensed with two simple-cycle gas turbines (SCGT) units,
- Using a natural-gas-fired auxiliary boiler to support the CCGT power block,
- Using a set of natural gas compressors in each power block,
- Constructing other equipment and facilities to be shared by both power blocks,
- Constructing the project on 30 acres within the footprint of the existing Huntington Beach Generating Station (HBGS), and
- Adding a 22-acre area for temporary construction laydown and construction worker parking at the former Plains All-American Tank Farm property.

SUMMARY OF THE DECISION

The list below provides a short summary of the licensed HBEP Commission Decision with regards to project alternatives. Based on the evidence presented in the original proceeding, the Energy Commission made the following findings and conclusions:

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 effects.

ENVIRONMENTAL IMPACT ANALYSIS

Staff’s alternatives analysis for the modified HBEP is guided in part by CEQA Guidelines section 15126.6(f)(2)(C), which states: “Where a previous document has sufficiently analyzed a range of reasonable alternative locations and environmental impacts for projects with the same basic purpose, the lead agency should review the previous document. The EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 573).”

The modified HBEP proposes to change the licensed HBEP by primarily replacing two independently operating, three-on-one, CCGT power blocks. As licensed, HBEP is a 939-megawatt (MW) power plant with each power block consisting of three-gas-fired combustion turbine generators (CTG), three supplemental-fired heat recovery steam generators (HRSG), one steam turbine generator (STG), an air-cooled condenser, and related ancillary equipment.

The proposed modified HBEP would replace Block 1 with a two-on-one CCGT configuration consisting of two General Electric (GE) gas turbines and two HRSGs without supplemental firing, a STG, an air-cooled condenser, and related ancillary equipment, with nominal summer capacity of 644 MWs (net). In addition, Block 2 would be replaced with two GE SCGT units with a nominal capacity of 200 MWs.

In addition, the proposed modified HBEP would use a natural-gas-fired auxiliary boiler to support the CCGT power block, use a set of natural gas compressors in each power block, and construct other equipment and facilities to be shared by both power blocks, including water treatment facilities, emergency services, and administration and maintenance buildings. The proposed modified HBEP would be constructed on 30 acres within the footprint of the existing HBGS which includes the licensed 28.6-acre site plus an additional 1.4 acres of paved area previously evaluated as temporary construction parking that the project owner acquired from Southern Californian Edison. Construction of the proposed modified HBEP would also use an additional area for temporary construction laydown and construction worker parking at the former Plains All-American Tank Farm property to the southeast of the licensed site. As part of the proposed modified HBEP, a total of 22 acres of combined construction parking and construction laydown is proposed at the Plains All-American site, whereas the licensed HBEP included 1.9 acres of construction parking on the Plains All-American Tank Farm site.

ALTERNATIVE SITES EVALUATION

The 2014 Decision concluded the location of the licensed HBEP cannot vary substantially from the HBGS site and established a firm connection between the licensed HBEP and the existing HBGS. The 2014 Decision concluded 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 and 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 Decision questioned the ability of developing a different site that could meet the project objectives and questioned whether any off-site alternative would allow the project to remain a viable project given the likely extreme project schedule delay that would accompany a change of project site. These circumstances remain substantially the same for the amended HBEP and, therefore, there is no need to reconsider alternative sites.

ALTERNATIVE SITE CONFIGURATIONS

The 2014 Decision evaluated the potential to reconfigure the project elements on the HBGS site to avoid or lessen noise, visual, and coastal impacts. The Decision concluded reconfiguring the site layout would not significantly lessen or avoid any operational noise impacts. Regarding visual impacts, the Decision concluded moving the visually prominent structures within the HBGS site would not reduce their visibility from sensitive viewpoints to any great extent and would not significantly lessen or avoid visual impacts. Related to coastal resources, the Decision concluded impacts identified in a report by the California Coastal Commission on the licensed HBEP primarily relating to Land Use, Noise and Vibration, and Visual Resources, would not be significantly lessened or avoided by reconfiguration of the project site (CCC 2014). These circumstances remain substantially the same for the amended HBEP and, therefore, there is no need to reconsider alternative site configurations.

ALTERNATIVE GENERATION TECHNOLOGY

The 2014 Decision evaluated primarily whether alternative generation technologies would reduce air quality impacts of the licensed HBEP. The technologies evaluated included conventional boiler and steam turbine, simple-cycle combustion turbine, alternate equipment, renewable resources, and recycled water.

The conventional boiler and steam turbine technology was eliminated from further consideration because this technology would not qualify for the South Coast Air Quality Management District's Rule 1304 exemption for emissions offsets. Simple-cycle combustion turbine was eliminated from further consideration because it would not reduce or avoid any impacts associated with implementing the licensed HBEP. Alternate equipment was eliminated from further consideration because it would not meet all of the project objectives. Renewable resources were eliminated from further consideration because they were found to be infeasible. Recycled water was eliminated from further consideration because it was found to be infeasible for the cooling demand of the licensed HBEP and for its unavailability to replace once-through-cooling (OTC). These circumstances remain substantially the same for the amended HBEP and, therefore, there is no need to reconsider alternative generation technologies.

CLUTCHES AND SYNCHRONOUS CONDENSERS

Recent Energy Commission project siting committees have asked whether and when clutches could be installed, and what that would mean for the project's impacts. Since clutches were not proposed in this application for certification and HBEP would not have any significant environmental effects that would be reduced or avoided by the inclusion of clutches, staff did not consider clutches as an alternative for the purpose of complying with CEQA in this analysis. Therefore, staff is providing the following information on clutches for informational purposes only.

California has a large, geographically diverse, interconnected generation system. Ancillary services in support of the grid, such as voltage and frequency regulation, sometimes called volt-ampere reactive (var), can be provided incidentally when generators are online providing capacity and energy (megawatts and megawatt hours), or through dedicated equipment including synchronous condensers or capacitors. On November 23, 2015, the California Independent System Operator (CAISO) sent a letter to the California Public Utilities Commission (CPUC) with a copy provided to the Energy Commission (CAISO 2015a). The CAISO recommended that the clutch technology that allows fossil fuel-fired generation units to operate temporarily as synchronous condensers be considered as a "default option in procurement decisions" by the CPUC.

The clutch allows a generator to disconnect from its prime mover (e.g., combustion or steam turbine) and synch up to the electricity grid to provide voltage and frequency support. The clutches are commercially available, as are the controls to synch and control the generator as it operates as a synchronous condenser. The clutches and controls are feasible on a variety of turbines, and appear on a small number of California combustion turbines. However, they are not generally used by California utilities to provide the ancillary services they potentially offer. To date, only Los Angeles Department of Water and Power is using clutches it has recently installed to operate the associated generators as synchronous condensers. Two legacy steam turbine generators, Huntington Beach Generating Station Units 3 and 4, are now operating as synchronous condensers. The shafts to the steam turbine were permanently disconnected, avoiding the need for a clutch. New equipment was added to ramp up, sync, and control the synchronous condenser operations, and some form of a contract is in place to pay for the services provided.

Because vars do not travel well it may be most efficient, as described in other reports by the CAISO and as seen in activities in SCE and San Diego Gas and Electric, to install stand-alone voltage support components at a time and very specific location they are needed. This may be a moving target as the system integrates 33 percent and then to 50 percent renewable generation. The relative costs of achieving voltage support with clutches should be compared to other measures (ranging from developing stand-alone equipment, distributed generation, demand-side measures, batteries, storage, to electrifying the transportation sector). Further, as the system evolves, certain assets will become “stranded” to a degree that they can offer fewer services to the grid, or that portion of the grid needs fewer services. Adding features to a new turbine generating unit may appear efficient, but could result in a more expensive/multipurpose facility, but stranded asset none the less.

Potential Clutch Installation at the Amended HBEP

There would be five turbine generators at the amended HBEP – two CTGs and one STG in the combined-cycle Power Block 1 and two CTG peakers in Power Block 2. While there appears to be the potential to deploy this technology at the amended HBEP, the use, and any potential system or environmental benefits realized, of this technology at a given power plant occurs only when:

1. There is a need for location specific ancillary/grid support services;
2. The plant is not needed for (a) energy or (b) ancillary services other than voltage support, if provision of these services requires the plant to be operating and producing energy. When needed for energy or spinning reserve, the generator and engine are connected and the plant is producing energy and providing voltage support; the fact that it *can* provide the latter without generating energy is irrelevant at that point in time; and,

3. The synchronous condenser is needed for voltage support but the energy and capacity not provided by the plant are provided by a plant *that is more efficient/lower emitting than the local plant that it replaces*. Reliance on a synchronous condenser to provide the needed voltage support would require replacing the energy it would have provided; while the replacement energy might be cleaner (e.g., from a renewable generator), it might not, depending on load levels, time of day, etc.

For the amended HBEP Power Block 1 combined-cycle unit, it is unlikely that any of the three turbine generators would be candidates for clutches, for the following reasons:

- Combined cycles are more efficient than simple-cycle peakers, and therefore they may already be online and operating and providing incidental ancillary services along with the contracted real power (MW and MWhrs). In other words, if already operating, there would be no opportunity or need to operate as an independent synchronous condenser, as laid out in Number 2 above.
- Combined cycles are generally designed for optimum performance at expected or contracted operations obligations. Therefore, the project owner needs, or prefers, to have the combined cycle available to operate when required. If operating as a synchronous condenser prevents or limits the responsiveness to dispatch requests, the project owner may be penalized or miss revenue opportunities.
- In California, air regulations do not permit the turbine exhaust to bypass the oxidation and selective catalytic reduction catalysts located in the HRSGs, so either the HRSG has to be designed to operate “dry” or the cooling tower has to be sized large enough to take all the steam dumped from the HRSG if the steam turbine is taken off line via a clutch.

For the two simple-cycle CTGs in the amended HBEP Power Block 2, there would be the potential to install and use clutches because:

- The same GE LMS100 CTGs planned for the amended HBEP have been recently delivered and are operating in California with clutches; and,
- The petitioner has indicated there is adequate space (about 20 feet) to insert a clutch unit between the combustion turbine and the generator.

However, the technical feasibility does not answer:

- Whether there is a need for such ancillary services at this location;
- Whether there is a need for such ancillary services at this location once the proposed efficient, flexible, dispatchable combined cycle is constructed and operating;
- If the petitioner could negotiate satisfactory terms with the CTG vendor that would warranty the CTG with the clutch installed and in use; and,
- How a power purchase agreement would be crafted to allow the petitioner to install and operate the clutch and control equipment while recovering costs?

In other words, technical feasibility does not address the questions of need, function, or economics. The determination of the need for vars would be no different than the consideration of need for capacity or real power – determining whether or not vars are needed at a location would be outside the Energy Commission's siting purview.

Potential Effects of Clutch Installation

There may be an opportunity well after the Energy Commission finalizes its decision on this petition to amend for the local utility and the project owner to agree on var procurement from the proposed simple-cycle CTGs in Power Block 2. This would occur before the two simple-cycle CTGs are purchased and installed. Staff does not believe it is workable to put in a place-holder-shaft in a gap left for the clutch. The place-holder, or extended shaft, would have to be supported, making it nearly as complicated and expensive as the clutch itself. Staff agrees that the decision about the clutch should be made when specifications are prepared for purchase of the CTG unit. Further, while staff believes an amendment to the Decision would be required, it would be a simple amendment and would likely not result in significant impacts. Staff does not recommend fully analyzing the clutch now as we believe it to be speculative (the project owner does not have a contract for peaker services, much less, for ancillary services that would be provided by a clutch and synchronous condenser controls).

The clutch and its housing for an LMS100 CTG are about 20 feet long but no taller or wider than the combustion turbine or generator housings it would be located between. It would require a foundation. Given the site is a brown field site, staff does not foresee any significant impacts (e.g., no additional noise, no new visual impacts, manageable biological or cultural effects, no additional water use or storm water impact, no change in unit availability or reliability, etc.) from the installation and operation of a clutch/synchronous condenser. Staff agrees that losses of output and efficiency would be negligible, but losses none the less, from having to spin up and overcome friction in the clutch and its bearings. This could result in additional fuel use and emissions, or a loss of output and efficiency, at the amended HBEP. Staff believes the changes would be small.

There would also be some electricity demand from the grid to keep the generator synched to the grid. (How that electricity would be fed back from the grid, and paid for, would have to be laid out in a contract for the ancillary services.) However, the amount of electricity is low, about 1 percent of the generator rating (or 1 MW for the LMS100 nominal 100 MW generator). The CAISO is the agency primarily responsible for determining the need for voltage support in the balancing authority area, as well as the impact and effectiveness of existing or proposed resources in its provision. In comments on the need for, and impact of installing synchronous condenser technology at the Amended Carlsbad Energy Center Project site, it stated:

“The [CPUC’s] Alternate Proposed Decision includes language directing SDG&E to study the addition of synchronous condenser technology, commonly referred to as a “clutch,” at the Carlsbad Energy Center facility. In response to the Alternate Proposed Decision, the CAISO analyzed both peak forecast and lower load level scenarios to test whether the addition of synchronous condenser technology could enable a reduction in the amount of gas-fired generation (and associated emissions) that the Carlsbad Energy Center would otherwise be expected to produce. In recent years, the CAISO has approved significant upgrades to the Southern California transmission system to address reactive power needs and will continue to update and evaluate the adequacy of these solutions in future planning studies. The CAISO targeted these upgrades at locations that were both highly electrically efficient and feasible at times of peak system loading with some locations having expansion capabilities for even more reactive support should it become necessary. Due to the specific circumstances of localized voltage stability, the thermal limitations in the area, and the development of better-situated synchronous condensers in the area, the CAISO has not been able to confirm that the synchronous condenser technology at Carlsbad would enable any material reduction in gas-fired generation output. Assuming that the transmission system upgrades and [CPUC]-authorized procurement are realized in a timely manner, synchronous condenser technology at the Carlsbad Energy Center may not provide material emission reduction benefits [emphasis added]. Therefore, based on a preliminary analysis, the CAISO has not been able to identify significant benefits to the installation of synchronous condenser technology at the Carlsbad Energy Center.”¹

Avoided emissions (i.e., emissions savings that arise when the plant would not otherwise be operating) are complex given the interconnectedness of the modern grid. If the amended HBEP operates and thus also provides ancillary services, a unit elsewhere in the grid does not have to operate and its potential emissions may be avoided. However, if the amended HBEP operates as a synchronous condenser, it still uses some nominal amount of electricity, and the emissions associated with the generation of that small amount of electricity would occur. Further, the electricity that would have been provided by the amended HBEP now has to be generated elsewhere on the grid.

PREFERRED RESOURCES

The 2014 Commission Decision considered “preferred resources,” including energy efficiency and demand response programs, and concluded they were not alternatives to the HBEP. Staff has augmented the discussion of preferred resources in this Alternatives analysis for the amended HBEP.

¹ *Comments of the California Independent System Operator Corporation on Alternative Proposed Decision*, filed in California Public Utilities proceeding A.14-07-009, April 27, 2015.

Several large aging power plants on the Southern California coast are retiring during 2017 – 2020 as a result of the State Water Resources Control Board's policy to reduce the biological impacts of once-through cooling. These plants are located in transmission-constrained areas in which threshold amounts of generation capacity are needed to ensure that standards for reliable system operation are met. Accordingly, in its 2012 Long-term Procurement Planning (LTPP) proceeding, the CPUC considered the need for replacement of natural gas-fired generation capacity. It found a need for 1,000 MWs of such capacity in the CAISO-defined Los Angeles Basin area and authorized SCE to procure it (CPUC 2013a). SCE entered into a contract with the HBEP to meet a share of this authorization/need, and applied for recovery of costs incurred under the contract. This application was approved on November 19, 2015 (CPUC 2015).

State policy includes a *loading order* for electric generation that prefers and maximizes cost-effective, reliable, and feasible energy efficiency, demand response programs and measures, and renewable generation to supplant the need for new fossil fuel generation. These "preferred resources" can and do provide services that may obviate the need for natural gas-fired generation, and the CPUC imposes the loading order on utility procurement (Pub. Utilities Code, § 454.5(b)(9)(C)). In authorizing the procurement of new natural gas-fired generation capacity in the Los Angeles Basin, however, the CPUC found that at least 1,000 MWs of capacity with the characteristics of natural gas-fired generation were needed in the area, and that cost-effective preferred resources in amounts that would reduce this capacity need below 1,000 MWs could not feasibly or reliably be developed. Its decision also required SCE to demonstrate that all cost-effective preferred resources offered in response to a Request for Offers in the western Los Angeles area were procured by the utility.

The HBEP and the Reliable Operation of the Electricity System

In May 2010, the State Water Resources Control Board adopted a statewide *Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy). The OTC Policy requires existing power plant operators to implement measures to reduce impingement mortality and entrainment of marine life, and established compliance deadlines. In light of likely compliance by the owners of OTC units by shutting them down, and the large amount of OTC capacity in transmission-constrained areas in Southern California, the CPUC devoted a share of the 2012 LTPP proceeding (CPUC 2012a) to consideration of the potential need for new natural gas-fired generation to meet local reliability requirements in the CAISO defined Los Angeles Basin, San Diego, and Big Creek - Ventura areas. Such generation, if necessary, would be required to meet reliability standards imposed by the North American Electric Reliability Council (NERC) and Western Electricity Coordinating Council (WECC), which require load to be served in the areas under once-in-ten-year demand conditions even after the sequential failure of two major system components (generation units and transmission lines).

The CPUC authorized SCE to procure between 1,400 MWs – 1,800 MWs of new resource capacity in the West Los Angeles sub-area of the CAISO-defined Los Angeles Basin Local Reliability Area (CPUC 2013a). This was done to maintain reliability after the expected retirement of 14 units at four generation facilities in the sub-area (Alamitos, El Segundo, Huntington Beach and Redondo Beach), totaling 4,386 MWs of capacity, on or prior to December 31, 2020, pursuant to compliance deadlines set forth in the OTC policy. The MWs authorized were largely based on CAISO testimony in the form of a local capacity technical study of capacity needed in the West Los Angeles sub-area over a ten-year planning horizon to meet the NERC and WECC standards discussed above (CPUC 2013a, pp. 15-16). Of this capacity, at least 1,000 MWs, but no more than 1,200 MWs was required to be from conventional gas-fired resources (p. 131); the remaining capacity was to come from preferred resources. A subsequent decision (CPUC 2014a) in the same proceeding considered additional capacity needs potentially arising from the retirement of the San Onofre Nuclear Generating Station, and increased the ceiling on new conventional gas-fired generation capacity to 1,500 MWs.

On November 21, 2014, SCE submitted an application to the CPUC to approve the recovery of costs incurred in entering into a contract with AES for the development of the HBEP, selected by SCE pursuant to a Request for Offers to provide a share of the authorized capacity. CPUC approved SCE's request (CPUC 2015).

Preferred Resources as Substitutes for Dispatchable Natural Gas-Fired Generation

The state's loading order established by the energy agencies in 2003 calls for meeting new electricity needs first with efficiency and demand response (jointly, demand-side management), followed by renewable energy and distributed generation, and only then with efficient utility-scale natural gas-fired generation. Section 454.5(b)(9)(C) of the California Public Utilities Code addresses requirements for an electrical corporation's proposed procurement plan, including the requirement to "first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible." In recent years, energy storage has achieved preferred resource status due to its ability to (a) absorb over-generation that may occur at high levels of solar penetration and, (b) reduce the need for natural gas-fired generation and associated capacity to meet ramping needs during evening hours when solar resource output declines to zero.

Preferred resources can provide many of the services provided by dispatchable, natural gas-fired generation. The ability of individual resources (energy efficiency, demand response, utility-scale and distributed renewable generation, and storage) to provide specific services is discussed below.

Energy Efficiency

Energy efficiency entails using less energy to provide the same service such as by improving the efficiency of air conditioners or the insulation characteristics of building shells, thereby using less energy to keep the temperature of a building at desired levels. Continued development and implementation of comprehensive, long-term energy efficiency strategies and programs remains the top priority to offset increased energy demand. The CPUC oversees the investor-owned utilities (IOU) energy efficiency programs, and many of the state's municipal utilities administer similar programs. These efforts are funded by 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. The CPUC issues decisions approving the electric energy efficiency budgets for the state's IOUs. For 2013–2015, the approved electricity energy efficiency budgets for the state's three major IOUs total \$2.388B (CPUC 2012b, pp. 102-103; CPUC 2014b, pp. 104-105).

SB 350 (2015) reflects California's commitments to energy efficiency in its efforts to transition to a low-carbon economy. The bill requires the Energy Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings by January 1, 2030, and requires the CPUC (for investor-owned utilities) and local publicly owned utilities to establish efficiency targets consistent with this goal.

Energy efficiency programs can serve as substitutes for dispatchable, natural gas-fired generation such as the HBEP by: (1) reducing the amount of electricity that needs to be generated when targeted at consumption during high-demand hours and when flexible generation is needed most, and (2) reducing the need for natural gas-fired generation capacity, as well as the need for load-serving entities to procure such capacity to satisfy CAISO- and CPUC-imposed system-wide resource adequacy requirements. In targeting consumption in the western Los Angeles sub-area, energy efficiency programs can reduce the need for conventional generation in the area and the need to procure such capacity to satisfy resource adequacy requirements for local (Western Los Angeles) and flexible resources. Energy efficiency programs are thus capable of reducing the need for energy and capacity-related reliability services that conventional natural gas-fired generation such as the HBEP would provide. But energy efficiency cannot eliminate the need for all natural gas generation such as HBEP because some level of reliable energy is necessary. Therefore, energy efficiency is not a viable alternative to the generation HBEP would provide.

Demand Response

Demand response (DR) programs provide an economic incentive for end-users to modify energy use, whether through direct payments to reduce consumption when requested to do so (i.e., event-triggered DR programs) or rate structures that encourage reducing energy use during hours in which generation is expensive and/or system reliability is threatened. On September 25, 2013, the CPUC authorized a new rulemaking (R.13-09-011), in part, to facilitate the participation of aggregated loads in ancillary service markets, allowing them to directly compete with generation resources in providing reliability services and to satisfy resource adequacy requirements imposed on load-serving entities in exchange for a stream of revenue (CPUC 2013b).

DR continues to play an important role in meeting California's capacity planning, including requirements for peak summer demand. These programs are operated by the state utilities; DR programs operated by the IOUs meet roughly 5 percent of total CAISO system resource adequacy capacity requirements (CAISO 2015, pg. 25). DR has attributes that can partially meet some of the HBEP's project objectives by: (1) contributing to or reducing the need for capacity-related reliability services, including an array of ancillary services (regulation and spinning reserves), and (2) reducing the need for flexible generation if called upon during hours in which ramping needs are highest. When such programs reduce loads in the western Los Angeles area, they reduce local capacity requirements. DR programs can facilitate the integration of renewable resources by meeting incremental needs for regulation and reserves and reducing ramping needs. Unlike gas-fired generation, DR can absorb load during periods of renewable over-generation (a condition that occurs when total supply exceeds total demand in the CAISO balancing authority area). But demand response cannot eliminate the need for all natural gas generation such as HBEP because some level of reliable energy is necessary. Therefore, demand response is not a viable alternative to the generation HBEP would provide.

Utility-Scale and Distributed Renewable Generation

California's transition to a low-carbon economy requires dramatically reducing greenhouse gas (GHG) emissions from the electricity sector, in turn allowing other economic sectors (e.g., transportation, industry) to transition from fossil fuels to electricity as a primary fuel source. A primary vehicle for reducing sectorial GHG emissions is the state's Renewable Portfolio Standard (RPS), which requires that providers of retail electricity procure a minimum share of energy (measured as a percentage of retail sales) from renewable sources. SB 1078 (2002) established an RPS of 20 percent by 2017; SB 107 (2006) accelerated the RPS to 2010. SB 2 then increased the RPS to 33 percent by 2020. Finally, SB 350 (2015) increased it to 50 percent by 2030. It is estimated that an amount equal to 25 percent of their retail sales was procured by California load-serving entities from renewable sources in 2014.

