HUNTINGTON BEACH GENERATING STATION RETOOL PROJECT

Application For Certification 00-AFC-13
Orange County

CALIFORNIA
ENERGY
COMMISSION

COMMISSION DECISION

MAY 2001
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Gray Davis, *Governor*

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EXECUTIVE SUMMARY

EMERGENCY CERTIFICATION

APPROVED

WITH CONDITIONS

The Energy Commission approves AES's proposed 450 megawatt Huntington Beach Units 3 & 4 Retool Project in Huntington Beach, California, together with the following highlighted measures to mitigate potential environmental and community impacts:

ELECTRICITY SALES IN CALIFORNIA:

- ✓ In consideration of this expedited certification pursuant to the Governor's Executive Order, AES shall enter into a contract with the Department of Water Resources to sell the generation from the Huntington Beach Units 3 & 4 Retool Project to address California's electricity supply emergency. The Project will be on line approximately 90 days after certification.

10-YEAR EMERGENCY CERTIFICATION:

- ✓ The retooling of a vintage, coastal boiler power plant is warranted since it can immediately respond to California's electricity emergency; thus certification will be effective for a period of ten years. In 2006, the Energy Commission will determine if AES has complied with all Conditions of Certification and implemented measures to mitigate environmental impacts.

AIR QUALITY:

- ✓ The power plant will use state-of-the-art Best Available Control Technology to minimize emissions.
- ✓ Complete offsets will be used to compensate for any pollutant for which the South Coast Air Quality Management District (SCAQMD) requires offsets.
- ✓ To prevent a significant cumulative air quality impact, through December 31, 2002, Units 3 and 4 shall not operate contemporaneously with Unit 5 unless the ISO has declared a Stage 3 Electrical Emergency and the ISO has specifically called-up Unit 5 to avoid an imminent blackout. After December 31, 2002, operation of Huntington Beach Unit 5 shall cease. These requirements may be superseded by SCAQMD's adoption of emission controls by Best Available Retrofit Control Technology or other means applicable to Unit 5.

WATER QUALITY:

- ✓ AES will fund a study of the possible contribution of the power plant project to the occurrence of bacteria in the Huntington Beach surf zone through heated cooling water discharge in the Pacific Ocean. If the power plant project contributes to the impact, AES will provide its proportional share of mitigation.

VISUAL RESOURCES:

- ✓ Structures and fences will be painted in muted colors compatible with the setting.
- ✓ Shields and motion detectors on plant lighting will minimize nighttime glare.
- ✓ Tree planting will screen views of the plant, particularly from the Pacific Coast Highway and nearby residences.

BIOLOGY:

- ✓ For cooling water, AES will continue to use the existing ocean water intake and outfall system that entraps and kills a modest amount of fish and other organisms. By restarting operation of Units 3 & 4, flow rates will be doubled compared to recent years. Rather than rely on an extrapolation of 1970s data from other coastal power plants, AES will conduct a one-year entrainment and impingement study at Huntington Beach to assess current project and potential cumulative impacts. AES will also review best available technology for the intake system that might lessen entrainment and impingement.

NOISE:

- ✓ In order to complete the retooling project in July 2001, AES will implement a 20-hour per day construction schedule. To prevent disturbance to nearby residences, AES proposes to limit “noisy” construction from 7:00 a.m. to 8:00 p.m. daily. Between 8:00 p.m. and 2:00 a.m., activities will be limited to “quiet” construction that will not exceed present nighttime noise levels by a perceptible amount, which is 5 dBA.

CALIFORNIA'S ELECTRICITY EMERGENCY

The AES Huntington Beach Retool Project as recommended for certification is a creature of California's electricity supply emergency, both in its design and regulatory processing. AES proposes to rebuild and upgrade the internal components of two 1950's vintage boilers that were retired from use by SCE in 1995.

AES testified that it purchased the Huntington Beach Generating Station with the intention of replacing the old boilers with state-of-the-art combustion turbine combined cycle units. At some unspecified time and based upon factors to which we are not privy, AES began the process of preparing an Application for Certification to resurrect the idle units. AES's design included the use of air pollution control technology that will allow Units 3 and 4 to burn nearly as cleanly as modern combined cycle units. As a result, AES filed its Application for Certification in December 2000, contemplating a routine, nominal 12-month regulatory review.

In the intervening time, instead of remaining routine and nominal, California's electricity supply situation has become an emergency. By various Executive Orders, Governor Davis has declared an energy supply emergency and directed the Energy Commission to marshal state resources to expedite its regulatory reviews to bring new generation resources on line, with a particular emphasis on generation which could be available for the summer of 2001.