In 2010, Governor Brown's Clean Energy Jobs Plan established a target of 12,000 MWs of renewable distributed generation (DG) by 2020. As of October 31, 2015, 7,200 MWs of renewable DG was operational, contracts with another 900 MWs had been approved, and 2,200 MWs of capacity was anticipated from various incentive programs (the Renewable Auction Mechanism, Renewable Feed-in Tariff, the Bioenergy Feed-in Tariff, and utility PV programs).²

² http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf

Utility-scale and distributed renewable generation substitute for natural gas-fired generation as sources of energy. To the extent that they can be relied upon to produce that energy during periods of peak or high demand, they are also substitute sources of capacity, thereby reducing the need to build and operate gas-fired generation. When located in transmission-constrained areas such as the Western Los Angeles sub-area, they can provide local capacity, reducing the need to build and operate local natural gas-fired generation, such as the HBEP. But renewable energy cannot eliminate the need for all natural gas generation such as HBEP because some level of reliable energy is necessary to ensure adequate supply through a range of conditions. Therefore, renewable energy is not a viable alternative to the generation HBEP would provide.

Energy Storage

As California increasingly relies on wind and solar resources to meet its energy needs and environmental goals, other energy resources are increasingly called upon to “balance the system.” Expected changes in wind and solar output over the course of a day and random swings due to changing weather conditions both become larger, requiring more flexible, dispatchable natural gas-fired generation to be built and operated to compensate for the variations in wind and solar output.³

Mature, utility-scale technologies include pumped hydro and compressed air storage; several pumped hydro facilities have been operating in California for decades; the 1,212 MWs Helms facility has been operated by PG&E since 1984.

California recognized the key role that storage will play in integrating wind and solar resources in a “high variable energy” system in setting an ambitious target for the procurement of energy storage capacity for 2020. On October 17, 2013 (CPUC 2013c), the CPUC established a target of 1,325 MWs, apportioning it to the transmission and distribution systems and the customer side of the meter.

Energy storage cannot replace generation as a source of energy because it requires injections of energy in excess of the amounts that are discharged when the stored energy is needed. However, energy storage can replace generation capacity by being charged during non-peak hours and discharged on peak, in lieu of dispatching natural gas-fired generation. If located in a transmission-constrained area, storage can replace generation capacity needed for local reliability. But energy storage cannot eliminate the need for all natural gas generation such as HBEP because some level of reliable energy is necessary to ensure adequate supply through a range of conditions. Therefore, energy storage is not a viable alternative to the generation HBEP would provide.

Preferred Resources are not an Alternative to the HBEP

The CPUC found that at least 1,000 MWs of dispatchable, natural-gas fired generation resources are needed in the Western Los Angeles sub-area for local reliability:

³ In some systems (in the Pacific Northwest, for example), there is sufficient dispatchable hydro to balance a wind- and solar-intensive generation fleet. The scale of wind and solar development in California, however, is such that energy storage is expected to absorb surplus generation during mid-day hours, as well as use energy generated during the day to reduce the need for energy and capacity from natural gas-fired generation resources during evening hours.

“The record shows that the most certain technology which can meet LCR [local capacity requirement] needs (from the ISO’s perspective) is gas-fired generation. In order to ensure a base level of procurement certain to ensure reliability under the most stringent criteria, we will require that at least 1,000 MWs in the LA basin local area be from gas-fired generation. (CPUC 2013a, p. 81).”

Selected preferred resources *might* meet the CAISO’s criteria for contributing to local reliability; the CPUC has found that this possibility should be considered by the CPUC and discussed in SCE’s application to procure specific resources:

“The ISO finds that gas-fired generation meets its criteria [for the provision of local reliability services], as well as any other resources (or combination of resources) which have the same performance criteria as gas-fired generation. Demand response resources and CHP [combined heat and power] may meet the ISO’s criteria, but not at this time. It is possible that other resources will pass the ISO test as well in the future. Of course, acquisition of more energy efficiency and demand side resources would reduce the LCR need (CPUC 2013a, pp. 74-75).”

“We will require SCE to consult with the ISO regarding ISO performance characteristics (such as ramp-up time) for local reliability. In its application to procure specific resources to meet local reliability needs (discussed herein), SCE shall provide documentation of such efforts and how SCE meets ISO performance requirements (CPUC 2013a, p. 75).”

Section 454.5(b)(9)(C) of the California Public Utilities Code addresses requirements for an electrical corporation’s proposed procurement plan, including the requirement to “first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible. These requirements were restated in the decision to authorize natural gas-fired generation in the Western Los Angeles sub-area:

SCE’s procurement plan shall be consistent to the extent possible with the multi-agency Energy Action Plan, which places cost-effective energy efficiency and demand response resources first in the Loading Order, followed by renewable resources and then fossil-fuel resources. Energy storage resources should be considered along with preferred resources (CPUC 2013a, p. 3).

As part of our review of SCE’s procurement plan, and when considering SCE’s procurement application, we will require SCE to show that it has done everything it could to obtain cost-effective demand-side resources which can reduce the LCR need, and cost-effective preferred resources and energy storage resources to meet LCR needs. (CPUC 2013a, p. 78)

A substantial share of the testimony and subsequent discussion in the 2012 LTPP proceeding was devoted to determining the appropriate assumptions for the development of preferred resources in the Western Los Angeles sub-area over the planning horizon, which, in turn, largely determined the need for natural gas-fired generation in the area. SCE was directed to procure at least 1,000 MW, but no more than 1,500 MW of NGFG, a directive that would be partially satisfied with the development of HBEP.

NO PROJECT ALTERNATIVE

CEQA requires an evaluation of the “no project” alternative “... to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” (Cal. Code Regs., tit. 14, § 15126.6(e)(1).) The “no project” analysis is to consider the events or actions reasonably expected to occur in the foreseeable future would occur if the project were not approved, based on current plans and consistent with available infrastructure and community services (Cal. Code Regs., tit. 14, § 15126.6(e)(2)). For the purposes of this analysis, the no project alternative is considered to be the construction and operation of the previously licensed HBEP in the 2014 Commission Decision.

All potential environmental impacts from the licensed HBEP were found to have been mitigated to a level of less than significant. In comparison, the amended HBEP would not result in any new or increased significant environmental impacts in all resource areas. In addition, the “no project” alternative would not meet the project objective to align the licensed HBEP with the project configuration directed by the CPUC in its approval of the power purchase agreement between SCE and AES.

RESPONSE TO COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT

The CAISO was the only entity to provide comments on the Preliminary Staff Assessment (PSA) related to alternatives (TN# 212725). However, the applicant provided a response to the CAISO comment letter and makes a request for the FSA (TN# 212948).

Comment: *The CAISO states there is merit to having the clutch capability at the HBEP as a prudent hedge for future uncertainty (beyond the 10-year planning horizon of transmission studies), and to assist in minimizing gas consumption at times where the synchronous condenser capabilities would suffice in meeting local reliability needs. The CAISO continues to state that at a minimum the HBEP should be designed such that it could easily accommodate a clutch installation in the future should the need arise.*

Response: Staff believes the PSA sufficiently and adequately discusses the potential use of clutches as an alternative technology. Specifically, the PSA concludes for the two simple-cycle CTGs in the amended HBEP Power Block 2, there would be the potential to install and use clutches because the same GE LMS100 CTGs planned for the amended HBEP have been recently delivered and are operating in California with clutches, and the petitioner has indicated there is adequate space (approximately 20 feet) to insert a clutch unit between the combustion turbine and the generator. Please refer to the subsection “Clutches and Synchronous Condensers” above.

Comment: *The applicant requests discussion of clutches either be removed from the FSA or clearly labeled as for informational purposes only and not under the heading of a CEQA Alternatives “environmental impact analysis.”*

Response: Staff believes the PSA sufficiently and adequately identifies the discussion of clutches as fulfilling a request of recent Energy Commission project siting committees who have asked whether and when clutches could be installed, and what that would mean for the project’s impacts. Please refer to the subsection “Clutches and Synchronous Condensers” above.

CONCLUSIONS AND RECOMMENDATIONS

In accordance with CEQA Guidelines section 15126.6(f)(2)(C), staff reviewed alternatives previously analyzed for the licensed HBEP, including alternative site configurations,, alternative generation technologies, and the “no project” alternative. Staff has augmented the discussion of preferred resources and included an analysis of clutch technology. Alternatives previously found to be infeasible would not now be feasible, and would not substantially reduce one or more significant effects of the licensed HBEP. Similarly, new information does not show alternatives which are considerably different from those analyzed in the previous staff assessment for the licensed HBEP that would substantially reduce one or more significant effects on the environment. Therefore, in accordance with CEQA Guidelines section 15162, staff concludes that no supplementation to the 2014 Commission Decision is necessary for Alternatives. The Committee may rely upon the environmental analysis and conclusions of the 2014 Commission Decision with regards to Alternatives and does not need to re-analyze them due to the following:

- The changes in the Petition to Amend (PTA) would not create new significant environmental effects or substantial increases in the severity of previously identified significant effects.
- The PTA does not propose substantial changes which would require major revisions of the Alternatives analysis in the 2014 Commission Decision.
- The circumstances under which the modified HBEP would be undertaken would not require major revisions of the Alternatives analysis in the 2014 Commission Decision.

Staff's conclusion is supported by the fact that the Decision for the licensed HBEP contains an acceptable analysis of a reasonable range of alternatives to the project and contains an adequate review of alternative project sites, alternative site configurations, alternative generation technology, and the "no project" alternative.

REFERENCES

- AES 2015** - *Petition to Amend Huntington Beach Energy Project (12-AFC-02C)*. September 14, 2015.
- CAISO 2015** - California ISO, State of California, *2015 Summer Loads and Resources Assessment*, pg. 25. May 7, 2015.
- CAISO 2015a** - California ISO, State of California, Letter from CAISO President Steve Berberich to CPUC President Michael Picker, November 23, 2015. TN206824
- CCC 2014** - California Coastal Commission, *Coastal Commission's 30413(d) Report for the proposed AES Southland, LLC, HBEP AFC*, July 14, 2014. TN202701
- CEC 2014** - California Energy Commission, State of California, *Huntington Beach Energy Project, Final Decision (Order No. 14-1029-1)*. November 2014.
- CPUC 2012a** - California Public Utilities Commission, *Decision Adopting Long-Term Procurement Plans Track 2 Assumptions and Scenarios*. R.12-03-014, December 20, 2012.
- CPUC 2012b** - California Public Utilities Commission, *Decision Approving 2013-2014 Energy Efficiency Program and Budgets*. D.12-11-015, November 8, 2012.
- CPUC 2013a** - California Public Utilities Commission, *Decision Authorizing Long-Term Procurement for Local Capacity Requirements*. D.13-02-015, February 13, 2013.
- CPUC 2013b** - California Public Utilities Commission, *Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements*. R.13-09-011, September 25, 2013.
- CPUC 2013c** - California Public Utilities Commission, *Decision Adopting Energy Storage Procurement Framework and Design Program*. D.13-10-040, October 17, 2013.
- CPUC 2014a** - California Public Utilities Commission, *Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent Retirement of the San Onofre Nuclear Generation Station*. D.14-03-004, March 13, 2014.
- CPUC 2014b** - California Public Utilities Commission, *Decision Establishing Energy Efficiency Savings Goals and Approving 2015 Energy Efficiency Program and Budgets (Concludes Phase I of R.13-11-005)*. D.14-10-046, October 16, 2014.
- CPUC 2015** - California Public Utilities Commission, *Decision Approving, in Part, Results of Southern California Edison Company Local Capacity Requirements Request for Offers for the Western LA Basin Pursuant to Decisions 13-02-015 and 14-03-004*. D.15-11-041 and A.14-11-012. November 19, 2015.

Compliance Conditions and Compliance Monitoring Plan

COMPLIANCE CONDITIONS AND COMPLIANCE MONITORING PLAN

Eric Veerkamp

~~VII.COMPLIANCE CONDITIONS AND COMPLIANCE MONITORING PLAN~~

In this section, changes from the 2014 Commission Decision are shown in ~~strikethrough~~ for deleted text and **bold underline** for new text, and changed information from PSA to FSA is *italicized*.

~~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" (referred to as "Compliance and Closure" in Appendix A) that set forth:~~

- ~~o the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;~~
- ~~o the requirements for handling confidential records and maintaining the compliance record;~~
- ~~o the procedures for settling disputes and making post-certification changes;~~
- ~~o the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed Conditions; and~~
- ~~o 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 included 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.~~

~~HUNTINGTON BEACH ENERGY PROJECT
(12-AFC-02) CONDITIONS OF CERTIFICATION
DEFINITIONS~~

~~DEF-1. DEFINITIONS~~

~~The following terms and definitions apply to all of the Conditions of Certification in this Appendix "A".~~

~~1. Project Certification~~

~~Project certification occurs on the day the Energy Commission docket's Decision.~~

~~2. Site Assessment and Pre-Construction Activities~~

~~Site assessment and pre-construction activities include the following, but only to the extent the activities are minimally disruptive to soil and vegetation and shall not affect listed or special-status species or other sensitive resources:~~

- ~~o the installation of environmental monitoring equipment;~~
- ~~o a minimally invasive soil or geological investigation;~~
- ~~o a topographical survey;~~
- ~~o any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility;~~
- ~~and~~
- ~~o any minimally invasive work to provide safe access to the site for any of the purposes specified in 1-4, above.~~

~~3. Site Mobilization and Construction~~

~~Site mobilization and construction activities are those necessary to provide site access for construction mobilization and facility installation, including both temporary and permanent equipment and structures, as determined by the CPM. Site mobilization and construction activities include, but are not limited to:~~

- ~~o ground disturbance activities like grading, boring, trenching, leveling, mechanical clearing, grubbing, and scraping;~~
- ~~o site preparation activities, such as access roads, temporary fencing, trailer and utility installation, construction equipment installation and~~

~~storage, equipment and supply laydown areas, borrow and fill sites, temporary parking facilities, and chemical spraying and controlled burns; and~~

- ~~e permanent installation activities for all facility and linear structures, including access roads, fencing, utilities, parking facilities, equipment storage, mitigation and landscaping activities, and other installations, as applicable.~~

~~4. System Commissioning and Decommissioning~~

~~Commissioning activities are designed to test the functionality of a facility's installed components and systems to ensure safe and reliable operation. Although decommissioning is often synonymous with facility closure, specific decommissioning activities also systematically test the removal of such systems to ensure a facility's safe closure.~~

~~For compliance monitoring purposes, commissioning activities include interface connection and utility pre-testing, "cold" and "hot" electrical testing, system pressurization and optimization tests, grid synchronization, and combustion turbine "first fire." Decommissioning activity examples include utility shut down, system depressurization and de-electrification, structure removal, and site reclamation.~~

~~5. Start of Commercial Operation~~

~~For compliance monitoring purposes, "commercial operation" or "operation" begins once commissioning activities are complete, the certificate of occupancy has been issued, and the power plant has reached reliable steady state electrical production. Operation activities can include a steady state of electrical production.~~

~~6. Non-Operation~~

~~Non-operation is time-limited and can encompass part or all of a facility. Non-operation can be a planned event, usually for minor equipment maintenance or repair, or unplanned, usually the result of unanticipated events or emergencies.~~

~~7. Closure~~

~~Closure is a facility shutdown with no intent to restart operation. It may also be the cumulative result of unsuccessful efforts to re-start over an~~

~~increasingly lengthy period of non-operation, condemned by inadequate means and/or lack of a viable plan. Facility closures can occur due to a variety of factors, including, but not limited to, irreparable damage and/or functional or economic obsolescence.~~

~~8. Measurement.~~

~~Whenever distance is used in these Conditions of Certification, It shall be measured from the project fence line.~~

INTRODUCTION

The Huntington Beach Energy Project (HBEP) Compliance Conditions of Certification, including a Compliance Monitoring Plan (Compliance Plan), are established as required by Public Resources Code section 25532. The Compliance Plan provides a means for assuring that the facility is constructed, operated, and closed in compliance with public health and safety and environmental law; all other applicable laws, ordinances, regulations, and standards (LORS); and the conditions adopted by the California Energy Commission Decision on the project's Application for Certification (AFC), or otherwise required by law.

The Compliance Plan is composed of elements that:

- set forth the duties and responsibilities of the compliance project manager (CPM), the project owner or operator, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- state procedures for settling disputes and making post-certification changes;
- state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all Energy Commission-approved conditions of certification;
- establish contingency planning, facility non-operation protocols, and closure requirements; and
- establish a tracking method for the technical area conditions of certification that contain measures required to mitigate potentially adverse project impacts associated with construction, operation, and closure below a level of significance; each technical condition of certification also includes one or more verification provisions that describe the means of assuring that the condition has been satisfied.

This section has been updated to reflect current definitions, clarify roles and responsibilities, and changes in amendment processing.

KEY PROJECT EVENT DEFINITIONS

The following terms and definitions help determine when various conditions of certification are implemented.

PROJECT CERTIFICATION

Project certification occurs on the day the Energy Commission docket its decision after adopting it at a publically noticed Business Meeting or hearing. At that time, all Energy Commission conditions of certification become binding on the project owner and the proposed facility. Also at that time, the project enters the compliance phase. It retains the same docket number it had during its siting review, but the letter "C" is added at the end (for example, 12-AFC-2C) to differentiate the compliance phase activities from those of the certification proceeding.

SITE ASSESSMENT AND PRE-CONSTRUCTION ACTIVITIES

The below-listed site assessment and pre-construction activities may be initiated or completed prior to the start of construction, subject to the CPM's approval of the specific site assessment or pre-construction activities.

Site assessment and pre-construction activities include the following, but only to the extent the activities are minimally disruptive to soil and vegetation and will not affect listed or special-status species or other sensitive resources:

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

SITE MOBILIZATION AND CONSTRUCTION

When a condition of certification requires the project owner to take an action or obtain CPM approval prior to the start of construction, or within a period of time relative to the start of construction, that action must be taken, or approval must be obtained, prior to any site mobilization or construction activities, as defined below.

Site mobilization and construction activities are those necessary to provide site access for construction mobilization and facility installation, including both temporary and permanent equipment and structures, as determined by the CPM.

Site mobilization and construction activities include, but are not limited to:

1. ground disturbance activities like grading, boring, trenching, leveling, mechanical clearing, grubbing, and scraping;

2. site preparation activities, such as access roads, temporary fencing, trailer and utility installation, construction equipment installation and storage, equipment and supply laydown areas, borrow and fill sites, temporary parking facilities, chemical spraying, controlled burns; and
3. permanent installation activities for all facility and linear structures, including access roads, fencing, utilities, parking facilities, equipment storage, mitigation and landscaping activities, and other installations, as applicable.

COMMISSIONING

Commissioning activities test the functionality of the installed components and systems to ensure the facility operates safely and reliably. Commissioning provides a multistage, integrated, and disciplined approach to testing, calibrating, and proving all of the project's systems, software, and networks. For compliance monitoring purposes, examples of commissioning activities include interface connection and utility pre-testing, "cold" and "hot" electrical testing, system pressurization and optimization tests, grid synchronization, and combustion turbine "first fire" and tuning.

START OF COMMERCIAL OPERATION

For compliance monitoring purposes, "commercial operation" or "operation" begins once commissioning activities are complete, the certificate of occupancy has been issued, and the power plant has reached reliable steady-state electrical production. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager. Operation activities can include a steady state of electrical production, or, for "peaker plants," a seasonal or on-demand operational regime to meet peak load demands.

NON-OPERATION AND CLOSURE

Non-operation is time-limited and can encompass part or all of a facility. Non-operation can be a planned event, usually for equipment maintenance or repair, or unplanned, usually the result of unanticipated events or emergencies.

Closure is a facility shutdown with no intent to restart operation. It may also be the cumulative result of unsuccessful efforts to re-start over an increasingly lengthy period of non-operation, condemned by inadequate means and/or lack of a viable plan. Facility closures can occur due to a variety of factors, including, but not limited to, irreparable damage and/or functional or economic obsolescence.

ROLES AND RESPONSIBILITIES

Provided below is a generalized description of the compliance roles and responsibilities for Energy Commission staff (staff) and the project owner for the construction and operation of the HBEP project.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

The CPM's compliance monitoring and project oversight responsibilities include:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Decision;
2. resolving complaints;
3. processing post-certification project amendments for changes to the project description, conditions of certification and ownership or operational control, and requests for extension of the deadline for the start of construction (see COM-10 for instructions on filing a PTA or to extend a construction start date);
4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

The CPM is the central contact person for the Energy Commission during project pre-construction, construction, operation, emergency response, and closure. The CPM will consult with the appropriate responsible parties when handling compliance issues, disputes, complaints and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal requires CPM approval, required by a condition of certification, the approval will involve appropriate Energy Commission technical staff and management. All submittals must include searchable electronic versions (.pdf, MS Word, or equivalent files).

Pre-Construction and Pre-Operation Compliance Meeting

The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. These meetings are used to assist the Energy Commission and the project owner's technical staff in the status review of all required pre-construction or pre-operation conditions of certification, and facilitate staff taking proper action if outstanding conditions remain. In addition, these meetings shall ensure, to the extent possible, that Energy Commission's conditions of certification do not delay the construction and operation of the plant due to last-minute, unforeseen issues or a compliance oversight. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

The Energy Commission maintains the following documents and information as public record, in either the Compliance file or Dockets Unit files, for the life of the project (or other period as specified):

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

- all Monthly and Annual Compliance Reports (MCRs, ACRs) and other required periodic compliance reports (PCRs) filed by the project owner;
- all project-related formal complaints of alleged noncompliance filed with the Energy Commission; and
- all petitions for project or condition of certification changes and the resulting staff or Energy Commission action.

CHIEF BUILDING OFFICIAL DELEGATION AND AGENCY COOPERATION

Under the California Building Code standards, while monitoring project construction and operation, staff acts as, and has the authority of, the Chief Building Official (CBO). Staff may delegate some CBO responsibility to either an independent third-party contractor or a local building official. However, staff retains CBO authority when selecting a delegate CBO (DCBO), including the interpretation and enforcement of state and local codes, and the use of discretion, as necessary, in implementing the various codes and standards.

The DCBO will be responsible for facilitating compliance with all environmental conditions of certification, including cultural resources, and for the implementation of all appropriate codes, standards, and Energy Commission requirements. The DCBO will conduct on-site (including linear facilities) reviews and inspections at intervals necessary to fulfill these responsibilities. The project owner will pay all DCBO fees necessary to cover the costs of these reviews and inspections.

PROJECT OWNER RESPONSIBILITIES

The project owner is responsible for ensuring that all conditions of certification and applicable LORS in the HBEP amended Decision are satisfied. The project owner will submit all compliance submittals to the CPM for processing unless the conditions specify another recipient. The Compliance Conditions regarding post-certification changes specify measures that the project owner must take when modifying the project's design, operation, or performance requirements, or to transfer ownership or operational control. Failure to comply with any of the conditions of certification or applicable LORS may result in a non-compliance report, an administrative fine, certification revocation, or any combination thereof, as appropriate. A summary of the Compliance Conditions of Certification are included as Compliance Table 1 at the end of this Compliance Plan.

COMPLIANCE ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision are specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke a project certification and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Decision. The Energy Commission's actions and fine assessments would take into account the specific circumstances of the incident(s).

PERIODIC COMPLIANCE REPORTING

Many of the conditions of certification require submittals in the MCRs and ACRs. All compliance submittals assist the CPM in tracking project activities and monitoring compliance with the terms and conditions of the HBEP Decision. During construction, the project owner or an authorized agent will submit compliance reports on a monthly basis. During operation, compliance reports are submitted annually; though reports regarding compliance with various technical area conditions of certification may be required more often (e.g. AIR QUALITY). Further detail regarding the MCR/ACR content and the requirements for an accompanying compliance matrix are described below.

INVESTIGATION REQUESTS AND COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, sections 1230 through 1232.5, but, in many instances, the issue(s) can be resolved by using an informal dispute resolution process. Both the informal and formal complaint procedures, as described in current state law and regulations, are summarized below. Energy Commission staff will follow these provisions unless superseded by future law or regulations. The California Office of Administrative Law provides on-line access to the California Code of Regulations at <http://www.oal.ca.gov/>.

INFORMAL RESOLUTION PROCESS

Issues related to the construction or operation of a licensed facility should be directed to the CPM who will act as the point person in working with the public and project owner to resolve these concerns.

The CPM can initiate meetings with stakeholders, investigate the facts surrounding the issues, obtain information from the facility owner, work with staff to review documents and information, issue reports and facilitate solutions to issues related to the construction and operation of the facility.

Contacting the CPM seeking an informal resolution may precede the formal Request for Investigation procedure specified in Title 20, California Code of Regulations, section 1231, but is not intended to be a prerequisite or requirement to utilizing the Request for Investigation process. The informal resolution process encourages all parties to openly discuss the conflict and reach a mutually agreeable solution.

Request for Informal Investigation

Any person or agency may request that the CPM conduct an informal investigation of alleged noncompliance with the Energy Commission's conditions of certification. Upon receipt of an informal investigation request, the CPM will promptly provide both verbal and written notification to the project owner of the allegation(s), along with all known and relevant information of the alleged noncompliance. The CPM will evaluate the request and may work to informally resolve a dispute between the parties, or if the CPM determines that further investigation is necessary, will ask the project owner to promptly conduct a formal inquiry into the matter and provide a written report of the investigation results within seven (7) days, along with corrective measures proposed or undertaken. Depending on the urgency of the matter, the CPM may conduct a site visit and/or request that the project owner provide an initial verbal report within 48 hours.

Request for Informal Meeting

In the event that either the requesting party or Energy Commission staff are not satisfied with the project owner's investigative report or corrective measures, either party may submit a written request to the CPM for a meeting with the project owner. The request shall be made within 14 days of the project owner's filing of the required investigative report. Upon receipt of such a request, the CPM will attempt to:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary; and
3. conduct the meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner.

After the meeting, the CPM will promptly prepare and distribute copies to all parties, and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any understandings reached. If no agreement was reached, the CPM will direct the complainant to the formal complaint process provided under Title 20, California Code of Regulations, section 1231.

Any person may file a complaint with the Energy Commission's Dockets Unit alleging noncompliance with a Commission Decision adopted pursuant to Public Resources Code section 25500. Requirements for complaint filings and a description of how complaints are processed are provided in Title 20, California Code of Regulations, section 1231.

POST-CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, to amend the Final Commission Decision in order to modify the design, operation, or performance requirements of the project and/or the linear facilities, or to transfer ownership or operational control of the facility. It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769, and the CPM will determine whether staff approval will be sufficient, or whether Energy Commission approval will be necessary.

A project owner is required to submit a five thousand (\$5,000) dollar fee for every Petition to Amend the license for a previously certified facility, pursuant to Public Resources Code section 25806(e). If the actual amendment processing costs exceed \$5,000.00, the total PTA reimbursement fees owed by a project owner will not exceed the maximum filing fee for an AFC, which is seven hundred fifty thousand dollars (\$750,000), adjusted annually. Implementation of a project modification without first securing Energy Commission approval may result in an enforcement action including civil penalties in accordance with Public Resources Code, section 25534.

Below is a summary of the criteria for determining the type of approval process required, reflecting the provisions of Title 20, California Code of Regulations, section 1769, at the time this compliance plan was drafted. If the Energy Commission modifies this regulation, the language in effect at the time of the requested change shall apply. Upon request, the CPM can provide sample formats of these submittals.

AMENDMENT

The project owner shall submit a Petition to Amend the Energy Commission Decision, pursuant to Title 20, California Code of Regulations, section 1769 (a), when proposing modifications to the design, operation, or performance requirements of the project and/or the linear facilities. If a proposed modification results in an added, changed, or deleted condition of certification, or makes changes causing noncompliance with any applicable LORS, the petition will be processed as a formal amendment to the Decision, triggering public notification of the proposal, public review of the Energy Commission staff's analysis, and consideration of approval by the full Energy Commission.

CHANGE OF OWNERSHIP AND/OR OPERATIONAL CONTROL

Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769 (b). This process requires public notice and approval by the full Energy Commission, but does not require submittal of an amendment processing fee.

STAFF-APPROVED PROJECT MODIFICATION

Modifications that do not result in additions, deletions, or changes to the conditions of certification, that are compliant with the applicable LORS, and that will not have significant environmental impacts, may be authorized by the CPM as a staff-approved project modification pursuant to section 1769 (a)(2). Once the CPM files a Notice of Determination of the proposed project modifications, any person may file an objection to the CPM's determination within 14 days of service on the grounds that the modification does not meet the criteria of section 1769 (a)(2). If there is a valid objection to the CPM's determination, the petition must be processed as a formal amendment to the Decision and must be considered for approval by the full Energy Commission at a publically noticed Business Meeting or hearing.

VERIFICATION CHANGE

Pursuant to section 1770(d), a verification may be modified by the CPM, after giving notice to the project owner, if the change does not conflict with any condition of certification.

EMERGENCY RESPONSE CONTINGENCY PLANNING AND INCIDENT REPORTING

To protect public health and safety and environmental quality, the conditions of certification include contingency planning and incident reporting requirements to ensure compliance with necessary health and safety practices. A well-drafted contingency plan avoids or limits potential hazards and impacts resulting from serious incidents involving personal injury, hazardous spills, flood, fire, explosions or other catastrophic events and ensures a comprehensive timely response. All such incidents must be reported immediately to the CPM and documented. These requirements are designed to protect the public, build from "lessons learned," limit the hazards and impacts, anticipate and prevent recurrence, and provide for the safe and secure shutdown and re-start of the facility.

FACILITY CLOSURE

The Energy Commission cannot reasonably foresee all potential circumstances in existence when a facility permanently closes. Therefore, the closure conditions provided herein strive for the flexibility to address circumstances that may exist at some future time. Most importantly, facility closure must be consistent with all applicable Energy Commission conditions of certification and the LORS in effect at that time.

Prior to submittal of the facility's Final Closure Plan to the Energy Commission, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

With the exception of measures to eliminate any immediate threats to public health and safety or to the environment, facility closure activities cannot be initiated until the Energy Commission approves the Final Closure Plan and Cost Estimate, and the project owner complies with any requirements the Energy Commission may incorporate as conditions of approval of the Final Closure Plan.

RESPONSE TO PSA COMMENTS

AES HUNTINGTON BEACH ENERGY, LLC

AES Huntington Beach Energy, LLC provided staff a number of comments in the “Project Owners Comments on the Preliminary Staff Assessment”, dated July 21, 2016.

Comment:

In the opening paragraph of their comments on page 18, the project owner makes a general statement that staff has not used the HBEP October 29, 2014 Final Commission Decision conditions of certification as the baseline to show proposed changes, and that they reserve the right to submit additional comments when staff provides revised Compliance conditions of certification based on the conditions of certification in the HBEP Final Decision. The Project Owner further states that there is no explanation for the rationale or reason that staff has proposed modifications to the conditions of certification.

Response to Comment:

The conditions from the HBEP Final Decision were included in the PSA, with stricken text and inserted text indicated by bold and underline included in comparison fashion, so that the reader can see what the changes are to each and every numbered condition. COM-6 has been modified to more clearly state the continuing submittal requirements for Monthly Compliance Reports, and COM-7 was modified pertaining to submittal of periodic compliance reports and due dates. Additional changes to conditions include COM-10 for recently adopted revisions for Post Certification Amendments and Changes, COM-11 for administrative changes to reporting complaints, COM-12 for Contingency Plan updates, COM-13 for revised incident reporting requirements, and COM-15 for revised procedures for final closure planning.

The introductory portions of the Compliance Monitoring Plan, for example, the definitions, project owner and other party responsibilities, from the HBEP Final Decision, were included verbatim in the first part of the PSA, and are shown as stricken. The new introductory portions of the Compliance Monitoring Plan, based on the Compliance unit’s new standard, followed immediately, shown in bold and underline, indicating new text. For this portion of the Compliance Monitoring Plan, the magnitude of change was so great, that a side-by-side “comparison” showing individual changes was not feasible. The entire revised Compliance Monitoring Plan reflects the Energy Commission’s new standard for the Compliance Conditions and Monitoring Plan, which is very different from what was adopted as part of the HBEP Final Decision in 2014. The new standard Compliance Conditions and Monitoring Plan was developed to incorporate new procedures and compliance elements that will give staff the tools it needs to effectively

administer compliance oversight for the project, as stated on page 7-1 of this document under the heading “Introduction”.

Comment (Reporting of Complaints):

The project owner stated in a comment about COM-11 that there is no basis for modifying the timeframe to report complaints and it should remain as 10 days, or at a minimum, 5 business days.

Response to Comment:

Complaints must be reported to the CPM within five calendar days. At that, the potential for a complaint received on a weekend could go unreported for 9 days. A ten-day deadline, as the project owner suggests, could leave the Energy Commission lacking relevant information for even longer. In order to not hinder staff’s ability to be responsive to, or to be able to subsequently investigate in a timely manner, a potentially dangerous situation, staff is comfortable with 5 business days. Revised language in Condition of Certification COM-11 reflects this change.

Comment (Incident Reporting):

The project owner states on page 18 of their comments that it was discussed at the PSA Workshop that COM-13 Item 1 needed to be deleted. The way COM-13 is written, incident reporting would be required for even the most minor outages, and would be infeasible. The project owner makes the point that a similar item related to dispatch outages was removed from the original proceeding after their protests were upheld. The project owner goes on to say that Item 1 does not relate to assurance of operations in accordance with public health and safety or environmental law. Further, the requirements of Item 1 are overly burdensome and there is no legal basis for the CPM requiring receipt of such information.

The project owner also states the reporting timeframes must be corrected to reflect the timeframes approved in the Final Decision for HBEP, and there is no basis for changing them from what was approved at that time.

Response to Comment:

The purpose of COM-13 is to ensure the CPM receives timely notice regarding incidents at the facility. Staff has revised COM-13 Item 1 to clarify that staff must be notified of any unplanned outage. Unplanned outages are an important event that staff needs to be aware of. Revised language in COM-13 reflects staff’s suggested changes.

Comment (Non-Operation and Repair/Restoration Plans):

The project owner states that for COM-14, the exception for “unplanned maintenance” needs to be restored, since maintenance, whether planned or unplanned, does not fall within “non-operation” that was previously included for HBEP.

Response to Comment:

Staff is comfortable that unplanned maintenance as well as planned maintenance are reasonable exceptions that do not fall within “non-operation” as previously defined; the revised language is found in COM-14.

Comment (Facility Closure Planning):

a: The project owner states that for COM-15, items B.4, B.5, and B.10 referencing “long-term” activities that were deleted from the 2014 Final Decision, as post-closure activities, exceed the Energy Commission jurisdiction.

b: The project owner states that item B.4.d, “including ongoing testing and monitoring protocols” should be deleted, since this is again outside Energy Commission jurisdiction, according to the project owner.

c: Finally, with respect to facility closure planning, the project owner requests deleting the following portion of the last paragraph of COM-15; “the Energy Commission may initiate corrective actions against the project owner to complete facility closure”, stating there is no basis for this change.

Response to Comment:

a: While not in agreement that the term “long-term” activities necessarily represents activities beyond the Energy Commission definition, there is the possibility that the meaning could be taken out of context within the framework of COM-15. The concern is that of activities required between the time a plant is shuttered and the time the site is fully remediated, not after the site has been fully cleaned up and/or remediated. Therefore, staff is comfortable striking the term “long-term” in the instances cited by the project owner. Revised language is reflected in COM-15.

b: With respect to ongoing testing and monitoring, since what is at issue is not long-term maintenance after the plant has been remediated, but rather from the time the plant is shut down, staff is comfortable eliminating the phrase, “including ongoing testing and monitoring protocols”. Any measures in effect at the time the plant is shuttered would still be in full force and effect until such time as the plant is demolished and remediated; therefore, eliminating the phrase does not limit the Energy Commission ability to enforce those measures already in place. Revised language in response to this comment is reflected in COM-15.

c: Retaining the language giving the Energy Commission the authority to initiate correction actions against a project owner if the owner fails to follow through on closure activities, is a protection that staff would like to see retained. Unless there are other reasonable safeguards in place that would prevent a situation from occurring that could potentially leave the people of California unprotected from a project owner disinclined to complete facility closure activities, then this language should remain.

COMPLIANCE AND CLOSURE

COMPLIANCE CONDITIONS OF CERTIFICATION

**Compliance Conditions Table 1:
Summary of Compliance Conditions of Certification**

Condition Number	Subject	Description
COM-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, regardless of whether such condition was the conditions were satisfied directly by work performed or the project owner or his by an agent.
COM-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until the all of the following activities/submittals have been completed: <ul style="list-style-type: none"> • Project owner has submitted a pre-construction matrix identifying conditions to be fulfilled before the start of construction; • Project owner has completed all pre-construction conditions to the CPM's satisfaction; and • CPM has issued a letter to the project owner authorizing construction.
COM-5	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each Monthly and Annual Compliance Report, which includes the current status of all Compliance Conditions of Certification.
COM-6	Monthly Compliance Reports and Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due one 1 month following the docketing of the Energy Commission's Decision on the project and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-7	Periodic and Annual Compliance Reports	After construction ends, and throughout the life of the project, the project owner shall submit Annual Compliance Reports (ACRs) instead of Monthly Compliance Reports-MCRs.
COM-8	Confidential Information	Any information the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality.
COM-9	Annual Fees	Required payment of the Annual Energy Facility Compliance Fee.
COM-10	Amendments, Staff-Approved Project Modifications, Ownership Changes, and Verification Changes	The project owner shall petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements, and/or transfer ownership or operational control of the facility. <u>Petitions to Amend require the payment of amendment processing fees.</u>

Condition Number	Subject	Description
COM-11	Reporting of Complaints, Notices, and Citations	Prior to the start of construction, the project owner shall provide all property owners within a 4 <u>one</u> -mile radius a telephone number to contact project representatives with questions, complaints, or concerns. The project owner shall respond to all recorded complaints within 24 hours. Within 40 <u>ten 5 five</u> days of receipt, the project owner shall report to the CPM all notices, complaints, violations, and citations.
COM-12	Site Contingency Plan	No less than 60 days prior to the start of commercial operation, the project owner shall submit an on-site Contingency Plan to ensure protection of public health and safety and environmental quality during a response to an unanticipated event or emergency .
COM-13	Incident-Reporting Requirements	The project owner shall notify the CPM within <u>one (1)</u> hour of an incident and submit a detailed incident report within 30 days <u>(1) one week</u> , maintain records of incident report, and submit public health and safety documents with employee training provisions.
COM-14	Non-Operation	No later than <u>two (2)</u> weeks prior to a facility's planned non-operation, or no later than 2 weeks <u>one (1) week</u> after the start of unplanned non-operation, the project owner shall notify the CPM, interested agencies and nearby property owners of this status. During non-operation, the project owner shall provide written updates to the CPM.
COM-15	Facility Closure Planning	In 60 days after initiating commercial operation <u>the first ACR</u> , the project owner shall submit a Provisional Closure Plan and Cost Estimate for permanent closure. At least 3 years <u>No less than one (1) year</u> prior to closing, the project owner shall submit a Final Closure Plan and Cost Estimate.

For the HBEP project, staff proposes the Compliance Conditions of Certification below. Changes from the October 29, 2014 Commission Decision are shown in strikethrough for deleted text and bold underline for new text. COM-6 has been modified to more clearly state the continuing submittal requirements for MCR's. COM-7 was modified pertaining to submittal of PCR's and due dates. COM-10 has been updated to include information about recently adopted application and processing fees for Post Certification Amendments and Changes, (Public Resources Code Section 25806 (e)). COM-11 has been updated to incorporate a number of administrative changes to reporting complaints, notices and citations. COM-12 has been modified as to the required submittal of updates to the Contingency Plan. COM-13 has been updated to reflect revised incident reporting requirements. COM-15 has been updated to reflect revised procedures for preparing a final closure plan and estimating costs.

COM-1 Unrestricted Access. The project owner shall take all steps necessary to ensure that the CPM, responsible Energy Commission staff, and ~~delegated~~ **delegate** agencies or consultants, have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on-site **for the purpose of conducting** ~~to facilitate~~ audits, surveys, inspections, and **or** general or closure-related site visits. Although the CPM ~~shall~~ **will** normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, 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 AFG **amendment** 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 **after notice to the project owner.**

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-2C)
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~~ **have occurred:**

- 1. 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~~
- 2. The** CPM has issued an authorization-to-construct letter to the project owner.

The deadlines for submitting various compliance verifications to the CPM allow staff sufficient ~~staff~~ time to review and comment on, and, if necessary, also 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 items required in compliance ~~verification~~ requirements verifications 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 Delegate Chief Building Official (DCBO), 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 Report ~~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 to the CPM within ten (10) business days after the end of each reporting month~~unless otherwise specified.~~ **MCRs shall be submitted each month until construction is complete and the final certificate of occupancy is issued** by the CPM~~DCBO~~. 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~~ 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~~. **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;
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~~**listing** 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 **(2)** 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~~**listing** of the month's additions to the on-site compliance file; and

10. a listing of **incidents**, complaints, notices of violation, official warnings, and citations received during the month; **a list of any incidents that occurred during the month**, a description of the actions taken to date to resolve the issues; and the status of any unresolved actions **noted in the previous MCRs**.

COM-7 Periodic and Annual Compliance Reports. After construction is complete, the project owner must submit searchable electronic ACRs instead of MCRs **to the CPM, as well as other periodic compliance reports (PCRs) required by the various technical disciplines**. ACRs are due **shall be completed** for each year of commercial operation and ~~may be required for~~ **are due each year on** a specified period ~~after~~ **date agreed to by the CPM**. **Other PCRs (e.g. quarterly reports or decommissioning reports** to monitor closure compliance ~~as~~ **), may be** 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~~ **which shows** the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the ACR; each of these items shall be identified in the transmittal letter with the condition **condition(s)** it satisfies, and submitted as an ~~attachment~~ **attachments** to the ACR;
4. a cumulative ~~list~~ **listing** 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~~ **listing** of filings submitted to, ~~and/or~~ permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a ~~list~~ **listing** 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 siting of complaints, incidents, 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~~ complaints.

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~~ will remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501 *et seq.*

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 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~~ A project owner is required to submit a five thousand (\$5,000) dollar fee for every petition to amend a previously certified facility, pursuant to Public Resources Code section 25806(e). If the actual amendment processing costs exceed \$5,000.00, the total Petition to Amend reimbursement fees owed by a project owner will not exceed seven hundred fifty thousand dollars (\$750,000), adjusted annually. Current amendment fee information is available on the Energy Commission's website at http://www.energy.ca.gov/siting/filing_fees.html.

COM-11 Reporting of Complaints, Notices, and Citations. Prior to the start of construction or ~~decommissioning~~**closure**, 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~~**must** 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.html.~~

~~The project owner shall~~**and promptly** report any disruption to the contact system or telephone number change to the CPMwho will provide it to any persons contacting him or her with a complaint.

~~In addition to including all complaints, notices, and citations included with the MCRs and ACRs, within ten (10)~~**Within five (5) business** days of receipt, the project owner shall report, and provide copies to the CPM, of all complaints, **(including, but not limited to, 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. **Additionally, the project owner must include in the next subsequent MCR, ACR or PCR, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.**

COM-12 Emergency Response Site Contingency Plan. No less than ~~sixty (60)~~ days prior to the start of commercial operation **construction** (or other **CPM-approved** ~~date agreed to by the CPM~~), the project owner shall submit for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). **Subsequently, no less than 60 days prior to the start of commercial operation, the project owner shall update (as necessary) and resubmit the Contingency Plan for CPM review and approval.** 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 **updating** over the life of the facility. Contingency Plan elements include, but are not limited to:

1. ~~a~~**A** site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;

2. ~~a~~**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~~**A** detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. ~~a~~**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~~**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~~**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~~**Procedures** for maintaining contingency response capabilities; and
8. ~~the~~**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**). 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,~~ **within one (1) hour after it is safe and feasible, upon identification** of any incident at the ~~facility the power plant or appurtenant facilities~~ that results ~~or could result~~ in any of the following:

1. ~~**A reduction in the maximum output capability of a generating unit of at least ten (10) Megawatts or five (5) percent, whichever is greater, that lasts for fifteen (15) minutes or longer (or such values as trigger CAISO no prior notice outage reporting requirements under any subsequent modifications to CAISO tariff 9.3.10.3.1); facility's ability to respond to dispatch (excluding forced outages cause by protective equipment or other typically encountered shutdown events);**~~
2. **An event of any kind that causes an unplanned outage;**

3. The activation of onsite emergency fire suppression equipment to combat a fire;
4. Any chemical, gas or hazardous materials release that could result in ~~P~~potential health and safety impacts onto the surrounding population;;~~property damage or any release that could result in and~~ create an off-site odor issue; and /or
5. ~~serious environmental damage; or~~
6. emergency reporting to Notification to, or response by, any off-site emergency response agencies; ~~serious on-site injury; any, federal, state or local agency regarding a fire, hazardous materials release, on-site injury, or any physical or cyber security incident.~~

~~The notice~~ Notification 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**). Hazardous Materials Management and Waste Management.

Within ~~one (1) week~~ **6 business days** of the incident, the project owner shall submit to the CPM a detailed incident report, which includes, as appropriate, the following information:

7. a brief description of the incident, including its date, time, and location;
8. a description of the cause of the incident, or likely causes if it is still under investigation;
9. the location of any off-site impacts;
10. description of any resultant impacts;
11. a description of emergency response actions associated with the incident;
12. identification of responding agencies;
13. identification of emergency notifications made to federal, state, and/or local agencies;
14. identification of any hazardous materials released and an estimate of the quantity released;
15. a description of any injuries, fatalities, or property damage that occurred as a result of the incident;
16. fines or violations assessed or being processed by other agencies;

17. name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and

18. 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)~~ **48** hours of a request.

COM-14 Non-Operation and Repair/Restoration Plans. If the facility ceases operation temporarily ~~either~~ (excluding planned **and unplanned** maintenance), 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. **a** identification of operational and non-operational components of the plant;
2. **aa** detailed description of the repair **and inspection** or restoration activities;
3. **aa** proposed schedule for completing the repair **and inspection** or restoration activities;
4. **a** 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. **p**lanned activities during non-operation, including any measures to ensure continued compliance with all conditions of certification and LORS.

Written **monthly** updates (**or other CPM-approved intervals**) to the CPM for non-operational periods, until operation resumes, shall include:

1. **P**rogress relative to the schedule;
2. **D**evelopments 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 resumption 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~~ **include within the first ACR** a Provisional Closure Plan and ~~Cost Estimate~~ for CPM review and approval. ~~within sixty (60) days after the start of commercial operation.~~ The **CPM may require** Provisional Closure Plan and ~~Cost Estimate~~ **updates to reflect project modifications approved by the Energy Commission. The Provisional Closure Plan** shall consider applicable final closure plan requirements, **including interim and long-term maintenance costs** and reflect the use of an independent third party ~~to that qualified personnel will~~ carry out the permanent closure **and long-term maintenance activities.**

The Provisional Closure Plan **shall reflect the most current regulatory standards, best management practices,** and ~~Cost Estimate~~ **shall** ~~shall~~ **applicable LORS, and** 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;~~
- 2.** dismantling and demolition;
- 3.** recycling and site clean-up;

4. mitigation and monitoring direct, indirect, and cumulative impacts;
5. site remediation and/or restoration;
6. interim and long-term operation monitoring and maintenance, including long-term equipment replacement costs; and
7. 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~~**No less than one (1) year (or other CPM-approved date)** 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.

Prior to submittal of the facility's Final Closure Plan to the Energy Commission, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

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 **or maintenance agreements** 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 ~~long-term~~ 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, ~~including ongoing testing or monitoring protocols,~~
 - e. **exterior maintenance, including paint, landscaping and fencing,**
 - f. **site security and lighting, and**
 - g. any contingencies.
5. ~~a revised/updated~~ a Final Cost Estimate for all closure activities, by phases, including ~~long-term~~ 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~~ **DCBO'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 ~~long-term~~ 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;
 - e. solid waste;
 - f. hazardous materials;
 - g. waste water discharges, and
 - 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~~ and 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~~ Public Health, Waste Management, hazardous Materials Management and Worker Safety).