For its part, AES has responded to the electricity supply emergency by offering to retool Huntington Beach Units 3 and 4 in 90 days from the date of licensing. Therefore, to enable AES to fulfill such a pledge and bring Unit 3 and 4 generation on line by mid-July 2001, the Energy Commission has instituted a highly expedited process that could lead to certification by mid-April 2001.

Other energy developers are currently proposing to replace their vintage coastal boiler-type power plants, whether purchased from SCE or PG&E, with new combustion turbine combined cycle units, as AES had originally intended. Duke Energy's Morro Bay Project and Dynergy's El Segundo Redevelopment Project use state-of-the-art emission controls, consume about one-third less natural gas than a boiler unit to produce an equivalent amount of electricity, and return less-heated cooling water to the ocean environment. All of this comes in a low profile, less visually intrusive package than the Huntington Beach proposal by AES.

Such facilities model California's future coastal power plants. Absent responding to the current electricity emergency, the AES project does not present sufficient justification to perpetuate the vintage Huntington Beach power plant on a coastline of world-renowned scenic, recreational, and environmental value.

Consequently, the Energy Commission will certify the retooled facility for 10 years to be available to fully address the electricity supply emergency, since the initial years of this period will likely coincide with the term of the electricity sales contract which AES

testified it is negotiating with the Department of Water Resources (DWR) which is California's agent in securing generation to meet the emergency. In approximately 5 years, AES shall present evidence to the Commission that it is in compliance with all conditions of certification, that it has or is implementing environmental mitigation measures for which it is responsible, and that it is in compliance with any other applicable permits. If the Energy Commission does not find compliance, and AES does not bring the project into compliance in a reasonable time, the Commission may terminate certification or take other action permitted by law. Of particular interest to the Commission is the successful completion of the surf zone bacteria study and the impingement and entrainment study, together with the implementation of appropriate mitigation identified in those studies.

The trade-off for the needed electricity during this emergency is that California, and to some extent Huntington Beach, will have to defer the societal and environmental benefits of AES's expressed intention to modernize the Huntington Beach Generating Station.

The Energy Commission believes that through a DWR contract and Independent System Operator (Cal-ISO) incentives AES will be sufficiently rewarded for its short-term investment in the retooling to respond to the electricity emergency and well-positioned to invest for the long-term in its intended modernization. This is the win-win scenario for California, for AES, and for our fellow citizens in Huntington Beach.

ELECTRICITY SALES IN CALIFORNIA

AES's Application for Certification states, "…this project offers an environmentally friendly means of providing much needed generation in Southern California." (AFC § 1.1) At all times during the proceeding, AES has consistently expressed that the retool project is to aid California during its electricity emergency.

The City of Huntington Beach and California Unions of Reliable Energy (CURE) seek a condition limiting the sale of electricity generated by this project only to California or within California. Further, the City and CURE seek a condition that would require the Energy Commission to monitor electricity sales from other AES's facilities. The reasons for desiring this condition are to assure that the retool project's generation adds to the net energy supply in California and AES does not use this project's output as a means to sell its other facilities' generation out-of-state.

The Committee requested briefs from the parties after the City of Huntington Beach presented a written legal analysis supporting a California sales condition during comments on the Presiding Member's Proposed Decision. A supporting brief was filed by CURE. An opposing brief was submitted by AES. At the Commission hearing to consider the Amended Presiding Member's Proposed Decision, AES expressed acceptance of all Conditions of Certification, including **EMERGENCY-1**, so long as the term of certification was at least ten years.

In consideration of the record on the proceeding and a review of cases and statutes, the Committee believes the following:

- California is in the grip of an electricity supply emergency demanding an immediate and effective response to protect the health and welfare of its citizens;

- California's electricity supply emergency is a unique circumstance, largely unanticipated in the new deregulated electricity world so that all matters are of first impression;

- There is no case directly on point nor any statute or regulation directly addressing this unique circumstance;

- This is a gray area of the law, where there has been a traditional tension between state powers reserved under the Tenth Amendment and the Interstate Commerce Clause, both found in the federal Constitution; and

- California has undertaken a coordinated effort to address the electricity supply emergency by the Energy Commission's expedited permitting of new power plants pursuant to Executive Orders and the Department of Water Resources' (DWR) contracting to secure those new resources (as well as existing resources) to address our electricity supply shortage.

The U. S. Supreme Court cases cited by the parties support the concept that state action as "a trustee or guardian of its citizens" may "affect" interstate commerce, but shall not interfere with federal preemption of the field nor constitute economic protectionism or hoarding of a state's natural resources.