If implementation of an ~~the~~ Energy Commission-approved Final Closure Plan and Cost Estimate procedures is are not initiated within one (1) year of the plan approval date, it shall be updated and re-submitted to the Energy 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, *the Energy Commission may initiate correction actions against the project owner to complete facility closure.* The project owner remains liable for all costs of contingency planning and closure.

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
POWER PLANT SITE ACTIVITIES	
Start Site Assessment/Pre-construction	
Start Site Mobilization/Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Turbine	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L <u>Transmission Line</u> Construction	
<u>Complete Transmission Line Construction</u>	
Synchronization with Grid and Interconnection	
Complete T/L Construction	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	
Start Recycled Water Supply Line Construction	
Complete Recycled Water Supply Line Construction	

**ATTACHMENT A
COMPLAINT REPORT AND RESOLUTION FORM**

COMPLAINT LOG NUMBER: _____ DOCKET NUMBER: _____

PROJECT NAME: _____

COMPLAINANT INFORMATION

NAME: _____ PHONE NUMBER: _____

ADDRESS: _____

COMPLAINT

DATE COMPLAINT RECEIVED: _____ TIME COMPLAINT RECEIVED: _____

COMPLAINT RECEIVED BY: _____ ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE: _____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION): _____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL: _____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS: _____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION: _____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN: _____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED: _____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

OTHER RELEVANT INFORMATION: _____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE: _____ DATE: _____

ATTACHMENT A
COMPLAINT REPORT/AND RESOLUTION FORM

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING PHOTO/DOCUMENTATION, AS REQUIRED)

Declarations & Resumes

DECLARATION OF JOHN HEISER

I, John Heiser, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner III.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on the Introduction and Executive Summary for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/23/16 Signed: John Heiser

At: Sacramento, California

Resume

John Heiser, AICP

**John Heiser
Planner III – Project Manager**

EDUCATION

**B.A. in Geography, Rural
and Small Town Planning,
1990, Chico State University,
Chico, CA**

**M.A. in City and Regional
Planning, 2000, Cal Poly, San Luis
Obispo, CA**

AREAS OF SPECIALIZATION

**Program/Project
Management
Renewable Energy Development
Environmental
Compliance
Resource Management**

John Heiser has experience in the areas of Energy Facility Siting, Municipal Planning and Private Planning Development. Mr. Heiser's skills include project planning management, conducting feasibility studies, economic development, land use and environmental analysis, agency management, plan implementation, policy analysis, grant programs and capital improvement districts. John's planning disciplinary experience includes sustainable energy planning, airport planning, traffic program and transportation planning, housing element updates, zoning ordinance and general plan updates, working with tenant lease agreements with City owned properties, and contract administration.

EMPLOYMENT SUMMARY

2012 to Date: California Energy Commission,
Planner III – Energy Facility Siting

2011-2012: Hauge Brueck Associates, LLC. Planner

2009-2011: Tulare County Resource Management
Agency, Planner III

2008-2009: City of Wasco, Community Development
Director

2008-2009: JSE Planning Consultants, Owner

2007-2008: City of Isleton, Community Development
Director

2006-2008: Willdan, Senior Planner

2005-2006: El Dorado County Community
Development, Senior Planner

2004-2005: El Dorado County Department of
Transportation, Senior Planner

2001-2004: City of Marina Planning Department,
Associate Planner

2000-2001: Santa Barbara County Community
Development, Planner III

1998: El Dorado County Community Development,
Contract Planner

1992-1997: Modoc County Planning Department,
Planner II

1991-1992: Harland Bartholomew and Associates,
Planning Intern

1988-1988: QUAD Consultants, Planning Intern

EMPLOYMENT

2012 to Date: California Energy Commission, Planner III, Energy Facility Siting – Project Manager. Plan, organize, direct and manage the State regulatory process for electric generating plants from application through issuance of permit. Plan, organize and direct the efforts of 23 disciplinary environmental and engineering staff in actions related to the California Environmental Quality Act (CEQA) requirements. Recommend actions, policies and procedures affecting the project and commission program direction. Conduct public workshops and hearings related to proposed projects. I Compile, edit, and issue staff environmental assessments and other CEQA related documents.

2011-2012: Hauge Brueck Associates, LLC. Associate. Mr. Heiser managed planning and environmental projects related to renewable energy development and other jurisdictional land use entitlement requests. John managed 15 utility scale solar photovoltaic (PV) energy facilities in Tulare County ranging from 20 to 50 Mega Watts in size. Nine of the fifteen solar PV projects have been approved by Tulare County. John was instrumental in creating an entitlement process in Tulare County for these facilities located on agricultural lands and agricultural lands subject to Williamson Act Contracts. This process has assisted other County and City Jurisdictions in California with renewable energy facility siting issues and entitlement procedures. This entitlement process was recently recognized by the Central Section California Chapter American Planning Association by awarding Tulare County first place for this effort. John was the program manager for Vestal Almond, Vestal Herder and Vestal Fireman Solar PV utility scale projects in Tulare County.

2009-2011: Tulare County. Planner III. Mr. Heiser was engaged in both project review and countywide planning divisions by either providing support to RMA staff and or project managing land use entitlements that require CEQA determination. Prepared CEQA documents, prepare and present staff reports to the Agricultural Advisory Committee, Site Plan Review Committee, Planning Commission and Board of Supervisors. Assisted with county wide planning division on surface mining activities, Williamson Act Contracted lands, County Dairy Team and lead planner on large scale projects. Developed and implemented RMA staff policies and procedures for siting renewable energy facilities located on agricultural and Williamson Act Contracted lands. John was the project manager for the Tule River Indian Tribe 1 million gallon waste water treatment plant for the Indian reservation. John provided support in the County's updated housing element and General Plan update as well as the Yokohl Ranch development. John was the lead contact person for renewable energy development information for Tulare County, project manage fifteen large scale solar PV facilities located on agricultural lands including project managing the consultants preparing the CEQA documentation for these projects.

2008 – 2009: JSE Consultants: Folsom, CA. Principal-Owner. Owner and Principal of JSE – Consulting Firm located in Folsom, California. JSE was a group of planning, engineering, and building consultants that have vast experience in every level of development, consulting and agency management. They were engaged members of our communities and have held positions as company owners, private builders and developers, and public work directors. The primary purpose of providing Community Development Services was to offer staffing support, assist

Resume

John Heiser, AICP

jurisdictional (City/County) staff in addressing planning and design issues; process area/community/specific plans, and any other plans as directed by the jurisdiction. Provided environmental documentation services; assist the jurisdiction to identify overall community goals, growth and policies. These services included current and long range planning, development project processing, Environmental compliance and process analysis. As an additional service we offered LEED ND Certification and were familiar with the objectives and credits, as defined by the Green Building Council. It is JSE's mission to incorporate sustainability into its projects.

2006 – 2008: Willdan. Senior Planner. Mr. Heiser provided staff augmentation services for local public planning agencies including acting Community Director for the City of Isleton, California. As Community Development Director for Isleton, duties included but not limited to updating the City's housing element, the City's 5-year redevelopment plan and coordinate efforts with Sacramento LAFCO regarding several annexation proposals in Isleton. Additional efforts included working on three subdivision projects requiring annexation and EIR documents and establishing historical design guidelines for the downtown portion of the City. Facilitated and or conducted community workshops in the City of Isleton regarding development, updated Historical Design Guidelines, Zoning Ordinance and General Plan update and projects identified in the updated 5-year redevelopment plan. While employed with Willdan, additional duties included working with California Department of Parks regarding the Bay Area bike trail to Sacramento proposal, preparing Statements of Qualification, Respond to Requests for Proposals, and assist in marketing. Other responsibilities included project manage a team of assistant and associate planners working on four housing element updates including housing inventories for the City of Woodland, City of Lincoln, City of Isleton and City of Wasco. Present staff reports to Planning Commission, City Council and Redevelopment Agency meetings. Assist and facilitate public workshops, meetings and providing GIS support.

2005 – 2008: El Dorado County Community Development. Senior Planner. Responsibilities included review and processing land use entitlements subject to CEQA review and documentation. Process tentative and final subdivision maps subject to CEQA documentation; assisted in developing a screening process for land use entitlement requests that required General Plan consistency analysis. Facilitate meetings with applicants and staff and present staff report to the planning commission. Assist the County's Planning Department in regards to siting Wireless Telecommunication Facilities and review projects that required General Plan findings of consistency. Additional duties included overseeing and providing management support for the County's satellite office located in El Dorado Hills California.

2004 – 2005: El Dorado County Department of Transportation. Senior Planner. Duties Performed: Working on updating the County's traffic impact/Capital Improvement Program, coordinate with Fehr & Peers on traffic modeling as part of this program and Muni-Financial regarding the costs and financial obligations required in upgrading the County and State Highway road infrastructure systems in El Dorado County. Assist EDC-DOT with storm water permitting requirements and assist with facilitating meetings with the traffic impact fee committee.

Resume

John Heiser, AICP

2001 – 2004: City of Marina. Associate Planner. Responsibilities included project planner/manager working on several redevelopment projects, subdivisions, housing and mixed use developments located on former Fort Ord Military Base and Airport and within the City limits. These projects required coordinated efforts between local, state and federal agencies as well as the Fort Ord Reuse Authority, the County's airport committee and both California State and University of California. Process and approve land use entitlement requests requiring CEQA documentation. Project planner/manager for the City's Pedestrian and Bicycle Master Plan and assisted with the updated Downtown Specific Plan. Update the City's entire Zoning Ordinance including the Airport, Zoning maps and policy sections of the updated General Plan. Created the City's Wireless Telecommunication Ordinance and Village Homes-Mixed Use Zoning Ordinance. Project manager updating the City's Airport Design Guidelines and facilitate lease agreements at the City's Airport and on former Fort Ord. Assist the public counter section of current planning, facilitate the architectural review committee meetings and provide GIS mapping support.

2000 – 2001: Santa Barbara. Planner III. Project manager of subdivision application requests and multi-family dwellings located on environmentally constrained parcels, process wireless telecommunication facilities throughout the County, review and process complex discretionary projects requiring CEQA documentation. Manage and administer consultant contracts and assist the public counter section of current planning.

1999 – 1999: Max P. Bacerra & Associates. Contract Planner. Project manager of two housing surveys and housing element update documents for the City of Arvin and McFarland. Project manage a 5-year Redevelopment Plan and assist with block grant proposals.

1998 – 1998: El Dorado County. Contract Planner. Responsibilities included but not limited to assisting the public counter section of current planning and plan checking both residential and commercial projects for Zoning, Specific Plan and General Plan policy consistency.

1992 – 1997: Modoc County. Planner II. Project planner/manager for current and long range planning projects. Work efforts included updating the County's Zoning Ordinance and General Plan, Housing Element and providing planning staff services for the City of Alturas. Provide Code Enforcement services for both the County and City of Alturas. Develop a recreational trails map and guide for the County. Prepared for the City of Alturas a Historical Design Guidelines document. Process land use entitlements requiring CEQA review and documentation such as subdivisions and surface mines subject to SMARA and State requirements. Prepare and present staff reports to the City Planning Commission and City Council along with presenting staff reports to the County Planning Commission and Board of Supervisors. Assist the public counter section of current planning. Provide code enforcement assistance and project manage the County's new E-911 addressing system.

1991 – 1992: El Dorado County. Associate Planner. Responsibilities included but not limited to assisting the public counter section of current planning and plan checking both residential and commercial projects for Zoning, Specific Plan and General Plan policy consistency.

Resume

John Heiser, AICP

1991 – 1992: El Dorado County. Building Technician I. Assist the public counter section of the building department, review and plan check building permit applications.

1991 – 1992: Harland Bartholomew and Associates. Intern Planner. Assist with data collection for CEQA documents and General Plans.

1988 – 1988: QUAD Consultants. Intern Planner. Assist with data collection for CEQA documents by collecting field data and or research data collection.

P R O J E C T S

Public Outreach and Consent Building

Modoc County, CA

Modoc County, General Plan update, 1995

Modoc County, Surface Mining Projects, 1990

City of Alturas, CA

City of Alturas, Downtown Historic Design Guidelines, 1995.

City of Marina, CA

City of Marina, Downtown Specific Plan, 2003-2004

City of Marina, Pedestrian and Bicycle Master Plan, 2003-2004.

City of Marina, Redevelopment Projects located on former Fort Ord Military Base, 2001 – 2004.

City of Marina, 350 acre “Marina Heights” mixed use development. 2003-2004

City of Marina 300 acre “Marina Station” mixed use – TOD subdivision, 2003-2004.

El Dorado County, CA

El Dorado County, Department of Transportation, Traffic Impact Fee Committee, 2004 – 2005.

City of Isleton, CA

City of Isleton, Annexation requests for subdivisions and commercial mixed use housing projects, 2005-2006.

City of Isleton, Housing Element update, 2005-2006.

City of Isleton, Downtown Historic Development Guidelines, 2006.

City of Isleton, Bicycle and Pedestrian Plan workshops, 2006.

City of Wasco, CA

City of Wasco, Downtown Historic Design Guidelines update, 2009.

City of Wasco, Climate Change and Project Blue Print workshops. 2008-2009.

Tulare County, CA

Tulare County, Solar PV Facility siting criteria stakeholder meetings. 2010- 2011.

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Modoc County General Plan Element Updates, 1994.

City of Alturas, CA

City of Alturas Historic Design Guidelines, 1995.

City of Marina, CA

City of Marina, Pedestrian and Bicycle Master Plan, 2004.

City of Marina, Downtown Specific Plan, 2003-2004.

City of Marina, Wireless Telecommunication Ordinance, 2004.

City of Marina, updated Airport Design

Resume

Guidelines, 2004.

City of Marina, updated Zoning Ordinance and Zoning Map, 2005.

City of Marina, Village Homes/TND based zoning Ordinance.

City of Isleton, CA

City of Isleton, updated Downtown Historic Design Guidelines, 2008.

City of Isleton, updated 5-year redevelopment plan. 2007-2008.

Tulare County, CA

Tulare County, siting criteria for utility scale Solar PV electrical generating facilities. 2010

Regulation Development

Modoc County, CA

Modoc County Housing Element update, 1995

Modoc County Zoning Ordinance Update, 1992

Modoc County General Plan Element Updates, 1994.

Site Planning

Modoc County, CA

Modoc County, General Plan update, 1995

Modoc County Housing Element update, 1995

Modoc County Zoning Ordinance Update, 1992

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City of Marina, CA

City of Marina, Pedestrian and Bicycle Master Plan, 2003-2004.

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City of Marina, Downtown Specific Plan, 2003-2004.

City of Marina, Wireless Telecommunication Ordinance, 2004.

John Heiser, AICP

City of Alturas, CA

City of Alturas Historic Design Guidelines, 1995.

City of Marina, Pedestrian and Bicycle Master Plan, 2004.

City of Marina, CA

City of Marina, Downtown Specific Plan, 2003-2004.

City of Marina, Wireless Telecommunication Ordinance, 2004.

City of Marina, updated Airport Design Guidelines, 2004.

City of Marina, updated Zoning Ordinance and Zoning Map, 2005.

City of Marina, Village Homes/TND based zoning Ordinance.

City of Isleton, CA

City of Isleton, updated Downtown Historic Design Guidelines, 2008.

City of Isleton, updated 5-year redevelopment plan. 2007-2008.

Tulare County, CA

Tulare County, siting criteria for utility scale Solar PV electrical generating facilities. 2010

City of Marina, updated Airport Design Guidelines, 2004.

City of Marina, updated Zoning Ordinance and Zoning Map, 2005.

City of Marina, Village Homes/TND based zoning Ordinance.

City of Marina, Downtown Specific Plan, 2003-2004

City of Alturas, CA

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City of Isleton, CA

City of Isleton, Housing Element update, 2005-2006.

City of Isleton, Downtown Historic Development Guidelines, 2006.

City of Isleton, updated Downtown Historic Design Guidelines, 2008.

Resume

John Heiser, AICP

City of Isleton, updated 5-year redevelopment plan. 2007-2008.

Guidelines update, 2009.

City of Wasco, CA

City of Wasco, Downtown Historic Design

Tulare County, CA

Tulare County, siting criteria for utility scale Solar PV electrical generating facilities. 2010

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City of Marina, CA

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El Dorado County, CA

El Dorado County Development Fee Impact Study for County and State Highway Infrastructure Improvements, 2004-2005

M E M B E R S H I P S , R E G I S T R A T I O N S , A N D C E R T I F I C A T E S

American Institute for Certified Planners (AICP)

American Planning Associations (APA)

A W A R D S

American Planning Association, California Chapter, Central Section, Award for “Innovation in Green Community Planning - first place: Tulare County Resource Management Agency Solar Facility Review Process,” 2011

Transportation Agency Monterey County, Award for the City of Marina Pedestrian and Bicycle Master Plan, 2004


DECLARATION OF WENJUN QIAN

I, Wenjun Qian, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting, Transmission and Environmental Protection Division as an Air Resources Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Air Quality, Traffic and Transportation Appendix TT-1: Plume Velocity Analysis, and Visual Resources Appendix VR-1: Visible Plume Modeling Analysis for the Huntington Beach Energy Project Amendment, based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/1/2016

Signed: 

At: Sacramento, California

Wenjun Qian, Ph.D., P.E.

Professional Experience

Air Resources Engineer (July 2010 – Present)
California Energy Commission, Siting Transmission and Environmental Protection Division

Currently acting as air quality technical staff on siting projects filed with the Energy Commission, including El Segundo, Russell City, Palomar, Oakley, Huntington Beach etc. Specific responsibilities include the following:

- Analyze the impacts of the construction and operation of large power generation projects on air quality, Green House Gas and climate change
- Determine the conformance to applicable U.S. EPA, ARB and local air district regulations and standards
- Investigate and recommend appropriate emission mitigation measures
- Prepare air quality staff assessments and technical testimony
- Develop and monitor air quality compliance plans
- Review and evaluate U.S. EPA, ARB, and local air district air quality rules and regulations
- Collect, analyze, and evaluate data for the effects of air pollutants and power plant emissions on human health and the environment
- Assist staff in other technical areas by evaluating nitrogen deposition, thermal plume, and visible plume impacts from power plants

Research Assistant (Sept. 2005 – June 2010)
University of California, Riverside, Mechanical Engineering

- Evaluated air quality impact of distributed generations in South Coast Air Basin of California
- Estimated air quality impact from the key power plant of Los Angeles Department of Water and Power in shoreline urban areas
- Improved air quality model results by evaluation with experimental data
- Prepared and presented multiple comprehensive reports, journal papers, and conference papers

Education

PhD	Mechanical Engineering, University of California, Riverside (August 2010)
MS	Mechanical Engineering, George Washington University (August 2005)
BS	Mechanical Engineering, Shanghai Jiao Tong University (June 2004)

DECLARATION OF DAVID VIDAVER

I, David Vidaver, declare as follows:

1. I am presently employed by the California Energy Commission in the Supply Analysis Office of the Energy Assessments Division as an Electric Generation System Program Specialist II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared portions of the staff testimony on Air Quality and Alternatives for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 9/8/16

Signed: 

At: Sacramento, California

Dave Vidaver

Supply Analysis Office

Energy Assessments Division

California Energy Commission

(916) 654-4656

david.vidaver@energy.ca.gov

Employment (all with the California Energy Commission)

Electric Generation System Program Specialist II, Electricity Analysis Office 2011 – present

Senior analyst responsible for evaluation of procurement, resource adequacy and renewable generation development policies, potential impacts of generation resource development on greenhouse gas emissions.

Electric Generation System Specialist III, Electricity Analysis Office, 2005 - 2011

Supervisor of Procurement and Resource Adequacy Unit, supervise nine staff responsible for evaluating utility procurement and resource adequacy, combined heat and power and distributed generation issues, role of aging and once-through cooled power plants, compiling and maintaining office databases.

Energy Commission Specialist II, Demand Analysis Office, 2005

Monitoring near-term load growth at utility and regional level across the WECC; assessing load-temperature relationships for California and major western utilities and long-term changes in temperatures and load-temperature relationships.

Electric Generation System Specialist II, Electricity Analysis Office 2002 – 2005

Supervisor of Electricity System Modeling Unit; supervised four staff responsible for studies of resource adequacy, market price forecasts, emissions and fuel use studies, assessments of market conditions, role of aging power plants; contributing and principal author of numerous reports, papers, and presentations,

Electric Generation System Specialist I, Electricity Analysis Office, 1998 – 2002

Simulation modeling of WECC for studies of resource adequacy, market price forecasts, emissions and fuel use studies; assessments of market conditions; contributing and principal author of numerous papers, reports and presentations.

Education

BA, Political Science, University of California, Berkeley

MS, Agricultural Economics, University of California, Davis

Additional Information

Member of the Northwest Power and Conservation Council's Generation Resource Committee, which characterizes the cost and performance of generation technologies for studies undertaken in support of the Council's 5-year power plans; numerous reports at conferences and symposia on topics ranging from natural gas demand in California's electricity sector to implementation of resource adequacy measures in California during 2001- 2004; participant in collaborative proceedings with CPUC (resource adequacy, long-term procurement).

DECLARATION OF TIM SINGER

I, Tim Singer, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as an Energy Analyst.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Biological Resources for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 28, 2016

Signed:  _____

At: Sacramento, California

Timothy Singer
Energy Analyst, Biological Resources Unit
Siting, Transmission, and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS 40
Sacramento, CA 95814

Summary of Professional Experience

Mr. Singer is an internationally experienced, highly trained leader with over 6 years of professional experience in infrastructure development, environmental conservation, policy analysis, and natural resource management from both technical and managerial perspectives. He has developed trusting relationships with community leaders, researchers, government officials, key business stakeholders, and other team members. His expertise lies in technical planning, economic modeling, policy analysis, and resource use forecasting.

Work Experience

Energy Analyst at California Energy Resources Conservation & Development Commission

August 2015 – Present in Sacramento, CA

Analyzed 20+ projects within the Siting, Transmission, and Environmental Protection Division to hold project owners accountable for environmentally sustainable energy infrastructure development, implementation, and operation; consulted with other State and Federal government agencies on energy infrastructure and power plant siting issues; conducted cost-benefit analysis of environmental, economic, and other factors related to energy use in California; organized and presented information during meetings and workshops concerning Commission projects, programs, and policies amongst and between staff, public and private utilities, government agencies, private organizations, and the public; attended numerous trainings focused on renewable energy development and implementation, energy markets, energy transmission line planning and implementation, implementation of demand response in existing energy infrastructure, and conventional power plant design; collaborated with a multidisciplinary team of colleagues on the 2016 Environmental Performance Report by identifying and describing issues related to environmental factors, electrical energy production facilities, alternative energy technologies, energy research and development, and Commission programs.

Science Instructor & Divemaster at Catalina Island Marine Institute

February 2015 – August 2015 on Catalina Island, CA

Educated children aged 8-18 about marine science, terrestrial biology, geology, astronomy, and other science-related topics; coordinated program activities for hundreds of students; acted as lead liaison between school chaperones and program administrators; supervised groups of students and chaperones during educational activities; maintained day-to-day function of camp facilities and equipment.

Environmental Resource Management Promoter with United States Peace Corps

May 2011 – June 2013 in the Republic of Fiji

Consulted with Fijian government agencies, NGOs, and local entrepreneurs on innovative, sustainable natural resource management, land use planning, and renewable energy infrastructure development; coordinated and managed environmental education outreach programs and sustainable resource use workshops in rural communities; assisted the Divisional head of government in analyzing the economic rationale, practical applications, and market opportunities for the implementation of environmentally-conscious infrastructure, renewable energy, and large-scale aquaculture; created and developed the project plan for a multipurpose aquaculture hatchery and resource center in Fiji's Northern Division; chaired the Peace Corps Volunteer Advisory Committee,

organizing and leading quarterly liaison meetings between Peace Corps staff and volunteers as well as providing policy recommendations to Peace Corps Country Director and staff.

Assistant Laboratory Technician at Richard B. Gump South Pacific Research Station

June 2010 – September 2010 in Moorea, French Polynesia

Retrieved, maintained, and deployed technical oceanographic equipment; aided researchers and grad students with designing, implementing, and analyzing marine ecological experiments and technical surveys; entered, edited, and analyzed data in Excel.

Volunteer Experience

Intern at Santa Barbara Coastal Long Term Ecological Research (SBC LTER) marine lab at UCSB

January 2007 – June 2010 in Santa Barbara, CA

Analyzed invertebrates in local marine bottom samples; entered and reviewed data from MCR (Moorea Coral Reef) LTER fish counts and coral reef surveys; trained new interns on laboratory safety, protocol, and data collection methods.

Intern at Partnership for the Interdisciplinary Study of Coastal Oceans (PISCO)

Summer 2009 in Santa Barbara, CA

Dove at the California Channel Islands to monitor and replace oceanographic equipment and SMURFS (Standard Monitoring Unit for the Recruitment of Fishes); cleaned and performed maintenance on equipment back in the laboratory at UCSB; aided researchers in preparing, deploying, driving, and maintaining research vessels.

Head Aquarist at UCSB's Research Experience & Education Facility (REEF)

September 2006 – June 2008 in Santa Barbara, CA

Managed tours of aquariums and surrounding coastal area for the public and local K-12 students; monitored and tended to the needs of the organisms housed in the facility; supervised and trained interns; operated and maintained day-to-day function of aquarium equipment.

President of Santa Rosa Residence Hall, UCSB

September 2006 – June 2007 in Santa Barbara, CA

Elected by Santa Rosa Residence Hall residents; managed a \$5,000 Residence Hall budget, assisted in managing \$250,000 Residence Hall Association budget; ran hall council meetings focused on budget management and event planning; served as liaison between students and residence hall management.

Education

Aquatic Biology (B.S.) from University of California, Santa Barbara, 2006-2010

Business Administration (A.A.) from Santa Barbara City College, 2014

Economics (A.A.) from Santa Barbara City College, 2014

Bermuda Institute of Ocean Science, Coral Reef Ecology course, summer 2008

DECLARATION OF HEATHER BLAIR

I, Heather Blair, declare as follows:

1. I am presently employed by Aspen Environmental Group, consultant to the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as Senior Biologist.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Biological Resources for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: _____

8/16/16

Signed: _____



At: _____

Sacramento, California



Academic Background

MS, Conservation Biology, Sacramento State University, 2012
BS, Ecology, San Diego State University, 2004

Professional Experience

Heather Blair is an Environmental Scientist experienced in the managerial and technical aspects of environmental review of energy infrastructure projects. Her particular expertise is terrestrial biological resources throughout California. This expertise is backed by experience in a range of natural resource investigations and environmental impact analysis including botanical and wildlife research, inventory, and survey techniques; technical writing; and data analysis. She has experience preparing and managing the preparation of environmental documents pursuant to applicable federal, state and local environmental regulations, including but not limited to the California Environmental Quality Act, National Environmental Policy Act, and the California and federal Endangered Species Acts.

Aspen Environmental Group.....2004-present

Selected project experience at Aspen includes the following:

- **California Energy Commission.** Aspen has a multi-year contract to provide support to the Energy Facility Planning and Licensing Programs. Under this contract Ms. Blair has participated in the following projects:
- **Biological Resources Assessment for the Huntington Beach Energy Project.** Ms. Blair was the co-lead technical staff for the analysis of impacts to biological resources from this 939 MW natural gas-fired power plant in coastal Orange County that will replace the existing Huntington Beach Generating Station. Important biological issues for this project include indirect impacts to nearby wetlands and preserves, including noise and vibration impacts to listed birds (e.g., clapper rail).
- **Biological Resources Assessment for the Alamitos Energy Center.** Ms. Blair was the co-lead technical staff for the analysis of impacts to biological resources from this 1,963 MW natural gas-fired power plant in coastal Los Angeles County. Important biological issues for this project include indirect impacts to nearby wetlands and preserves, including noise and vibration impacts to listed birds (e.g., California least tern).
- **Biological Resources Assessment for the Blythe Solar Power Project PV Amendment.** Ms. Blair prepared the cumulative impact analysis for biological resources for this amendment to convert the approved solar thermal project to photovoltaic technology.
- **Biological Resources Assessment for the Rio Mesa Solar Electric Generating Facility.** Ms. Blair was the co-lead technical staff for the analysis of impacts to biological resources from this 250 MW solar thermal power plant in the Mojave Desert. Important biological issues for this project include impacts to migratory birds, desert tortoise, and jurisdictional washes. Coordination is required with BLM as a portion of the generator-tie line would cross portions of the California Desert District. This project was ultimately cancelled by BrightSource.
- **Biological Resources Assessment for Pio Pico Energy Center Power Plant Licensing Case.** Ms. Blair was the co-lead technical staff for the analysis of impacts to biological resources from this 300 MW solar thermal power plant in eastern San Diego County. Important biological issues for this project include impacts to critical habitat for federally listed Quino checkerspot butterfly,

Otay tarplant, and California gnatcatcher from nitrogen deposition as well as consistency with the San Diego County Multi-Species Conservation Plan.

- **Biological Resources Assessment for the Abengoa Mojave Solar Project.** Ms. Blair was the lead technical staff for the analysis of impacts to biological resources from the 250 MW solar thermal power plant in the Mojave Desert. Important biological issues for this fast-track American Reinvestment and Recovery Act (ARRA) funded project included impacts to Harper Dry Lake from potentially decreased water availability, desert tortoise, and Mojave ground squirrel. Ms. Blair testified as an expert witness in biological resources during Evidentiary Hearings before the Commission.
- **Biological Resources Assessment for the San Joaquin Solar 1&2 Hybrid Project.** Ms. Blair was the lead technical staff for the analysis of impacts to biological resources from the 107 MW solar thermal/biomass hybrid power plant. Important biological issues include potential impacts to San Joaquin kit fox habitat and movement corridor connectivity. This project was cancelled prior to issuance of a Decision.
- **Biological Resources Assessment for the Genesis Solar Energy Project.** Ms. Blair was the assistant technical staff for the analysis of impacts to biological resources from this 250 MW solar thermal power plant in an undeveloped area of the Sonoran Desert. Important biological issues for this fast-track ARRA project include direct and indirect (downstream) impacts to ephemeral drainages from site development and indirect impacts to sand dune dependent vegetation and wildlife communities from disruption of Aeolian processes.
- **Biological Resources Assessment for the Carlsbad Energy Center.** Ms. Blair was the lead technical staff for the analysis of impacts to biological resources from the 540 MW CECP. Important biological issues include potential impacts to Agua Hedionda Lagoon and consistency with the Carlsbad Habitat Management Plan. Ms. Blair testified as an expert witness in biological resources during Evidentiary Hearings before the Commission.
- **Biological Resources Assessment for the CPV Sentinel Project.** Ms. Blair was the lead technical staff for the analysis of impacts to biological resources from the 850 MW CPV Sentinel project. Important biological issues include potential impacts from groundwater drawdown to the mesquite hummock plant community and the special-status species it supports.
- **Biological Resources Assessment for the CPV Vaca Station Project.** Ms. Blair is currently serving as the lead technical staff for the analysis of impacts to biological resources from the 660 MW CPVVS. Important biological issues include potential impacts to giant garter snake from reduced flows in Old Alamo Creek and loss of Swainson's hawk foraging habitat.
- **Biological Resources Assessment for the Marsh Landing Generating Station.** Ms. Blair served as the lead technical staff for the analysis of impacts to biological resources from the 930 MW MLGS. Important biological issues include indirect impacts to State and federally listed plants and insect species in the Antioch Dunes National Wildlife Refuge from nitrogen deposition. Ms. Blair presented her findings before the Commission.
- **Biological Resources Assessment for the Willow Pass Generating Station.** Ms. Blair is currently serving as the lead technical staff for the analysis of impacts to biological resources from the 550 MW WPGS. Important biological issues include direct impacts to California red-legged frog and indirect impacts to State and federally listed plants and insect species in the Antioch Dunes National Wildlife Refuge from nitrogen deposition.
- **Biological Resources Assessment for the Oakley Generating Station.** Ms. Blair co-prepared the analysis of impacts to biological resources from the 624 MW OGS. Important biological issues

include indirect impacts to State and federally listed plants and insect species in the Antioch Dunes National Wildlife Refuge from nitrogen deposition.

- **Biological Resources Assessments for the Panoche and Starwood Energy Centers.** Ms. Blair served as the lead technical staff for the analysis of impacts to biological resources from the 400 MW Panoche Energy Center and 120 MW Starwood Project. These projects required coordination with USFWS and CDFG regarding impacts to the State and federally listed San Joaquin kit fox.
- **Downstream Transmission Upgrades.** Ms. Blair prepared the impact assessment of various issue areas (e.g., biological, geological, and water resources) for reasonably foreseeable upgrades required to interconnect the Palen Solar Power Plant, Blythe Solar Energy Project, Genesis Solar Energy Project, Abengoa Mojave Solar Project, and Los Esteros Critical Energy Facility Phase 2 to the electrical grid.
- **Desert Renewable Energy Conservation Plan EIR/EIS.** Ms. Blair is preparing the analysis of biological and water resources impacts resulting from transmission line build-out outside of the Plan Area, extending north into the San Joaquin Valley, east into the Los Angeles Area and south into San Diego and Imperial counties. She is also integrating BLM's conservation management actions across all issue areas for inclusion in the EIR/EIS.
- **Environmental Screening Tool for Out-of-State Renewables.** Assessed the potential for California laws, ordinance, regulations and standards to be impacted by out-of-state renewable facilities seeking RPS certification. Ms. Blair prepared the assessment of impacts associated with geothermal projects.
- **Review of the Trans Alta Blue Trail Wind Project for RPS Certification.** Assessed whether the Trans Alta Wind Project's application for Renewable Energy Credits met the Energy Commission's data adequacy requirements and would be consistent with applicable federal, California, and local laws, ordinances, regulations, and standards. The Blue Trail Wind Project is located in Alberta, Canada.
- **Nuclear Power Plant Assessment (Assembly Bill 1632).** Ms. Blair managed the preparation of and was a contributing author for a major Appendix to the Nuclear Power Plant Assessment Report for the Energy Commission. This report evaluated nuclear power issues in the state in response to recent legislation (AB 1632), including environmental issues associated with alternatives (including renewable) to the state's two nuclear facilities.

DECLARATION OF MELISSA MOURKAS

I, Melissa Mourkas, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Cultural Resources related to the Built Environment for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony regarding the Built Environment is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related to the Built Environment in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/10/2016 Signed: 
At: Sacramento, California

MELISSA MOURKAS

EDUCATION

MASTER OF ARTS, LANDSCAPE DESIGN & PLANNING, 1994

CONWAY SCHOOL OF LANDSCAPE DESIGN, CONWAY, MASSACHUSETTS

Graduate landscape design program providing professional training in site design and land-use planning. Curriculum emphasis is on sustainable landscape planning and design. Graduate projects included: Master Plan for a 45-acre historic resort, original landscape designed by F.L. Olmsted and Performance Standards for a proposed industrial park.

BACHELOR OF ARTS, HISTORY OF ARCHITECTURE & ART, 1981

SCRIPPS COLLEGE, CLAREMONT, CALIFORNIA

Major studies in Art and Architectural History, Urban Development. Senior thesis: documentation and analysis of the innovative residential designs and construction techniques of California modern architect Rudolf M. Schindler. Minor studies in Art and the Humanities.

PROFESSIONAL EXPERIENCE/QUALIFICATIONS

- Licensed Landscape Architect, California # 5139
- Qualified Architectural Historian, Secretary of the Interior's Standards for Historic Preservation, Code of Federal Regulations, 36 CFR Part 61.

PLANNING AND HISTORIC PRESERVATION:

April 2010 to Present: Planner II, California Energy Commission, Siting, Transmission and

Environmental Protection Division. Provide technical environmental analysis of proposed energy facilities and development. Review of EIR/EIS documents prepared by other agencies under NEPA. Specific tasks include: the assessment of potential impacts of new electric power plants on both Visual and Cultural Resources; identification of suitable mitigation measures under CEQA; preparation of written testimony; participation in public workshops; presentation of sworn testimony during evidentiary hearings, and project monitoring to ensure compliance with local, state and federal environmental laws and regulations. Cultural Resources specialty in the built environment, architectural and landscape history. Section 106 review of federally-funded energy efficiency upgrades under Programmatic Agreement with California OHP.

2008-2014: Member, City of Sacramento Preservation Commission (Chair 2013-2014)

2005 to 2008: Assistant Planner, Historic Preservation Office, City of Sacramento, CA

Responsible for design review and approval for private and public development projects involving rehabilitation, preservation and restoration of historic resources and districts under CEQA. Prepared staff reports for Preservation Commission and Council, and coordinated with other planning staff on concurrent entitlements. Staff liaison on municipal development projects involving historic resources.

LANDSCAPE ARCHITECTURE:


1994 to Present: Landscape Architecture and Design. Experience in landscape architecture, landscape construction estimating, site planning, historic landscapes and landscape master plans. Provide landscape architecture and consulting services to private clients, public organizations, contractors, and design firms. Preparation of Cultural Landscape Reports. Frequent speaker to various groups on landscape design, construction and cultural landscapes.

DECLARATION OF GABRIEL ROARK

I, Gabriel Roark, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Cultural Resources (archaeological and ethnographic resources) for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 08/31/2016 Signed: 

At: Sacramento, California

GABRIEL ROARK, M.A.

Archaeologist

Since 1999, Mr. Roark has directed and conducted cultural resource investigations for projects involving the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). Mr. Roark possesses extensive professional experience in prehistoric archaeology, historical archaeology, and regulatory compliance, routinely serving as the project manager and technical lead on several projects simultaneously. He specializes in the design and implementation of archaeological monitoring programs, archaeological surveys and excavations, archival research, and CEQA and Section impact analyses. His Section 106 experience includes drafting memoranda of agreement, programmatic agreements, and historic properties treatment plans.

Professional Employment History

State Energy Resources Conservation and Development Commission (Energy Commission). Energy Planner II. June 1, 2012–present. Sacramento, California.

Mr. Roark's primary duty at the Energy Commission is the preparation of independent analyses of the potential cultural resource impacts engendered by proposed power plant projects and amendments. Analysis consists of reviewing applications for certification and various other applicant submittals, verifying and augmenting the information contained therein through independent research. As a staff archaeologist in the Cultural Resources Unit, he personally examines proposed project sites to verify and record current conditions on-site. Duties also include management of consultants; application of local, state, and federal laws, ordinances, regulations, and standards to proposed projects; reviewing compliance documents for existing power plants; and assistance with tribal consultation.

ICF International (formerly Jones & Stokes). Senior Associate (Archaeologist). February 23, 1999–May 30, 2012. Sacramento, California.

Mr. Roark provided comprehensive cultural resources management services to federal, state, and local agencies across

Years of Experience

- Professional start date: 02/23/1999

Education

- MA, Anthropology, California State University, Sacramento, 2009
- BA, Anthropology, California State University, Sacramento, 1999

Professional Memberships

- Archaeological Resources Committee, State Historical Resources Commission

Special Training

- Cascade Range Archaeological Project, Crew Chief, California State University, Sacramento, 1999
 - Archaeological Field School, Mammoth Lakes, California State University, Sacramento (Dr. Mark E. Basgall, Director), 1999
 - Anthropology 199: Introduction to Analysis of California Gold Rush Chinese Ceramics, Independent Study, California State University, Sacramento (Dr. Jerald J. Johnson, Instructor), 1999
 - Anthropology 195A and 192: Fieldwork and Laboratory Work in Archaeology, Coloma, California State University, Sacramento (Dr. Jerald J. Johnson and Dr. Tom Strasser, Instructors), 1997
-

resource and business sectors, as well as to non-profit organizations and for-profit developers. Although the emphasis of this work was in archaeological resource management, Mr. Roark also consulted with Indian tribes regarding traditional cultural properties and conducted supervised architectural recordation. Regulatory experience includes CEQA, Warren-Alquist Act, Section 106 of the NHPA, NEPA, Archaeological Resources Protection Act, State-tribal gaming compacts (tribal environmental impact reports) and the Native American Graves Protection and Repatriation Act (NAGPRA). He has authored and co-authored a wide variety of cultural resources management documents: constraints analyses, categorical exemptions and exclusions, cultural resources inventory reports, archaeological survey reports, archaeological research designs (presence/absence testing, test excavation, and data recovery), cultural resources management plans, construction monitoring programs, environmental compliance training, test excavation reports, geoarchaeological analyses, initial studies, environmental assessments, and environmental impact reports/statements. Mr. Roark has surveyed, evaluated, and excavated several archaeological and cultural resources in the North Coast Ranges, Central Valley, Cascade Ranges, Sierra Nevada, South Coast Ranges, Mojave Desert, and Los Angeles Basin of California.

Representative Project Experience—California Energy Commission

In addition to the proposed Huntington Beach Energy Project, Mr. Roark presently serves as the lead cultural resources analyst and archaeologist for the Hydrogen Energy California project (Kern County), Alamitos Energy Center (Los Angeles County), Redondo Beach Energy Project (Los Angeles County), and El Segundo Energy Center (Los Angeles County).

Duties include review of applicant submittals, issuing data requests, research in historical repositories and online, and preparation of staff assessments.

Representative Project Experience—ICF International/Jones & Stokes

Energy and Fuels

Grimes Pipeline Environmental Services—CPN Pipeline Company, Sutter County, California (2010–2012)

Archaeologist. As lead archaeologist for this proposed natural gas pipeline, Mr. Roark was responsible for helping CPN Pipeline

comply with the cultural resources requirements of the California Energy Commission and Section 106 of the NHPA. Duties included records search and literature review; tribal consultation; coordination with Commission staff; archaeological survey; preparation of cultural resources reports, management plans, and portions of the application for certification; and direction of a geoarchaeological investigation.

Tri-Valley 2002 Capacity Increase Project—Pacific Gas and Electric Company (PG&E), Alameda and Contra Costa Counties, California (2000–2004)

Cultural Resources Manager. Mr. Roark designed a program of cultural resource compliance to satisfy the mitigation monitoring program previously prepared for the project. The cultural resources compliance program included archival research, consultation with Native Americans, cultural resource inventories and evaluations, and preparation of a comprehensive cultural resources treatment plan (CRTP). The CRTP set the procedures and standards for archaeological monitoring during construction, procedures for dealing with accidental discoveries, and reporting methods. Also monitored construction in sensitive areas and assisted with an inadvertent discovery of archaeological materials.

Los Banos-Gates 500-kV Transmission Line Project (Path 15)—Infrasource, Inc., Merced and Fresno Counties, California (2003–2005)

Lead Archaeologist for the Path 15 archaeological monitoring program designed by the Western Area Power Administration (Western). Evaluated cultural resources identified by resource monitors, including Native American monitors, over an 84-mile project corridor. Responded to over 70 inadvertent discoveries—recording, test excavating, and researching a total of 26 archaeological sites. Also surveyed newly added project elements and assisted Western and Infrasource with Section 106 compliance.

Path 15 GPS Data Collection Project—Western Area Power Administration, Merced and Fresno Counties, California (2011–2012)

Principal investigator and field director. Western hired ICF to evaluate the National Register eligibility of eight historic and prehistoric archaeological sites that I had recorded between 2003 and 2005. Mr. Roark prepared a research design for evaluating the sites in consultation with Western. The research design presented research questions that could be answered through detailed analysis of surface manifestations alone under favorable

conditions or through archival research. Mr. Roark directed fieldwork, which consisted of intensive surface recordation.

Vantage Wind Energy Project Cultural Resources Inventory—Kittitas County, Washington (2011)

Archaeologist. Contributing author responsible for reporting survey methods and findings, as well as recommendations for the treatment of archaeological resources. Also prepared environmental and cultural contexts for the report.

Central Valley Gas Storage Project Section 106 Consultation—Central Valley Gas Storage, LLC, Colusa County, California (2010–2011)

Lead archaeologist. The project consisted of a 17-mile natural gas pipeline from the Sacramento River across the Colusa Sink to the foothills on the eastern flank of the North Coast Ranges. Completed a cultural resources inventory for compliance with Section 106, CEQA, and California Public Utilities compliance. Tasks included records searches, correspondence with Indian tribes, a geoarchaeological assessment (literature based) of the project area, and preparation of an inventory report.

Carrizo-Midway 230kV Transmission Line Reconductoring Project—Pacific Gas and Electric Company (PG&E), Kern and San Luis Obispo Counties, California (2010–2011)

Lead cultural resources manager. Responsible for CEQA and Section 106 compliance on a 30-mile transmission line reconductoring project. Directed all aspects of the cultural resources work: research, geoarchaeological assessment, Indian consultation, survey, and reporting. Advised PG&E on feasible avoidance measures to protect about a dozen archaeological sites.

Palermo to East Nicolaus Transmission Line Reconstruction Project Proponent's EA Preparation—Pacific Gas and Electric Company (PG&E), Northern California (2006–2009)

Project manager and lead archaeologist. Managed Section 106 and CEQA compliance tasks, including research, consultation with Indians and historical societies, archaeological and historic structures surveys, evaluation of identified resources (historic archaeological and built environment), report preparation (cultural resources report and section of proponent's EA), and agency coordination. Designed the survey parameters such that PG&E did not have to authorize additional survey during construction.

Central California Clean Energy Transmission Project Proponent's EA—Pacific Gas and Electric Company (PG&E),

Fresno, Kern, Kings, Madera, and Tulare Counties, California (2009–2010)

Lead cultural resources manager. Advised PG&E regarding cultural resources regulatory compliance strategy and responsibilities from the project design phase through late-stage project planning. Ranked several alternative transmission line routes via a GIS-based model of cultural resources distribution and sensitivity. Conducted records searches and research, consulted with Indian groups, directed archaeological and built-environment surveys, and prepared iterative cultural resource reports.

Transportation

I-5/Cosumnes River Boulevard Interchange Project—City of Sacramento, California (2001–2002)

Lead Archaeologist for analysis of an 880-acre study area (slated for the extension of Cosumnes River Boulevard to I-5) to comply with Section 106 of the NHPA and CEQA. In addition to using standard inventory methods, Mr. Roark led a five-person crew in presence/absence excavations designed to explore geophysical anomalies detected through remote-sensing applications.

Preconstruction and Construction Environmental Monitoring—City of Sacramento/ Vali Cooper, Sacramento, California (2011–2012)

Project Manager and Lead Archaeological Monitor. Mr. Roark managed the biological and archaeological mitigation monitoring program for the first phase of the Sacramento Intermodal Transportation Facility (track relocation). His responsibilities consisted of interfacing with construction management staff to ensure that ICF is informed of construction activities and their schedule, deploying biological and archaeological monitors as needed, and responding to inadvertent archaeological discoveries.

Cultural Resources Compliance Support for the Railyards Initial Phase Project—Kimley-Horn Associates, Sacramento, California (2009–2012)

Project manager and lead archaeologist. Coauthored the archaeological testing plan for prehistoric and historic archaeological sites, using geotechnical data and historic maps to identify archaeologically sensitive areas. Also prepared the project inadvertent archaeological discovery plan. Crew chief for mechanical archaeological testing; identified the historic 6th Street Levee.

**Railyards Archaeological Monitoring of Soil Remediation—
Thomas Enterprises/ERM West, Sacramento, California
(2007–2012)**

Project manager and lead archaeological monitor. Responsibilities included construction monitoring, staff scheduling, evaluating inadvertent archaeological discoveries and coordinating such evaluations with staff from the California State Railroad Museum, reporting, and training construction staff in the proper procedures for archaeological discoveries.