The permitting of thermal power plants has long been a traditional state power, which Congress has left unchanged over many decades. In the face of a declared electricity supply emergency, California has tasked the Energy Commission through various Executive Orders to permit new power plants using extraordinary and expedited processes. DWR has been charged with securing these and other electricity supplies to reduce or eliminate blackouts with all their adverse health and safety impacts upon California's population.

Under such emergency circumstances, applicable law appears to permit California to establish a Condition of Certification requiring new power plants permitted pursuant to extraordinary Executive Order processes to dedicate their generation to addressing our electricity supply emergency, subject to two important limitations. First, required sales to California can last only for the duration of the emergency, which can appropriately be reflected in the term of a contract with DWR. After expiration of the DWR contract, AES may sell to anyone. Second, the Commission acknowledges the authority of the President of the United States, the federal Secretary of Energy, or the Governor of

California to re-direct this project's output to respond to electricity shortages in other states. Moreover, to the extent permitted in the DWR contract, Units 3 and 4's output can be sold to or exchanged with other states.

The purpose of this Condition is not impermissible economic protectionism. First and foremost, this Condition is to secure reliable and sufficient electricity supplies to address a critical electricity supply shortage, expected to have very serious public health, safety, and welfare consequences if not addressed.

This action does not hoard any natural resources used to produce electricity. The common ingredients to electricity production – natural gas, air, and water – will continue to be available for interstate commerce. Any limitation on the availability of a small fraction of these total resources due to this Condition will be temporary, lasting only for the duration of the electricity supply emergency.

An interpretation that this Condition is impermissible per se because it "affects" interstate commerce would deprive the State of ability to effectively respond to this emergency. Taken to its logical conclusion such a position would allow all new power plant licensed under the Executive Orders to sell their entire output to out-of-state consumers, thereby perpetuating California's electricity crisis, not solving it.

Such a result is as legally untenable as it is socially unacceptable. The Federal Energy Regulatory Commission has repeatedly told California that it must solve its own electricity crisis. Other than aggressive conservation that California is also pursuing, securing new "emergency" electricity supplies to actually reduce California's supply shortage is the least disruptive means of addressing this emergency. However, conservation will not cover the supply deficit. There is no plausible supply alternative to solve the shortage, particularly given supply constraints in neighboring states.

Given competing interpretations of the application of the Interstate Commerce Clause, the Commission adopts the supportable conclusion that helps solve California's electricity supply emergency, rather than a conclusion that might exacerbate it.

Any electron put on the grid benefits California, even if it is contractually committed out of state. This fact does not, however, translate into electricity resources contractually available to California users. The Governor's charge to DWR to secure reliable and sufficient electricity supplies under contract to California confirms that random electrons on the grid, while beneficial to the grid, are not sufficient to solve this crisis.

Some have suggested that a California sales condition is a snub to our neighboring states in the West who provided electricity to us this winter. We are grateful for the contributions of our neighboring states, who themselves are faced with electricity supply issues. By moving to solve its own electricity supply emergency, California is helping other states.

With regard to the request of the City of Huntington Beach and CURE for monitoring of other AES electricity sales, the Energy Commission believes that under current circumstances significant and sufficient federal and State resources are being brought to bear on investigating abuses of market power and manipulation so that an added condition is not necessary.

DURATION OF CERTIFICATION

Energy Commission Staff recommended in its Staff Assessment (p. 339) that certification of the retool project be limited to 5 years. Specifically, Staff's proposed condition was a limitation to either the duration of an electricity sales contract with DWR or September 30, 2006, whichever came first. Staff contends that the limited duration is necessary to review the license for compliance with Conditions of Certification and assess the results of the studies and monitoring plans which are required to more fully assess potential environmental impacts and consider whether the license should be granted permanent status. (SA p. 4)

The City of Huntington Beach and CURE support such a condition. The California Coastal Commission also supports a limitation on the duration of certification. These parties argue that the Commission is proposing to license the retooling project with too little environmental information now and too much reliance on future studies of environmental effects and mitigation formulated therefrom. Most particularly, this concern relates to potential project effects related to the thermal discharge contribute to surf zone bacteria leading to public beach closures. Additionally, they are concerned about entrainment of aquatic organisms in the cooling water intake. All of these matters are the subject of either ongoing or future studies.

AES opposes a limitation on certification contending that there is no authority to limit power plant certifications and that a limitation amounts to an illegal revocation of certification. AES also asserts that an expiration of certification ignores the Commission's mandate to ensure sufficient and reliable electricity supplies. AES argues that the economic life of a power plant should determine its time in service, not an artificial or imposed limit.