**Sacramento Intermodal Transit Facility Track Relocation
Project Environmental Documents for CEQA/NEPA—City of
Sacramento, California (2008–2012)**

Lead archaeologist and project manager. Advised Caltrans and the City of Sacramento as to Section 106 and NEPA compliance concerning cultural resources. Due to the shortened compliance schedule entailed with American Recovery and Reinvestment Act funding, recommended a tiered approach that secured funding and protected cultural resources. Directed identification of surface archaeological resources, archival and geoarchaeological research to isolate potential buried archaeological resources, and preparation of an archaeological resources treatment plan. Exploratory and evaluative test excavations, components of the treatment plan, are underway. In 2011, Mr. Roark was selected to manage preparation of a NEPA re-validation document, air quality conformity analysis, and cultural resources inventory of a modification to the project.

Water

**Freeport Regional Water Project—Freeport Regional Water
Authority, Sacramento and San Joaquin Counties, California
(2005–2009)**

Lead cultural resource manager and lead archaeological monitor. Prior to construction of the FRWP, led ICF's cultural resources inventory of the 30-mile-long project and drafted a memorandum of agreement (MOA), to direct compliance with Section 106 of the NHPA. The MOA established procedures for the inventory of changes to the FRWP area, treatment of a historic property, and inadvertent archaeological discoveries during construction. Construction resulted in one inadvertent discovery of cultural resources. Worked with Bureau of Reclamation and construction staff to comply with the project MOA while allowing the contractor to continue work on the project. The construction contractors identified the need for additional work areas after the MOA was executed. These areas needed to be surveyed and reported to the

lead federal agency, Reclamation, and SHPO, which began to cause construction delays. Negotiated an amended MOA with Reclamation and the SHPO that streamlined the review process for newly identified project components.

Battle Creek Salmon and Steelhead Restoration Project—U.S. Bureau of Reclamation (Reclamation) and State Water Board, Shasta and Tehama Counties, California (2003–2005)

Principal investigator. Prepared a research design and guided archaeological test excavations of five prehistoric archaeological sites in the Cascade Range foothills near Red Bluff. Worked closely with Reclamation archaeologists to devise a suitable research design and a schedule and approach to completing Section 106 consultation under a stringent timeline.

Lower Northwest Interceptor Project—Sacramento Regional County Sanitation District, Sacramento and Yolo Counties, California (2001–2005)

Lead cultural resources manager. Coordinated efforts to identify potential cultural resources issues for the pre-design and design phase of a 19-mile sewer alignment. The proposed alignment was routed through portions of the greater Sacramento region that are highly sensitive for the presence of buried archaeological sites. Led a research program consisting of archival research, modeling of historic environments, extensive cooperation with Native Americans and local archaeologists, and architectural and archaeological surveys to recommend appropriate mitigation measures for known and potential cultural resources. Prepared the cultural resources section of an EIR and the cultural resources inventory report for the project.

Lower Northwest Interceptor Project—Sacramento Regional County Sanitation District, Sacramento and Yolo Counties, California (2005–2007)

Lead archaeological monitor. Devised an archaeological monitoring program designed to comply with complex federal regulatory requirements, determined whether construction was likely to disturb buried archaeological deposits, trained monitors and construction staff in their roles as resource stewards during construction, and oversaw staff archaeologists' fieldwork and reporting. Monitoring program included excavation of 298 auger tests to determine whether archaeological deposits were present in the project area and monitoring by qualified archaeologists to verify the results of the auger tests.

Sacramento River Bank Protection Project EIS/EIR—U.S. Army Corps of Engineers (Corps)/HDR-JSA JV, Sacramento County, California (2008–2012)

Primary author of the programmatic agreement and historic properties treatment plan (HPTP) for this state/federal levee repair program. The programmatic agreement will guide the Corps' cultural resources program for the life of the project particularly in the areas of consultation and documentation of cultural resource activities. The HPTP is a multidisciplinary document that stipulates appropriate identification efforts and treatment of a variety of property types: prehistoric and historic archaeology, non-archaeological properties of concern to Native Americans, historic built environment properties, cultural landscapes, and submerged resources.

Parks, Trails, and Open Space

Expansion of Frank Raines Regional Park—Stanislaus County Parks Department, Stanislaus County, California (1999)

Cultural Resources Manager. Conducted a literature review to determine the cultural resource sensitivity of the existing park and expansion area, then assisted County and ICF staff with the siting and development planning for new off-highway vehicle (OHV) trails so as to avoid known cultural resources and sensitive area. Also surveyed the various alternative OHV trails for the presence of cultural resources. Prepared a cultural resources inventory report in support of CEQA impact assessment.

El Dorado Hills Data Recovery—Serrano Associates, LLC, El Dorado County, California (2000)

Crew Member for archaeological excavations at 19th century mining camps and homestead sites located near the historic town of Clarksville. Member of the artifact analysis team and contributed to report preparation.

Suisun Marsh Management Plan EIS/EIR—California Department of Fish and Game (DFG), Solano County, California (2006–2010)

Cultural resources manager. Prepared a geoarchaeological assessment of Suisun Marsh to estimate the potential for buried and surface-manifested cultural resources for three project alternatives. Together with records search data and historic map research; the geoarchaeological assessment formed the crux of the analysis presented in the cultural resources section of the EIS/EIR.

Native American Projects

Big Sandy Casino and Resort Project EIS—Big Sandy Rancheria Band of Western Mono Indians, Fresno County, California (2007–present)

Cultural resources manager/principal investigator. Assisted Big Sandy Rancheria and the Bureau of Indian Affairs (BIA) with cultural resources compliance under NEPA and Section 106. Directed records searches and archival research, supported BIA's consultation with Indian tribes, corresponded with historical societies and non-federally recognized tribes, met with the state historic preservation officer to discuss compliance effort, conducted archaeological surveys and directed two evaluative test excavations. In addition, worked with BIA, Big Sandy, and Table Mountain Rancheria to devise a plan of action, pursuant to the NAGPRA, for the treatment of Indian human remains discovered during excavations. Also assisted with reburial of Indian remains. Preparation of cultural resources reports and EIS sections.

Buena Vista Rancheria Gaming and Entertainment Facility Tribal EIR—Stevens & O'Connell, Amador County, California (2006–2008)

Lead Cultural Resources Manager. Responsible for coordinating archaeological and built-environment inventories and assessments of off-reservation road improvements. Responsibilities included conducting records searches, archival research, ethnographic literature review, archaeological survey, and contributions to the Tribal EIR. Additionally, prepared a cultural resources management plan for the Buena Vista Band of Me-Wuk Indians' property to guide heritage preservation on the casino property. Also led the Section 106 compliance effort by meeting with agency personnel, Indian groups, and other concerned groups to arrive at reasonable terms for a memorandum of agreement.

Ports and Harbors

Promenade Report of Archaeological Monitoring—Port of Los Angeles, San Pedro, California (2009)

Archaeologist. Contributing author to the archaeological monitoring report for numerous inadvertent archaeological discoveries in the historic neighborhood known as Mexican Hollywood. Contributions included archaeological feature descriptions, tabulated artifact (functional group) analysis, and interpretation of materials.

Development/Redevelopment Projects

Seaview Vineyard Development—Peter Michael Winery, Sonoma County, California (2000–2002)

Cultural Resources Team Leader on an archaeological test excavation of prehistoric site CA-SON-2306 that would be affected by development of a vineyard in coastal Sonoma County. The excavation was conducted to evaluate the site for California Register of Historical Resources and NRHP eligibility.

Responsible for research, development of a test excavation program, excavation, ground stone analysis, report preparation, and overall project management.

Fiber-Optic Cable

ARE-ON Fiber Expansion—University of Arkansas/BHC Rhodes, Arkansas (2010)

Cultural resources manager. Prepared Section 106 consultation letters and corresponded by telephone with Indian tribes on behalf of the National Telecommunications and Information Administration. Analyzed data provided by a local cultural resources consulting firm and prepared an environmental assessment sections on the basis of these data. The project covered 36 counties in Arkansas and consisted of several hundred miles of fiber-optic line.

Sacramento Region Fiber Optic Projects—XO California, Inc., Placer, Sacramento, and Yolo Counties, California (2000–2002)

Lead archaeologist. Managed cultural resources task, which consisted of providing sensitivity assessments, conducting inventories, and monitoring recommendations for more than 20 proposed fiber optic builds. Because the majority of the proposed builds were located in urban settings not surveyed for archaeological sites before development, designed inventory and assessment methods to identify areas that likely contained buried archaeological deposits. According to the results of each assessment, assigned archaeological or Native American monitors to sensitive project areas.

Publication

Roark, Gabriel A. 2009. An Archaeological Study of Culture Process and Projectile Point Variability in the Southern North Coast Ranges of California. Unpublished M.A. thesis, Department of Anthropology, California State University, Sacramento. Electronic document, <http://csus->

dspace.calstate.edu/handle/10211.9/660, accessed April 24, 2014.

DECLARATION OF BRETT FOOKS

I, Brett Fooks, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting, Transmission, and Environmental Protection Division as a Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimonies on Hazardous Materials Management and on Worker Safety / Fire Protection for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 26, 2016

Signed: _____

At: Sacramento, California

BRETT FOOKS, P.E.

MECHANICAL ENGINEER

PROFESSIONAL EXPERIENCE

California Energy Commission - STEP

Sacramento, CA

2/2014 - Present

The Commission ensures that energy facilities (power plants) are permitted in an acceptable manner. The STEP division prepares environmental documentation for the Commission as required by the California Environmental Quality Act (CEQA).

MECHANICAL ENGINEER

Provide independent engineering analysis for various technical areas with an emphasis on hazardous materials management, worker safety, & fire protection.

- Review, analyze and prepare engineering analysis for hazardous materials management, fire protection, and worker safety for gas-fired power plants.
- Provide written and oral expert witness testimony at commission hearings.
- Conduct power plant inspections during construction and operational phases.
- Investigate accident, fire, and hazardous materials incidents at licensed power plants.

Capital Engineering Consultants, Inc.

Rancho Cordova, CA

6/2004 – 2/2014

A leader in mechanical engineering design in Northern California since 1947 specializing in areas including K-12 Education, Higher Education, Civic and Justice, and Healthcare.

SENIOR ENGINEER, ASSOCIATE

Manage the design, project specification, calculations and cost estimations for new and renovated construction projects.

Oversee and supervise the daily workload, mentoring, and quality control for an assigned junior engineer.

- Plan and monitor the workload of projects, while preparing and taking responsibility for the concept of and preliminary engineering solutions for the detailed design phase.
- Implement the detailed design engineering of HVAC systems; code review, heating and cooling load calculations, air-flow requirements, ductwork sizing and layout, piping sizing and layout, equipment selection, and system controls with an emphasis on healthcare facilities.
- Prepare and deliver calculations for Title 24 building compliance.
- Prepare and deliver calculations and documents for project LEED certification.

Select Accomplishments

- Assisted in the implementation and teaching of new 3-D modeling software, CAD-MECH, to team members for the Sutter Health Eden Medical Center.
- Worked with co-workers to create and implement standards for plumbing calculations firm wide leading to an increased efficiency.

EDUCATION

STATE OF CALIFORNIA ~ LICENSED PROFESSIONAL ENGINEER

UC DAVIS EXTENSION – WORKPLACE HEALTH & SAFETY CERTIFICATE (2016)

BACHELOR OF SCIENCE ~ MECHANICAL ENGINEERING (2004)

California Polytechnic State University, San Luis Obispo

Computer Literacy: Proficient in the use of various software applications including Microsoft Office (Word, Excel, PowerPoint, Outlook) AutoCAD 2012/2013, Revit 2013/2014, Visio, NavisWorks, and ProjectWise.

DECLARATION OF GEOFF LESH

I, Geoff Lesh, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting, Transmission, and Environmental Protection Division as a Senior Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimonies on Hazardous Materials Management and on Worker Safety / Fire Protection for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7/29/2016

Signed: _____

At: Sacramento, California



Geoffrey Lesh, PE

WORK HISTORY

California Energy Commission Senior Mechanical Engineer 2002 - Current

- Analyze siting permit applications for gas-fired and solar-thermal power plants in the technical areas of hazardous materials management, fire safety, security, and worker safety plans
- Provide written and oral expert witness testimony at commission hearings on power plant fire protection plans, risk assessments, and adequacy of local fire departments
- Recommend mitigations as needed
- Inspect power plants during construction and operational phases
- Investigate accident, fire, and hazardous materials incidents at power plants

Self-Employed Independent Investor 2000 - 2002

- Wrote market analysis computer software

Read-Rite Corp Wafer Engineering Manager 1994 - 2000

- Designed and developed wafer manufacturing processes for computer data storage systems. Managed team of engineers and technicians responsible for developing wet and dry chemical processes for manufacturing, including process and safety documentation
- Managed process and equipment selection for manufacturing processes
- Processes included vacuum processed metals and ceramics, grinding-polishing, plating, etching, encapsulation, process troubleshooting, and SPC reporting

Dastek Corp (Komag Joint Venture Start-up) Wafer Engineering Manager 1992 - 1994

- Developed wafer processes for new-technology recording head for hard disk drives
- Managed team of engineers and technicians
- This position included start-up of wafer fab, including line layout, purchase, installation, and startup of new process equipment, etc.

Komag, Inc Alloy Development Manager 1989 - 1992

- Developed new vacuum-deposited recording alloys
- Responsible for planning and carrying-out tests, designing experiments, analyzing results, managing test lab conducting materials characterizations
- Extensive process modeling, experiment design and data analysis

Verbatim Corp (Kodak) Process Development Manager 1983 – 1989

- Mechanical/materials engineering for computer disk manufacturing, including product, process, and equipment including metal-ceramic-plastic processes for optical disk development
- Production processes included metal plating, metal evaporation, reactive sputtering, laser-based photolithography, injection molding
- Steering Committee Member, Center for Magnetic Recording Research, UC San Diego
- Steering Committee Member, Institute for Information Storage Technology, Santa Clara University

IBM Corp Mechanical/Process Engineer 1977 - 1983

- Product development for photocopiers, semiconductors, and computer data tape-storage systems

EDUCATION

Stanford University, Master of Science Degree	Materials Science and Engineering
UC-Berkeley, Bachelor of Science Degree (Double Major)	Mechanical Engineering, Materials Science and Engineering
University of Santa Clara, Graduate Certificate	Magnetic Recording Engineering

PROFESSIONAL LICENSES and CERTIFICATIONS

Registered Professional Engineer, California (PE)	Mechanical #M32576 Fire Protection #FP1827 Metallurgical #MT1940
Certified Safety Professional (CSP)	Board of Certified Safety Professionals
Certified Fire Protection Specialist (CFPS)	Certified Fire Protection Specialist Board of NFPA
Certified Fire and Explosion Investigator (CFEI)	Board of National Association of Fire Investigators
OSHA 40-hr HAZWOPER Hazardous Materials Incident Training	

PROFESSIONAL ASSOCIATIONS

American Society of Safety Engineers – Professional Member
Society of Fire Protection Engineers – Professional Member
National Fire Protection Association – Member
National Association of Fire Investigators – Member

PUBLICATIONS

All-Solid Lithium Electrodes with Mixed-Conductor Matrix, J. Electrochem. Soc. 128, 725 (1981).
Proc. Symp. on Lithium Batteries, H.V. Venkatasetty, Ed., Electrochem Soc (1981), p. 467.

PATENTS

Method of Preparing Thermo-Magneto-Optic Recording Elements, US Patent# 4,892,634, (assigned to Eastman Kodak Co.)

DECLARATION OF

Steven Kerr

I, Steven Kerr, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting and Compliance Office of the Energy Facilities Siting Division as an Energy Resources Specialist III (Supervisory).
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on Land Use for the Huntington Beach Energy Project amendment based on staff's and my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and staff's and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/31/16 Signed: St. A. Kerr

At: Sacramento, California

Steven Kerr

Professional Experience:

California Energy Commission
January 2012-Present

Sacramento, CA
Energy Resources Specialist III

- Supervise the preparation of alternatives, land use, and socioeconomics staff analyses.
- Review power plant applications and amendments for alternatives, land use, socioeconomic, land use, transportation, and visual impacts.
- Evaluate projects in accordance with CEQA, the California Energy Commission siting regulations, and federal, state and local laws, ordinances, regulations, standards (LORS).
- Participate in public workshops and hearings regarding proposals.
- Write environmental analysis documents.

Thomas P. Kerr Inc.
August 2011-January 2012

Sacramento, CA
Property Manager

- Management of properties and assets throughout California and Oregon.
- Assist in the preparation of mobile home park closure impact report for Port of San Luis.
- Use various software applications to produce and review billing and financial records.
- Work with local agencies to coordinate infrastructure improvements.

Ground(ctrl)
February 2010-August 2011

Sacramento, CA
Director of Customer Support

- Coordinate and provide customer support for A-list musical artist fan clubs, online stores, e-mail marketing, ticketing, aggressive online marketing, and much more.
- Resolve escalated customer support issues, credit card disputes, and Better Business Bureau cases.
- Supervise and train customer support team members and interns.

City of Sacramento
General Services Department
July 2009-February 2010

Sacramento, CA
Customer Service Representative

- Perform concurrently multiple customer service related duties for all City of Sacramento departments by phone/email.
- Interpret and apply City regulations and procedures as applicable to billing, fees, and collections.
- Learn and explain the organization, procedure and operation details of the City.
- Use a variety of business software applications and assess maps.

City of Sacramento
Development Services Department
February 2007-July 2009

Sacramento, CA
Assistant Planner

- Project manager for various residential, commercial, industrial, and office development projects.
- Assist customers with zoning, design review, preservation, environmental, subdivision code, and sign questions, both at the public counter and by phone/email.
- Provide customers with required entitlement information, fee estimates, and accept applications for proposed development projects.
- Review applications and plans for consistency with city codes, general plan, and applicable community plans, specific plans and planned unit development guidelines.
- Present projects at community meetings and work with neighborhood association leaders on controversial projects.
- Write staff reports and conditions of approval.
- Present projects at Zoning Administrator, Planning Commission, and City Council public hearings.
- Research development and entitlement histories of parcels.

City of Atascadero
Community Development Department
March 2005-June 2006

Atascadero, CA
Planning Intern

- Prepare environmental review documents.
- Review business licenses and building permits.
- Draft letters and staff reports.
- Respond to questions from the public on planning and zoning related issues.
- Access and update information in GIS and Excel

Education:

2000-2005 California State Polytechnic University, San Luis Obispo, CA
Bachelor of Science in City and Regional Planning

DECLARATION OF Edward James Brady

I, **Edward James Brady**, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting, Transmission and Environmental Protection Division as a Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimonies on Noise and Vibration, Power Plant Efficiency and Power Plant Reliability for the **Huntington Beach Energy Project**, based on my independent analysis of the Amendment and supplement hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 9/1/16

Signed: Edward Brady

At: Sacramento, California

Edward James Brady

Mechanical Engineer

Summary of Experience

Forty-three years of experience in the profession of mechanical engineering as a staff engineer to the California Energy Commission, engineering consultant, design group supervisor in a major power plant project, senior engineer for a gas and electric utility, sales and design engineer for a contractor, and instructor in a community college.

Education

- BSME, Santa Clara University, 1972
- Graduate Engineering Studies, Santa Clara University
- Graduate Business Studies, University of San Francisco
- Continuing Education, UC Extension

Professional Registration

- Mechanical Engineer (M17924) California
 (25505) Washington
 (33082) Colorado
 (9248, Inactive) Nevada
- Civil Engineer (C36174) California

Affiliations

- American Society of Mechanical Engineers (ASME), Life Member
- American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), Life Member

Curriculum Vitae

- 2011 – Present **Staff Mechanical Engineer**, California Energy Commission, Siting, Transmission, and Environmental Protection Division (STEP). Performs analysis of generating capacity, reliability, efficiency, noise and vibration, and the mechanical, civil, electrical, and structural aspects of power plant siting and construction cases.
- 1988-2011 **Principal Mechanical Engineer**, Brady Engineering. Provided design and consulting services for the permitting and construction of industrial and commercial facilities, and residential buildings in the fields of heating, ventilating air conditioning (HVAC), plumbing, fire protection and energy analyses.
- 1984-1988 **Design Group Supervisor**, Joint PG&E and Bechtel Project. Worked as the mechanical group supervisor responsible for the design modifications required for the licensing of Diablo Canyon Power Plant, Units 1 and 2.
- 1980-1988 **Senior Mechanical Engineer**, PG&E Civil Engineering Department, Architectural Section. Provided work group supervision and design of building mechanical systems for common utility plant facilities (CUP) and balance of plant systems for power production facilities.
- 1977-1980 **Mechanical Engineer**, PG&E Civil Engineering Department, Architectural Section. Provided HVAC and plumbing design for CUP and power production facilities.
- 1974-1977 **Instructor**, San Francisco Community College District, John O'Connell Evening School. Provided apprenticeship training in the technical fields of HVAC and refrigeration.
- 1977 **Design Engineer**, Charles and Braun Consulting Engineers, San Francisco. Worked as a staff designer in the fields of HVAC and plumbing for commercial facilities include a sentence detention facilities and a proto-type regional facility for a federal agency.
- 1972-1976 **Sales and Design Engineer**, Scatena York Company, San Francisco. Worked as a sales and design engineer for a refrigeration contractor, which provided design and installation of refrigeration systems for supermarkets and cold storage facilities.

Power Plant/Utility Experience

California Energy Commission, Rio Mesa Solar Electric Generation Station (RMSEGS).
500 MW Solar Power Tower. Riverside County

, Hidden Hills Solar Electric Generating Station
(HHSEGS). 500 MW Solar Power Tower. Inyo County.

, Hydrogen Energy California (HECA). 405 MW
Combined Cycle, Fuel Gasification, CO₂ Sequestration,
Ammonia Production. Kern County

, Quail Brush Generating Project (QBGP). 1100 MW
Reciprocating Engine Electric Generation. City of San
Diego

, Huntington Beach Energy Project (HBEP). 939 MW
Combined Cycle. City of Huntington Beach.

, Redondo Beach Energy Project (RBEP). 496 MW
Combined Cycle. City of Redondo Beach, Los Angeles
County.

, Alamitos Energy Center (AES). 1936 MW Combined
Cycle. City of Los Alamitos.

, Palen Solar Electric Generating Station (PSEGS). 500
MW Power Tower, Licensing Amendment. Riverside
County, California.

Bottle Rock Power Plant. 55 MW Geothermal Facility,
Repowering Amendment. Lake County, California

PG&E , Diablo Canyon Power Plant, Units 1 and 2. Licensing of safety related systems.
, Diablo Canyon Power Plant, Administration Building, SLO County Emergency
Response Building

, Geysers Power Plant, Units 16, 17, 20, and 21. Ventilation and cooling for
turbine building and hazardous waste disposal facilities, administration building.

, Helms Pumped Storage Facility, Kern County. Smoke control ventilation for
underground transformer vaults.

, Humboldt No. 3, Eureka. Decommissioning of nuclear facility and construction of hazardous materials storage and handling.

, Moss Landing Power Plants, Units 1 through 6, Monterey County

, Morro Bay Power Plant, Morro Bay

, Hunters Point Power Plant, San Francisco

, Potrero Power Plant, San Francisco. Combined Cycle

, Gas Transmission Facilities, Line 300 and 400, Topock and Corning Compressor Stations, McDonald Island and Brentwood Gas Storage Facilities

, Central Computer Facilities, San Francisco and Vacaville

, 77 Beale Street, San Francisco. Energy Management System

, 215 Market Street, San Francisco. Boiler Replacement

, Underground Fuel Tank Replacement. Upgrade of more than 500 gallon fuel storage tanks to meet double containment requirements.

, Contra Costa Power Plants, Unit 1 through 6, Water Treatment

, Pittsburg Power Plants, Unit 1-5, Water Treatment Facilities

, Avon, Martinez and Oleum (AVO), Water Treatment Upgrade

, Tiger Creek Powerhouse, North Fork Feather River

, Kirchoff No. 2 Pump Storage Facility.

, Technical Support Services, Marketing Department

South Bay Sanitary Authority, 1400 Radio Road, Redwood Shores. Gas piping and boiler conversion.

DECLARATION OF HUEI-AN (ANN) CHU

I, Huei-An (Ann) Chu, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting, Transmission and Environmental Protection Division as an Air Resources Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Public Health** for the **Huntington Beach Energy Project Amendment**, based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/17/2016

Signed: Huei-An Chu

At: Sacramento, California

Huei-An (Ann) Chu

1516 Ninth Street, MS-46, Sacramento, CA 95815

Phone: (916) 651-0965 , Email: Ann.Chu@energy.ca.gov

EDUCATION

PhD, Environmental Sciences and Engineering, 05/2006

School of Public Health, University of North Carolina at Chapel Hill

Area of Specialization: Environmental Risk Assessment, Environmental Management and Policy, Risk-Based Regulation, Biostatistics, Environmental Epidemiology

MEM, Environmental Management, 05/2000

School of Forestry and Environmental Studies, Yale University, New Haven, CT

MS, Environmental Engineering, 06/1998

National Taiwan University, Taipei, Taiwan

BA, Geography, with honors, 06/1996

National Taiwan University, Taipei, Taiwan

SKILLS

Language: Fluent in Chinese and English.

Computer software and programming skills: HARP, SAS, Stata, Minitab, ArcGIS, ArcView, ArcInfo, Stella, Crystal Ball, ISC, ERMMapper, Microsoft Excel, PowerPoint, Word.

WORK EXPERIENCE

Air Resources Engineer, California Energy Commission, 1/12/2012 - Present

- Independently performs responsible, varied analyses assessing air quality and public health impacts of energy resource use and large electric power generation projects in California.
- Model air quality and public health impacts of stationary sources using HARP (Hot Spot Analysis and Reporting Program).
- Identify air quality and public health impacts of stationary sources and measures to mitigate these impacts following California Environmental Quality Act and regulations of US EPA (including the National Environmental Policy Act), ARB, and the Districts.
- Collect, analyze, and evaluate data on the effects of air pollutants and power plant emissions on human health, and the environment.
- Ensure conditions of certification are met and recommending enforcement actions for violations.

Research Associate, Taiwan Development Institute, 10/01/2010 – 12/31/2011

- Provided professional consultation for the environmental risk assessment of Taiwan's techno-industrial development initiatives
- Reviewed the environmental risk assessment reports of Taiwan's techno-industrial development initiatives
- Presented in various distinguished lecturer series about environmental risk assessment

Consultant, Chu Consulting, 08/2007 - 07/2010

- Conducted a cumulative risk assessment to evaluate the risk associated with the emissions of VOCs from a petrochemical plants in southern Taiwan
- Used EPA's ISC3 model (based on Gaussian dispersion model) to simulate the dispersion and deposition of VOCs from this petrochemical plant to the neighboring areas, then used ArcGIS to spatially combine the population data and VOC simulation data (and further calculated risks)

- Built a framework of risk-based decision making to set the emission levels of VOCs to reduce people's exposure and the risk of experiencing health problems
- Presented in conference: SRA 2007
- Awarded: CSU-Chico BBS Faculty Travel Funds (2007)

Environmental Justice Intern, Clean Water for North Carolina (CWFNC), Summer, 2005

- Reviewed and critiqued key state environmental policies and the federal EPA Public Participation Policy.
- Interviewed impacted communities, member organizations of the NC Environmental Justice Network, state policy officials about how those policies are actually implemented.
- Wrote a report about the survey and review of environmental justice needs for key state policies.
- Report Publication: "Achieving Environmental Justice in North Carolina Public Participation Policy" (Aug, 2005).

Volunteer, New Haven Recycles and Yale Recycling, 08/1998 – 05/2000

- Promoted recycling and conservation
- Checked trash cans (chosen randomly) and recycling bins at each entryway of residential college, then gave grades.

Volunteer, Urban Resource Initiative (URI), Summer, 1998

- Planted trees for local community of New Haven for a better and sustainable environment

RESEARCH EXPERIENCE

Postdoctoral Research

Department of Public Health Sciences, University of California, Davis, 07/01/2010 - present

Research advisor: Dr. Deborah H. Bennett and Dr. Irva Hertz-Picciotto

- Work on two projects: NIEHS-funded ***Childhood Autism Risks from Genetics and Environment (CHARGE)*** and EPA-funded ***Study of Use of Products and Exposure Related Behavior (SUPERB)***.
- Perform statistical and quantitative analyses with SAS to analyze collected house dust data and children's urine concentrations of metabolites.
- Conduct exposure assessment to investigate if pesticides, flame retardants, and phthalates are risk factors for children autism.
- Conduct exposure assessment to explore the relationships between children's exposure to phthalate, benzophenone-3 (oxybenzone), triclosan, and parabens, and the use of personal care products.
- Produce scholarly peer-reviewed publications of methodology and findings, and write the final reports of both projects.

Carolina Environmental Program, University of North Carolina at Chapel Hill, 01/01/2006 – 12/31/2006

Research advisor: Dr. Douglas J. Crawford-Brown

- Applied a framework of risk-based decision-making to perchlorate in drinking water. (Awarded: SRA Annual Meeting Travel Award 2006)
- Conducted a material and energy flow analysis (MEFA) to quantify the overall environmental impact of Bank of America operations, and quantitatively analyze the strategies BOA might adopt to reduce these impacts and achieve sustainability. (Report Publication: "Environmental Footprint Assessment")

Doctoral Research, 08/2000-12/2005

Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill

Research advisor: Dr. Douglas J. Crawford-Brown

- Dissertation topic: "**A framework of Risk-Based Decision Making by Characterizing Variability and Uncertainty Probabilistically: Using Arsenic in Drinking Water as an Example**".
- Conducted risk assessment for arsenic in drinking water.
- Conducted theoretical analysis on the variability and uncertainty issues of risk assessment.

- Conducted a meta-analysis to improve dose-response assessment.
- Conducted analytical and numerical analysis to build a new framework of risk-based decision-making which can be applied coherently across the regulation decisions for different contaminants.
- Presented in conferences: APPAM (2004), SRA (2004, 2005 and 2006), DESE Seminar (2005), CEP Symposium on Safe Drinking Water (2006).
- Awarded: SRA Annual Meeting Student Travel Award (2004 & 2005), UNC-CH Graduate School Travel Grants (2004), UCIS Doctoral Research Travel Awards (2002).

Master's Research

School of Forestry and Environmental Studies, Yale University, 08/1999 - 06/2000

Research advisor: Dr. Xuhui Lee

- Master's project: **"Forest Stand Dynamics and Carbon Cycle"**.
- Research project: "Monitoring Forest CO₂ Uptaking"
- Used remote sensing (ERMapper) to investigate the role of forest in the uptake of CO₂.
- Awarded from Teresa Heinz Scholars for Environmental Research Program (2000) and Klemme Award (1999).

Graduate Institute of Environmental Engineering, National Taiwan University, 06/1996 - 06/1998

Research advisor: Dr. Shang-Lien Loh

- Master's thesis: **"The Loads of Air Pollutants from Urban Areas on a Neighboring Dam and its Water Quality"**
- Research Projects: "Research on Air Pollutant Deposition in Urban Areas" and "the Fate and Flow of Recyclable Materials"
- Used Gaussian's Dispersion model (ISC3) to investigate the loads of air pollutants on dam water.

TEACHING EXPERIENCE

Lecturer

Department of Environmental Studies, California State University at Sacramento

- Environmental Politics and Policy, Fall 2011

Department of Geological & Environmental Science, California State University at Chico

- Environmental Risk Assessment, Spring 2009 & 2010
- Applied Ecology, Spring 2008
- Pollution Ecology, Fall, 2007

Department of Geography & Planning, California State University at Chico

- Seminar in Applied Geography & Planning – Environmental Regulation and Policy, Fall, 2007

Department of Forestry and Environmental Resources, North Carolina State University

- Environmental Regulation, Fall, 2006

Teaching Assistant

Department of Environmental Sciences and Engineering, UNC-Chapel Hill

- Environmental Risk Assessment, Spring, 2002
- Introduction to Environmental Science, Fall, 2001
- Analysis and Solution of Environmental Problems, Fall, 2001

Lab Instructor

Department of Environmental Sciences and Engineering, UNC-Chapel Hill

- Biology for Environmental Science, Fall, 2000

Graduate Institute of Environmental Engineering, National Taiwan University

- Water Quality Analysis, Fall, 1997

AWARDS and HONORS

- CSU-Chico BBS Faculty Travel Funds, 2007
- Member of Society of Risk Analysis (SRA), 2006-2008
- SRA Annual Meeting Student Travel Award, 2004-2006
- UNC-CH Graduate School Travel Grants, 2004
- Member of Association for Public Policy Analysis and Management (APPAM), 2004-2005
- UCIS Doctoral Research Travel Awards, 2002
- Graduate Student Teaching and Research Assistantships, 2000-2005
- Teresa Heinz Scholars for Environmental Research Program, 2000
- Yale Forestry & Environmental Studies, Klemme Award, 1999

PUBLICATIONS (SELECTED LIST)

Huei-An Chu, Deborah H. Bennett, Irva Hertz-Picciotto, "Phthalates in relation to autism and developmental delay: Exploratory analyses from the CHARGE Study". (In preparation)

Huei-An Chu, Deborah H. Bennett, Irva Hertz-Picciotto, "Personal Care Products: Possible Sources of Children Phthalate Exposure". (In preparation)

Huei-An Chu and Douglas J. Crawford-Brown, "A Probabilistic Risk Assessment Framework to Quantify the Protectiveness of Alternative MCLs for Arsenic in Drinking Water", *Journal of American Water Works Association*. (Being revised)

Huei-An Chu and Douglas J. Crawford-Brown, "Letter to the Editor: Inorganic Arsenic in Drinking Water and Bladder Cancer: A Meta-Analysis in Dose-Response Assessment", *International Journal of Environmental Research and Public Health*, 2007, 4(4), 340-341.

Huei-An Chu and Douglas J. Crawford-Brown, "Inorganic Arsenic in Drinking Water and Bladder Cancer: A Meta-Analysis in Dose-Response Assessment", *International Journal of Environmental Research and Public Health* 2006, 3(4), 316-322.

S.L. Lo and **H.A. Chu**, "Evaluation of Atmospheric Deposition of Nitrogen to the Feitsui Reservoir in Taipei", *Water Science & Technology*, 2006, 53(2), 337-344.

CSE Consulting and the UNC Carolina Environmental Program (CEP), "Environmental Footprint Assessment", Report for Bank of America, Aug, 2006.

Huei-An Chu, "Achieving Environmental Justice in North Carolina Public Participation Policy", Report for Clean Water for North Carolina (CWFNC), Aug, 2005.

Huei-An Chu, "Arsenic and its Health Implications", Report for University Center for International Studies Graduate Travel Awards, 2002.

PRESENTATIONS (SELECTED LIST)

Guest Speaker, "Human Health Risk Assessment – Arsenic in Drinking Water as an Example". Tunghai University, Taichung, Taiwan. (December 16th, 2010)

Guest Speaker, "Environmental Problems in Developing Countries", Course Title: Developing Countries, Department of Economics, CSU-Chico (October 31st, 2008)

"Cumulative Risk Assessment for Volatile Organic Compounds (VOCs) from Petrochemical Plants in Southern Taiwan". Oral Presentation in Society of Risk Analysis (SRA) 2007 Annual Meeting, San Antonio, TX. (December, 2007)

Guest Speaker, "Arsenic in Drinking Water", Course Title: Environmental Geology, CSU-Chico. (November 13th, 2007)

"Risk-Based Environmental Regulation for Arsenic in Drinking Water", Oral Presentation in Department of Environmental Health Seminar, East Tennessee State University (February 2nd, 2007)

"A Framework of Risk-based Decision Making by Characterizing Variability and Uncertainty Probabilistically: Using Arsenic in Drinking Water as an Example", Oral Presentation in Society of Risk Analysis (SRA) 2006 Annual Meeting, Baltimore, MD. (December, 2006)

"A New Policy Tool to Choose Water Quality Goals under Uncertainty", Poster Presentation in Society of Risk Analysis (SRA) 2006 Annual Meeting, Baltimore, MD. (December, 2006)

"A framework of Risk-Based Decision Making by Characterizing Variability and Uncertainty Probabilistically: Using Arsenic in Drinking Water as an Example", Oral Presentation for National Center for Environmental Assessment (NCEA), Environmental Protection Agency (EPA). (October 26th, 2006)

"Probabilistic Risk Assessment for Arsenic in Drinking Water", Poster Presentation in Carolina Environmental Program (CEP) 2006 Symposium on Safe Drinking Water, Chapel Hill, NC. (March, 2006)

"Probabilistic Risk and Margins of Safety for Water Borne Arsenic", Poster Platform Presentation in Society of Risk Analysis (SRA) 2005 Annual Meeting, Orlando, FL. (December, 2005)

"Using Meta-Analysis in Dose-Response Analysis – Risk Assessment of Arsenic in Drinking Water as an Example", Poster Platform Presentation in Society of Risk Analysis (SRA) 2004 Annual Meeting, Palm Springs, CA. (December, 2004)

DECLARATION OF LISA WORRALL

I, Lisa Worrall, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Socioeconomics for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 25, 2016 Signed: Lisa Worrall

At: Sacramento, California

Summary

- Preparation of environmental documents in compliance with the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), California Energy Commission siting regulations, and federal, state and local laws, ordinances, regulations and standards (LORS).
- Projects include thermal power plants, private residential and commercial development, county and public works, and state transportation.

Employment Experience

**California Energy Commission
Planner II**

Sacramento, California
January 2010 to Present

- Prepare an independent CEQA analysis of the environmental impacts from thermal power plants related to land use, socioeconomics, and traffic/transportation.
- Evaluate projects in accordance with CEQA, the California Energy Commission siting regulations, and federal, state and local LORS.
- Review information provided by the project applicant and other resources to assess the environmental effects of energy facility proposals

Sacramento County Department of Environmental Review & Assessment

Associate Environmental Analyst

Sacramento, California
April, 2006 – May, 2009

- Prepared a variety of environmental documents in compliance with CEQA, NEPA and local, state and federal LORS.
- Conducted project site assessments, reviewed engineering plans, and researched and interpreted scientific data for project impact analysis.
- Managed multiple public works and private development projects with a variety of environmental concerns and overlapping deadlines.
- Maintained effective relationships with other Sacramento County departments, agencies, and service providers to ensure comments and recommended conditions of project approval were obtained and any associated environmental impacts assessed.

Analytical Environmental Services

Associate

Sacramento, California
April, 2004 – October, 2005

- Interpreted highly technical traffic impact studies, utilizing the information to develop a traffic impact assessment chapter for use in a variety of environmental documents complying with CEQA, NEPA, and county and city transportation policies and codes.
- Managed the preparation of traffic studies, including developing the scope of study, securing the contract, and reviewing the work product.
- Managed multiple private development projects simultaneously under tight deadlines. Clients included Native American tribes and cities.
- Coordinated with state, county and city officials in the development of traffic study methodology, parameters and assumptions for proposed projects.

- Worked closely with transportation engineers to understand the complexities of each project's specific traffic impacts.

California Department of Transportation (Caltrans)

Associate Environmental Planner

Environmental Planner

Fresno, California

March, 2003 – March, 2004

August, 2000 – March, 2003

- Prepared all levels of environmental documentation for transportation projects in compliance with CEQA and NEPA.
- Coordinated and interpreted environmental technical studies for incorporation into the environmental document and for explanation to other team members, agencies, and the public.
- Managed and represented environmental concerns with other functional units.
- Led and participated in public outreach events.
- Coordinated project development with other Caltrans departments, agencies and the public.

Education

California State University, Northridge

Bachelor of Arts in Geography

May, 2000

**DECLARATION OF
MIKE CONWAY, ENGINEERING GEOLOGIST**

I, Mike Conway, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting Transmission and Environmental Protection Division as an Engineering Geologist.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Soil and Water Resources and Geology and Paleontology for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: September 20, 2016 Signed: Mike Conway

At: Sacramento, California

Resume for Mike Conway

Education: Master of Science in Geology, California State University, Sacramento, August 2012.
Bachelor of Science in Geology, University of California, Davis, August 2003.

Certifications: California Professional Geologist (PG), no. 9107
Certified Professional in Erosion and Sediment Control (CPESC)
Certified Erosion, Sediment and Storm Water Inspector (CESSWI)
Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

Experience: *Engineering Geologist: California Energy Commission, Sacramento, CA* **2009-Present**

- Serve as an expert witness in water policy and technical analyses for power plant siting cases
- Prepare expert testimony in subject areas of hydrogeology, soil erosion, surface water flow
- Help develop and implement statewide policy on power plant water use
- Prepare expert analyses of state law, ordinance, regulations, and standards applicable to water use
- Perform onsite evaluations of soil and water resource impacts pre- and post-project
- Construct hydraulic and hydrogeologic models to evaluate resource impacts

Environmental Scientist: Central Valley Water Board, Rancho Cordova, CA **2009**

- Wrote municipal storm water permits for Phase I communities in the Central Valley
- Reviewed storm water annual reports for Phase I and II municipalities
- Conducted audits of industrial sites for compliance with storm water permits
- Conducted audits of municipalities for compliance with municipal permits
- Represented Water Board in large technical workshops and other public forums

Environmental Consultant: Wood Rodgers, Inc., Sacramento, CA **2006-2009**

- Consulted clients on how to comply with Federal, State and local storm water quality regulations
- Helped public and private sector clients gain State Water Resources Control Board (SWRCB) permit coverage under Large and Small MS4 General Permits, NPDES Permits, CWA Section 401 Permits
- Consulted clients on Army Corps of Engineers, 404 Permitting
- Developed a storm water quality manual for Yolo County
- Prepared Caltrans environmental documentation and design for all project phases
- Drafted water pollution control exhibits using both AutoCAD and MicroStation
- Prepared Caltrans Storm Water Data Reports including cost estimates
- Designed landscaping plans for Caltrans' Modesto Ramp Rehabilitation Project
- Prepared Spill Prevention Control and Countermeasure (SPCC) plans

Storm Water Quality Consultant: Envirosafety Services, Elk Grove, CA **2004-2006**

- Wrote site specific SWPPPs to include guidance specific to city, county, and geographical constraints
- Designed exhibits using AutoCAD
- Conducted inspections at construction sites throughout the Central Valley for (SWPPP) compliance
- Resolved storm water compliance issues in cooperation with site superintendents and inspectors

Post-Graduate Researcher: Dept. of Land, Air, and Water Resources, U.C. Davis, CA **2003**


- Studied the affect of irrigation practices on wetland ecology and water quality
- Independently organized monthly analyses and data processing of selenium contaminated invertebrate, algae, and water samples from the Tulare Lake Drainage District
- Managed concentrated acids, carcinogenic solutions, and final fluorescence measurements
- Compiled research data and presented findings to a team of eight colleagues

DECLARATION OF JOHN HOPE

I, John Hope, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Traffic and Transportation for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 9/13/10 Signed: 

At: Sacramento, California

DECLARATION OF JOHN HOPE

I, John Hope, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Alternatives for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7/13/10 Signed: 

At: Sacramento, California

JOHN HOPE

1516 9th Street, MS 40
Sacramento, California 95814

(916) 654-7119
john.hope@energy.ca.gov

Land Use and Environmental Planner

John Hope has sixteen years' experience with current and long-range land use planning and environmental planning. He has served the public interest through evaluating economic, social, and environmental issues in communities. He is a skilled advocate effective in presenting professional planning knowledge to interest groups, the public, and political affiliations.

PROFESSIONAL EXPERIENCE

CALIFORNIA ENERGY COMMISSION, Sacramento, California

Environmental Planner II, December 2011 to Current

As part of the Siting, Transmission and Environmental Protection (STEP) division - Environmental Office, I prepare environmental documentation for proposed energy facilities for the Commission as required by the California Environmental Quality Act (CEQA). Specifically, I write technical analyses for facility siting cases and planning studies in the areas of socioeconomic, environmental justice, land use, traffic and transportation, and visual resources, along with and formulate solutions and mitigation unique to each individual energy facility. I provide expert technical expertise and serve as a member of inter-disciplinary team that evaluates potential environmental and socioeconomic effects of proposed power plants, policies, and plans for energy development in order to satisfy the requirements of the Warren-Alquist Act and CEQA.

AECOM, Sacramento, California

Noise Analyst, February 2010 to July 2011

I served as assistant project manager, environmental planner, or air quality/noise analyst for various CEQA/NEPA documents. My work focused on preparing environmental setting and impact analysis sections, such as land use, traffic, public services, for projects related to infrastructure improvements, residential development, fairgrounds, industrial expansion, business parks, mixed-use developments, and economic appraisal. I used various modeling techniques along with SoundPLAN, a software-based noise prediction modeling program, to assess project-generated noise levels in an environment. Through the use of SoundPLAN, I graphically mapped and visually evaluated project-generated noise levels based on principles of acoustics. I also used SoundPLAN to model noise maps, design traffic noise mitigation, and predict combined noise levels. My experience in long-range planning also involved preparation of various elements for general plans and community plans.

EDAW | AECOM, Sacramento, California

Associate Environmental Planner, September 2004 to June 2009

I wrote technical sections and managed environmental documents that analyze and describe to the public the potential environmental impacts of implementing development projects, including needed on-site and offsite infrastructure. I supervised preparation of environmental documents utilizing information from the client (i.e., state, county, city) and other professionals (e.g., air quality consultant, traffic engineers) to conduct environmental impact analysis of development projects. I also wrote sections and conducted research for general plans and specific plans. I worked as part of a team in preparing these documents to meet the requirements of state and federal permit regulations. I diligently maintained budgets and worked within stringent schedules as part of managing preparation of environmental and community planning documents with local agencies, cities and counties, and environmental specialists. I prepared scopes of work and proposals for new work opportunities.

STANTEC CONSULTING, Sacramento, California

Project Planner, July 2002 to August 2004

I was responsible for providing land planning and environmental impact analysis in environmental engineering firms with various environmental remediation projects throughout northern California. I conducted hands-on oversight of remediation projects to assess the onsite environmental impacts and analyzed their successfulness. I provided my

proficient writing skills through the preparation of site reports related to remediation projects. I was relied upon to provide my land planning, environmental impact analysis, and entitlement processing expertise.

I was also responsible for providing assistance to land developers through the entitlement process including preparing development applications, preparing due diligence reports, and representation of the project to the public-at-large. I assisted cities and counties with the preparation of environmental documents and the processing of proposed land development projects. I managed the implementation of land development projects including large residential subdivisions, commercial development, public facilities, and business parks by coordinating efforts being pursued by other associates including surveyors, engineers, environmental specialists, public agencies, and the developer themselves. I also wrote technical sections that analyzed the environmental impacts associated with large infrastructure improvement projects and prepared the environmental document articulating the team's findings. Co-workers relied upon me to provide land use and environmental planning expertise towards a team effort.

PACIFIC MUNICIPAL CONSULTANTS, Rancho Cordova, California
Assistant Planner, July 1999 to July 2002

As part of my work experience I evaluated proposed development projects, provided code enforcement, and assisted the public-at-large. I gained experience in long-range planning from diligent researching, and writing technical sections for General Plans and environmental documents.

As part of a team effort, I was responsible for the expedited review and management of proposed development applications through the entitlement process and conducting environmental review while working as a land use planner for the City of Elk Grove. I was responsible for processing and reviewing current planning projects applications such as subdivision maps, use permits, design review applications, staff level discretionary review, and other entitlements as assigned by the Community Development Director. As part of this process, I evaluated proposed projects with the requirements of the municipal code and General Plan, presented development projects, and portrayed issues surrounding the project to decision makers and the public through writing staff reports and articulating my professionalism to Planning Commissions and City Councils. As time went on, I worked my way up for the opportunity to process larger and more complicated development projects.

In addition, I worked on the City of Elk Grove's first General Plan by writing and analyzing all the quantitative and statistical data for the Housing element and administered public meetings and workshops. I wrote the draft Housing Element, started the State certification process with the Department of Housing and Community Development, and assisted with the preparation of other required elements of the General Plan. I also utilized GIS software for manipulating and visually presenting information related to the community.

I gained experience with the environmental impact review process which resulted from analyzing and comprehending technical studies and incorporating their information by writing technical sections for environmental documents and I coordinated the implementation of mitigation monitoring and reporting programs. As my experience with the environmental review process grew, my work ethic allowed me to increase my responsibilities as related to more environmentally controversial projects.