Absent the emergency, the retool project would not approach the model of the preferable combustion turbine combined cycle projects, such as are represented by the Morro Bay and El Segundo projects. So the Energy Commission is between a rock and a hard place. The retooling of Units 3 and 4 are vital to addressing California's short-term electricity. Yet, for the long-term, modernization of California's coastal power plants is clearly in the best public interest. These newer facilities consume less natural gas. Effectively, continuing to use natural gas in a boiler plant wastes a critical natural resource. Combined cycle facilities utilize more of the heat from combusted natural gas and consequently return less wasted heat to the ocean environment than do vintage power plants. Heated cooling water perturbs the ocean habitat; and less heated water

perturbs it less. The package of combustion turbine and its exhaust stack are visually much more compact than that of the vintage boiler units.

In addition, the Commission notes that the fast track process which would enable AES to construct the retooling project in time to contribute to the summer 2001 electricity supplies has meant that potential environmental effects had to be comprehended at a level which assured that no significant, unmitigable adverse effects were apparent. However, the Decision contains Conditions of Certification, which require the further study of those potential effects to fully assess their extent and formulate mitigation in the future. Our preference might be to take more time to do more studies before certification, but doing so eliminates any possibility that the retool project can be used to address a very real emergency. However, the Energy Commission feels confident that in the short span of the emergency there will be no significant adverse environmental effects of sufficient consequence that would justify not allowing this project to address the electricity emergency.

For all these reasons, the Energy Commission has granted certification for ten years. In approximately 5 years, AES shall present evidence to the Commission that it is in compliance with all conditions of certification, that it has or is implementing environmental mitigation measures for which it is responsible, and that it is in compliance with any other applicable permits. If the Energy Commission does not find compliance, and AES does not bring the project into compliance in a reasonable time, the Commission may terminate certification or take other action permitted by law.

Regarding the future of the Huntington Beach Generating Station, the City of Huntington Beach has requested a condition that AES produce a Master Development Plan during the pendency of this certification. The Commission believes that such a Plan is needed in light of the foregoing discussion.

CONDITIONS OF CERTIFICATION

EMERGENCY-1: In consideration of this expedited certification pursuant to the Governor's Executive Order and before commencing commercial operation of the project, AES shall enter into an electricity sales contract with DWR to sell the generation from Huntington Beach Units 3 and 4 to address the electricity supply emergency.

EMERGENCY-2: This certification is granted by the Energy Commission for a period of ten (10) years. An interim review shall be conducted as follows. No sooner than January 1, 2006 and no later than April 1, 2006, the project owner shall present evidence to the Commission supporting the following Commission findings:

- the project owner has substantially complied with the conditions of certification;
- the project owner has implemented or is implementing to the extent feasible the mitigation measures it is responsible for implementing as a result of studies required by the conditions of certification; and

- all currently required permits (i.e., NPDES) are in force and the project owner is in substantial compliance with each permit.

If the Commission determines that it cannot make all the above findings, and if the project owner fails, within a period of 60 days from such determination or such other period as the Commission shall determine to be reasonable under the circumstances, to bring the project into compliance, the Commission may terminate certification or take any other action permitted by law.

EMERGENCY-3: On or before June 30, 2004, AES shall submit to the Commission and the City of Huntington Beach a Master Development Plan setting forth its plans for the long-term use of the Huntington Beach Generating Station site beyond September 30, 2006, including but not limited to its plans for the operation, repowering, reconfiguration, closure, decommissioning, moth-balling, demolition, or dismantling of any operating unit then in place.

PROJECT DESCRIPTION

AES Huntington Beach, Limited Liability Company (referred to as either "AES," or the "applicant") is proposing to retool and operate Units 3 and 4, which currently exist, but are out of service at the Huntington Beach Generating Station. Southern California Edison (SCE) took these units out of service in 1995 when it owned the Generating Station. AES' retool project would restore these units to service.

PROJECT OBJECTIVES: (per Project Owner)

The applicant's objectives include: provide increased electrical generation while taking advantage of the existing infrastructure at the existing Huntington Beach facility, including the gas supply, transmission facilities, water supply and discharge facilities; minimize the environmental and socioeconomic impacts of the project; and utilize proven technology while incorporating high-efficiency pollution control technology.

PROJECT LOCATION:

The site for the proposed project is located in the City of Huntington Beach, at 21730 Newland Avenue, southeast of its intersection with Pacific Coast Highway. See **Project Description Figure 1, Regional Location**. The site plan for the existing plant and location of the retooling project are shown in **Project Description Figure 2**.