EDUCATION

California Polytechnic State University, San Luis Obispo
Bachelor of Sciences, City and Regional Planning

This program provided a hands-on experience which allowed me to execute environmental impact assessments and site analysis, create site designs, research planning law and ordinances, present to several public and private groups, create graphic presentations, and conduct hands-on field research for specific projects located along the California central coast. I gained knowledge of various land use design concepts through hands-on draft work with computers and graphic tools.

DECLARATION OF

Dr.Obed Odoemelam

I, **Obed Odoemelam** declare as follows:

1. I am presently employed by the California Energy Commission in the Facilities Siting, Transmission, and Environmental Protection Division as a Staff Toxicologist.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on **Transmission Line safety and Nuisance** for the Huntington Beach Energy Project based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/19/16 Signed: 

At: Sacramento, California

RESUME

DR. OBED ODOEMELAM

EDUCATION:

- 1979-1981 University of California, Davis, California. Ph.D., Ecotoxicology
- 1976-1978 University of Wisconsin, Eau Claire, Wisconsin. M.S., Biology.
- 1972-1976 University of Wisconsin, Eau Claire, Wisconsin. B.S., Biology

EXPERIENCE:

1989

The Present: California Energy Commission. Staff Toxicologist.

Responsible for the technical oversight of staffs from all Divisions in the Commission as well as outside consultants or University researchers who manage or conduct multi-disciplinary research in support of Commission programs. Research is in the following program areas: Energy conservation-related indoor pollution, power plant-related outdoor pollution, power plant-related waste management, alternative fuels-related health effects, waste water treatment, and the health effects of electromagnetic fields. Serve as scientific adviser to Commissioners and Commission staff on issues related to energy conservation. Serve on statewide advisory panels on issues related to multiple chemical sensitivity, ventilation standards, electromagnetic field regulation, health risk assessment, and outdoor pollution control technology. Testify as an expert witness at Commission hearings and before the California legislature on health issues related to energy development and conservation. Review research proposals and findings for policy implications, interact with federal and state agencies and industry on the establishment of exposure limits for environmental pollutants, and prepare reports for publication.

1985-1989 California Energy Commission.

Responsible for assessing the potential impacts of criteria and noncriteria pollutants and hazardous wastes associated with the construction, operation and decommissioning of specific power plant projects. Testified before the Commission in the power plant certification process, and interacted with federal and state agencies on the establishment of environmental limits for air and water pollutants.

1983-1985 California Department of Food and Agriculture.

Environmental Health Specialist.

Evaluated pesticide registration data regarding the health and environmental effects of agricultural chemicals. Prepared reports for public information in connection with the eradication of specific agricultural pests in California.

DECLARATION OF Jeanine Hinde

I, Jeanine Hinde, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission, and Environmental Protection Division as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Visual Resources for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7/25/2016 Signed: Jeanine Hinde
At: Sacramento, California

JEANINE M. HINDE

Professional Experience

Planner II

February 2010–Present

California Energy Commission, Sacramento, CA

Environmental Office of the Siting, Transmission, and Environmental Protection Division

Generalist skilled in research and analysis and preparing staff assessments for siting of power plant projects filed with the Energy Commission. Assesses environmental impacts on land use, agricultural resources, and visual resources. Prepares alternatives analyses to comply with the California Environmental Quality Act (CEQA). Evaluates project conformance with applicable laws, ordinances, regulations, and standards. Preparing the alternatives analysis on the Puente Power Project, a natural gas-fired (NGF) plant proposed to replace two aging once-through cooled units at the Mandalay Generating Station. Preparing the visual resources analysis for the Huntington Beach Energy Project, an NGF plant proposed to replace the Huntington Beach Generating Station. Prepared the alternatives analysis for an amendment to the previously approved Palen Solar Electric Generating System (SEGS) in the Colorado Desert. Prepared the alternatives analysis on the Hidden Hills SEGS in the Mojave Desert. Participates in public workshops and presents testimony on contested issues at evidentiary hearings before the Energy Commission. Prepared the land use analyses for a geothermal power plant in Imperial County and an NGF plant in Ceres. Coauthored the alternatives analyses on the proposed amendments to the Carlsbad Energy Center and El Segundo Energy Center projects.

Environmental Analyst and Project Coordinator

2004–2009

EDAW-AECOM, Sacramento, CA

Coordinated preparation of environmental studies to satisfy CEQA and the National Environmental Policy Act and related permitting and regulatory requirements. Contributed to the preparation of regulatory compliance documents for projects addressing flood protection, wastewater management, water quality, habitat restoration, and urban development. As an assistant project manager, contributed to the preparation, technical review, and distribution of a variety of environmental compliance documents for projects that included a levee repair project on the Feather and Yuba Rivers, a levee seepage project on the San Joaquin River near the Sacramento-San Joaquin Delta (Delta), a wastewater treatment plant improvement project in Atwater, and a habitat restoration project adjacent to the middle Sacramento River. As an analyst, prepared environmental impact analyses for resource topics that included land use; agricultural resources; visual/aesthetic resources; public services, utilities and service systems; hazardous materials; recreation; and geology, soils, and mineral resources. Prepared mitigation monitoring and reporting program documents and assisted with fulfilling CEQA noticing and filing requirements.

Environmental Analyst, Independent Consultant

2003–2004

Sackheim Consulting, Fair Oaks, CA

Researched and wrote the aesthetics analyses for the CEQA documents on related neighborhood electrical distribution projects in the Natomas and Elkhorn areas of Sacramento. Prepared a similar analysis for a project in Elk Grove. Assisted with the analyses addressing potential impacts on cultural resources and issues related to hazards and hazardous materials.

Environmental Specialist II

1986–1997

Jones & Stokes Associates, Sacramento, CA

Evaluated impacts on land use, visual resources, and recreation for several state and federal projects, including a water supply management program in the East Bay, a project addressing long-term management of resources in the Delta and Suisun Marsh, and a military operations project at Camp Roberts. Provided technical review and coordinated preparation of report sections prepared by staff, and assisted with research and documentation of required federal, state, and local permits and approvals to include in regulatory compliance plans.

Education

B.A. Geography, California State University, Chico

DECLARATION OF
Ellen Townsend-Hough, Associate Mechanical Engineer

I, Ellen Townsend-Hough, declare as follows:

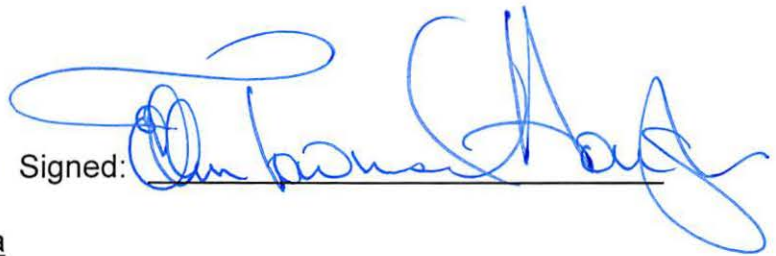
1. I am presently employed by the California Energy Commission in the Engineering Office of the Siting Transmission and Environmental Protection Division as an Associate Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Waste Management for the Huntington Beach Project- Petition To Amend based on my independent analysis of the Huntington Beach Energy Project Amendment and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: _____

July 25, 2016

Signed: _____



At: _____

Sacramento, California

Ellen Townsend-Hough
Associate Mechanical Engineer

SUMMARY

I am a chemical engineer with 32 years of mechanical engineering experience. I have a working knowledge of the California Environmental Quality Act. I have working knowledge of the National Environmental Policy Act. My strengths are in analyzing and performing complex environmental engineering analyses, in areas such as Waste Management, Hazardous Materials Management, and Worker Safety, for electric generating stations. I worked as a policy advisor for a California Energy Commission Commissioner. I am also an US Environmental Protection Agency Environmental Justice trainer.

One of the primary functions of the Energy Commission is CEQA review of license applications to build and operate power plants 50 MW and greater in California. In the Energy Commission's Engineering Office, I fulfill this function by working through and managing a wide variety of CEQA and environmental policy issues. The product of this effort is expressed in expert testimony and staff analysis for siting new power plants and power plant compliance activity. This testimony and analyses cover, waste management. I participate as a technical speaker at public workshops as needed.

I have worked on simple-cycle, combined cycle, cogeneration, geothermal, and large-scale thermal solar power plants, and is familiar with most of the major power plants in construction and operation in California today. I have conducted construction and operation compliance inspections at many of these plants.

I have knowledge of CEQA/NEPA impact analysis and mitigation involving waste management. The assessments I has authored waste management, worker safety, fire protection, hazardous materials and public health.

Power Plant/Utility Experience
California Energy Commission,

A list of power plant siting cases for which I have authored assessments, in whole or in part follows: Abengoa Solar (Solar Thermal), Chevron USA (Natural Gas), CPV Sentinel (Natural Gas), Ivanpah SEGS (Solar Thermal), Carlsbad Energy Center (Natural Gas), Quail Brush (Natural Gas), Pio Pico (Natural Gas), Hidden Hills (Solar Thermal), Genesis (Solar Thermal), Rio Mesa SEGF (Solar Thermal), Huntington Beach Energy Project, Alamitos Energy Project, Puente Power Plant and San Joaquin Solar (Solar Thermal-Biomass).

I also work on power plant construction and operation compliance, some of which are: Abengoa Solar, Colusa, Carlsbad, Canyon, Genesis, Elk Hills, various geothermal power plants, Henrietta, Inland Empire, Ivanpah SEGS, La Paloma, Marsh Landing, Mountain View, TID Almond, SEGS III-VII, SEGS VII & IX, and Sutter.

EDUCATION

Bachelor of Science, Chemical Engineering
Drexel University, Philadelphia Pennsylvania
1981

Continuing Education

Hazardous Material Management Certificate, University California Davis

Urban Redevelopment and Environmental Law, University of California Berkley
Analytical Skills, California Department of Personnel Administration (DPA) Training Center
Legislative Process/Bill Analysis, DPA Training Center
Federally Certified Environmental Justice Trainer
Community Emergency Response Team Certified

PROFESSIONAL EXPERIENCE

Technical Analysis and Presentation

- Performs mechanical engineering analysis of designs for complex mechanical engineering analysis of designs for systems such as combustion chambers and steam boilers, turbine generators, heat transfer systems, air quality abatement systems, cooling water tower systems, pumps and control systems
- Review and process compliance submittals in accordance with the California Environmental Quality Act, the Warren Alquist Act, the Federal Clean Air Act and the California and Federal Occupational Health and Safety Acts to assure compliance of projects
- Provide licensing recommendations and function as an expert witness in regulatory hearings.
- Provide waste management and sustainability analysis on construction, demolition and operation of power plant design.
- Provide public health impact analysis to assess the potential for impacts associated with project related air toxic/non-criteria pollutant emissions.
- Evaluate the potential of public exposure to pollutant emissions during routine operation and during incidents due to accidents or control equipment failure
- Provide an engineering analysis examining the likelihood of compliance with the design criteria for power plants and also examine site specific potential significant adverse environmental impacts

Technical Proficiencies

- Establish mitigation that reduces the potential for human exposure to levels which not result in significant health impact or risk in any segment of the exposed population.
- Conduct environmental audits and inspections of electrical generating stations during construction and operation to assure compliance with Commission decisions.
- Evaluate and prescribe Fire Protection Systems. Technical liaison with local fire departments.
- Review and evaluate the pollution control technology applied to thermal power plants and other industrial energy conversion technologies.
- Operating Systems: MS Windows Server
- Networking: Local Area Network (LAN)
- Software: MS Office (WORD, EXCEL, POWERPOINT)

Policy Advisor

- Provided policy, administrative and technical advice to the Commissioner Robert Pernell. My work with the Commissioner focused on the policy and environmental issues related to the Commission's power plant licensing, research and development and export programs.
- Track and provide research on varied California Energy Commission (CEC) programs. Prepare analysis of economic, environmental and public health impacts of programs, proposals and other Commission business items.
- Represent Commissioner's position in policy arenas and power plant siting discussions.

- Write and review comments articulating commission positions before other regulatory bodies including Air Resources Board, California Public Utilities Commission, and the Coastal Commission.

DECLARATION OF SHAHAB KHOSHMAHRAB

I, SHAHAB KHOSHMAHRAB, declare as follows:

1. I am presently employed by the California Energy Commission in the ENGINEERING OFFICE of the Siting, Transmission, and Environmental Protection Division as a SENIOR MECHANICAL ENGINEER.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Facility Design for the Huntington Beach Energy Project based on my independent analysis of the Amendment and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony, and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/31/16

Signed: 

At: Sacramento, California

Shahab Khoshmashrab, P.E.
Senior Mechanical Engineer

Professional Experience

2001-Current—Senior Mechanical Engineer – Siting, Transmission, and Environmental Protection Division – California Energy Commission

- Perform analysis of, and address complex engineering issues related to, generating capacity, power plant reliability, energy efficiency, noise and vibration, jurisdictional determination, and the mechanical, civil, electrical, and structural aspects of power plants' licensing, construction, and operation.
- Review and evaluate projects to ensure compliance of power plants and related facilities with applicable laws, ordinances, regulations, and standards and California Environmental Quality Act.
- Assist the California Energy Commission in policy making related to electricity generation.

1998-2001—Structural Engineer – Rankin & Rankin

Engineered concrete foundations, structural steel and sheet metal of various building structures including energy related structures such as fuel islands. Performed energy analysis/calculations of such structures and produced both structural plans and detailed shop drawings using AutoCAD.

1995-1998—Manufacturing Engineer – Carpenter Advanced Technologies

Managed manufacturing projects of various mechanical components used in high tech medical and engineering equipment. Wrote and implemented QA/QC procedures and occupational safety procedures. Conducted developmental research of the most advanced manufacturing machines and processes including writing of formal reports. Developed project cost analysis. Developed/improved manufacturing processes.

Education

- California State University, Sacramento-- Bachelor of Science, Mechanical Engineering
- Registered Professional Engineer (Mechanical), California
License No. M 32883, Exp. 9/30/2016

DECLARATION OF LAIPING NG

I, Laiping Ng, declare as follows:

1. I am presently employed by the California Energy Commission in the Transmission Evaluation and Planning Office of the Siting, Transmission, and Environmental Protection Division as an Associate Electrical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Transmission System Engineering, for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7/25/2016 Signed: Laiping Ng

At: Sacramento, California

Laiping Ng
Associate Electrical Engineer

Education:

Master of Science: Electrical Engineering - Power
California State University, Sacramento

Bachelor of Science: Electrical Engineering - Power
California State University, Sacramento

Power Certificate – EPRI

Experience:

April 1999 – Present:

- Review and evaluate electrical transmission system sections of the application to ensure that the transmission engineering aspects of the power plant, switchyards, substations, and the related facilities comply with applicable laws, ordinances, regulations, and standards (LORS).
- Prepare written analysis, which address the issues of the adequacy of proposed projects to meet applicable LORS.
- Perform load flow studies and fault analysis.
- Coordinate with CAISO, WSCC and other regulatory agencies and coordinate with utilities companies in the review and evaluation of the power plant siting process.

May 1991 – April 1999:

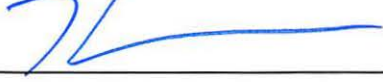
- Prepared engineering bid specifications for recommended lighting and HVAC projects. Evaluated contractor bids and recommended contractors to customers. Reviewed RFPs and RFQs. Evaluated, selected, and managed engineering consultants. Administrated and coordinated contracts.
- Designed electrical systems for indoor and outdoor lighting and lighting controls. Assisted in design cooling systems and controls for school buildings and office buildings. Reviewed and checked electrical lighting designs and drawings. Analyzed designs and made recommendations for effective actions.
- Performed facility energy audits and field surveys on schools, offices, hospitals and county jail facilities to identify energy efficiency improvements and cost estimate with respect to lighting and HVAC systems. Inspected lighting and HVAC system equipment installation.
- Worked in a Nonresidential Energy Efficiency Standards development team. Prepared and updated Standards concentrating on interior building illumination and indoor and outdoor flood lighting.

DECLARATION OF MARK HESTERS

I, Mark Hesters, declare as follows:

1. I am presently employed by the California Energy Commission in the Strategic Transmission Planning and Corridor Designation Office of the Siting, Transmission, and Environmental Protection Division as a Senior Electrical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Transmission System Engineering for the Huntington Beach Energy Project Amendment based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: Aug 11, 2016 Signed: 

At: Sacramento, California

Mark Hesters
Associate Electrical Engineer

Mark Hesters has fourteen years of experience in electric power regulation. He worked in the Engineering Office of the California Energy Commission's Energy Facilities Siting & Environmental Protection Division since 1998 providing analysis of California transmission systems and testimony on transmission systems in several Commission power plant certification processes. Prior to that Mark worked in the CEC's Electricity Analysis Office providing lead analysis on Southern California Edison resource issues and modeling support for all areas of California. He holds a B.S. degree from the University of California at Davis in Environmental Policy Analysis and Planning.

DECLARATION OF Matthew Layton, PE

I, **Matthew Layton**, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection Division as a Supervising Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on Clutches and Synchronous Condensers for the **Huntington Beach Energy Project (12-AFC-02C)** Petition to Amend Final Staff Assessment section on Alternatives based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: Aug 31, 2016

Signed: Matthew J Layton

At: Sacramento, California

MATTHEW S. LAYTON
1516 Ninth Street, MS-40 Sacramento, CA 95814
(916) 654-3868 matthew.layton@energy.ca.gov

Experience Summary

Thirty five years of experience in the electric power generation field, including regulatory compliance and modification; research and development; licensing of nuclear, coal-fired, peaking and combined cycle power plants; and engineering and policy analysis of regulatory issues.

Education

B.S., Applied Mechanics, University of California, San Diego.

Registered Professional Engineer - Mechanical, California.

Experience

2009-present – Supervising Mechanical Engineer, Engineering Office, Siting, Transmission and Environmental Protection Division, California Energy Commission; managing a multidiscipline program providing engineering and public health assessments of complex energy systems.

1987-2009 – Senior Mechanical Engineer, STEP Division, Energy Commission. Review and evaluate power plant proposals, identify issues and resolutions; coordinate with other agencies; and prepare testimony, in the areas of:

- Air quality resources and potential impacts, and mitigation measures;
- Public Health; and
- Transmission Line Safety and Nuisance.

Prepared Energy Commission demonstration project process; contributed to the Energy Technology Status, Energy Development, and Electricity Reports; Project Manager for demonstration projects; evaluated demonstration test plans, procedures, data and reports; disseminated test results; and managed research and development contracts.

1983-1986 – Control Systems Engineer, Bechtel Power Corporation. Part of a multi-disciplined effort to environmentally qualify client's safety related nuclear plant equipment - performed analyses, calculations and reviews against vendor test reports, NRC guidelines and plant normal and postulated accident conditions.

1981-1983 – Engineer, GA Technologies, Inc. Supervised design and procurement of full-scale test assembly used to evaluate design changes to operating reactor graphite core assembly. Conducted experiment to determine the relationship of graphite oxidation rate to water concentration, temperature, and helium pressure. Environmentally qualified essential and safety related nuclear power plant equipment to comply with NRC guidelines.

DECLARATION OF
Eric W. Veerkamp
Planner III, Project Manager-Energy Facility Siting

I, Eric W. Veerkamp, declare as follows:

1. I am presently employed by the California Energy Commission in the Compliance Office of the Siting Transmission and Environmental Protection Division as a Compliance Project Manager (Planner III).
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the Compliance Conditions section for the Huntington Beach Energy Project (HBEP) Amendment based on my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: _____

8/31/2016

Signed: _____



At: _____

Sacramento, California

ERIC W. VEERKAMP
Planner III, Energy Facility Siting

EDUCATION

B.S. Business
Administration (Human
Resources Mgmt.);
Minor in Environmental
Studies

PROF.

AFFILIATIONS

American Institute of
Certified Planners
(AICP) [currently
inactive],
American Planning
Association (APA),
Association of
Professionals (AEP),
Toastmaster
International (past
member)

**COMMUNITY
INVOLVEMENT**

California Academic
Decathlon volunteer,
2009, 2010; St. Robert
School parent volunteer,
Fall Festival Chair
2010-2015, Bill Glass
Behind the Walls prison
ministry teammate
2005-2015, active
BloodSource donor

PLANNER III, PROJECT MANAGER, ENERGY FACILITY SITING

California Energy Commission (June 2011 – Present)

I am currently serving as the Compliance Project Manager on the Palmdale Energy Project major amendment, assisting staff to protect and preserve biological and cultural resources, water and air quality standards, among others, and to increase energy efficiency while minimizing harmful emissions and adverse impacts on the environment. I am also currently providing compliance oversight for Huntington Beach Energy Project construction (currently in the demolition phase). My compliance project management responsibilities also include oversight of operational projects, including Genesis, Sunrise Power, Huntington Beach, and Russell City.

PLANNER II, ENERGY FACILITY SITING

California Energy Commission (September 2010 – June 2011)

In 2011, I drafted the CEQA equivalent Land Use section for the Hydrogen Energy California (HECA) project, and the CEQA equivalent analysis for the Transmission Line Alternatives, supplementing the Traffic and Transportation Section for the Palmdale Project. I was also assigned to write Traffic and Transportation, Visual, Land Use, and Socioeconomic analyses.

INDEPENDENT CONTRACTOR

EData Corporation. (2010)

I drafted CEQA sections for the proposed Jamul Indian Village commercial project (casino) in San Diego County, including Traffic and Transportation Alternatives Analysis, Visual Resources, and Land Use. I reviewed and responded to public agency comments on the National Environmental Policy Act Environmental Impact Statement for the proposed Soboba Tribal gaming facility, San Diego County.

SENIOR ASSOCIATE

Raney Planning & Management, Inc. (2006 – 2010)

Throughout 2006-2010, I worked as an environmental specialist preparing CEQA environmental documents; I served the City of Wheatland as contract planning staff; and I worked as the Housing Element Project Manager (2008-2010) for the Laurin Division of Raney. Clients included the Cities of Calexico, El Centro, Brawley, Colfax, Hollister, and Oroville. Also while working as part of the Laurin team, I performed multi-family residential appraisals, and managed prevailing wage contracts. My accomplishments include preparing an award winning City-wide Visioning document for the City of Wheatland, and a growth management rating system for the City of Hollister.

Preparation Team

HUNTINGTON BEACH ENERGY PROJECT PETITION TO AMEND (12-AFC-02C) FINAL STAFF ASSESSMENT – PART 1 PREPARATION TEAM

Executive Summary	John Heiser, AICP
Introduction	John Heiser, AICP
Project Description.....	John Heiser, AICP

Environmental Assessment

Air Quality	Wenjun Qian, Ph. D., P.E., David Vidaver
Biological Resources	Tim Singer and Heather Blair
Cultural Resources	Melissa Mourkas and Gabriel Roark
Hazardous Materials Management	Brett Fooks, PE and Geoff Lesh, PE
Land Use.....	Steven Kerr
Noise and Vibration.....	Edward Brady
Public Health.....	Huei-An (Ann) Chu, Ph. D.
Socioeconomics.....	Lisa Worrall
Soil and Water Resources	Mike Conway
Traffic and Transportation.....	John Hope and Wenjun Qian, Ph.D., P.E.
Transmission Line Safety and Nuisance.....	Obed Odoemelam
Visual Resources	Jeanine Hinde and Wenjun Qian, Ph.D., P.E.
Waste Management.....	Ellen Townsend-Hough
Worker Safety and Fire Protection.....	Brett Fooks, PE and Geoff Lesh, PE

Engineering Assessment

Facility Design.....	Shahab Khoshmashrab
Geology and Paleontology	Mike Conway
Power Plant Efficiency	Edward Brady
Power Plant Reliability	Edward Brady
Transmission System Engineering	Laiping Ng and Mark Hesters
Alternatives	John Hope, Matthew Layton, and David Vidaver
Compliance Conditions and Compliance Monitoring Plan	Eric Veerkamp
Project Attorney	Kevin Bell
Project Assistant	Marichka Haws