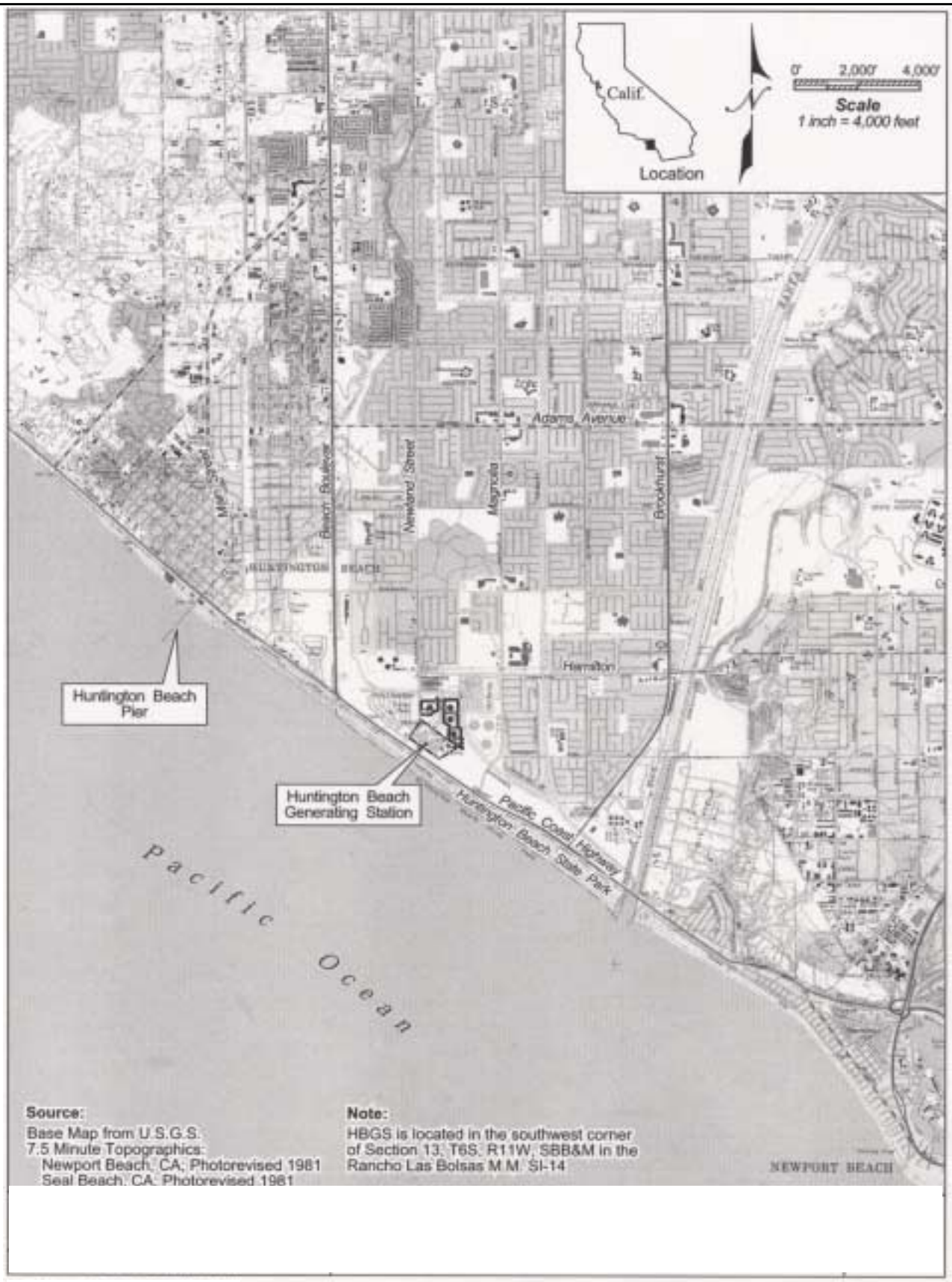
POWER PLANT:

The AES Huntington Beach Retool Project would retool and place in operation Units 3 and 4 at the existing Huntington Beach Generating Station, which was previously owned by SCE. SCE had retired Units 3 and 4 in 1995 because of limited use. Permits to operate Units 3 and 4 issued by the South Coast Air Quality Management District were subsequently surrendered. AES acquired the site in 1998 and has operated only Units 1, 2, and 5 for the last several years.

The existing facility contains two steam turbine generating units, Units 1 and 2, each of which generate 215-megawatts (MW). Unit 5, a 133 MW combustion turbine unit, is used primarily to serve peaking loads. Units 3 and 4 would each be rated at 225 MW. Total generating capacity at the plant, if Units 3 and 4 were approved, would be 1,103 MW.

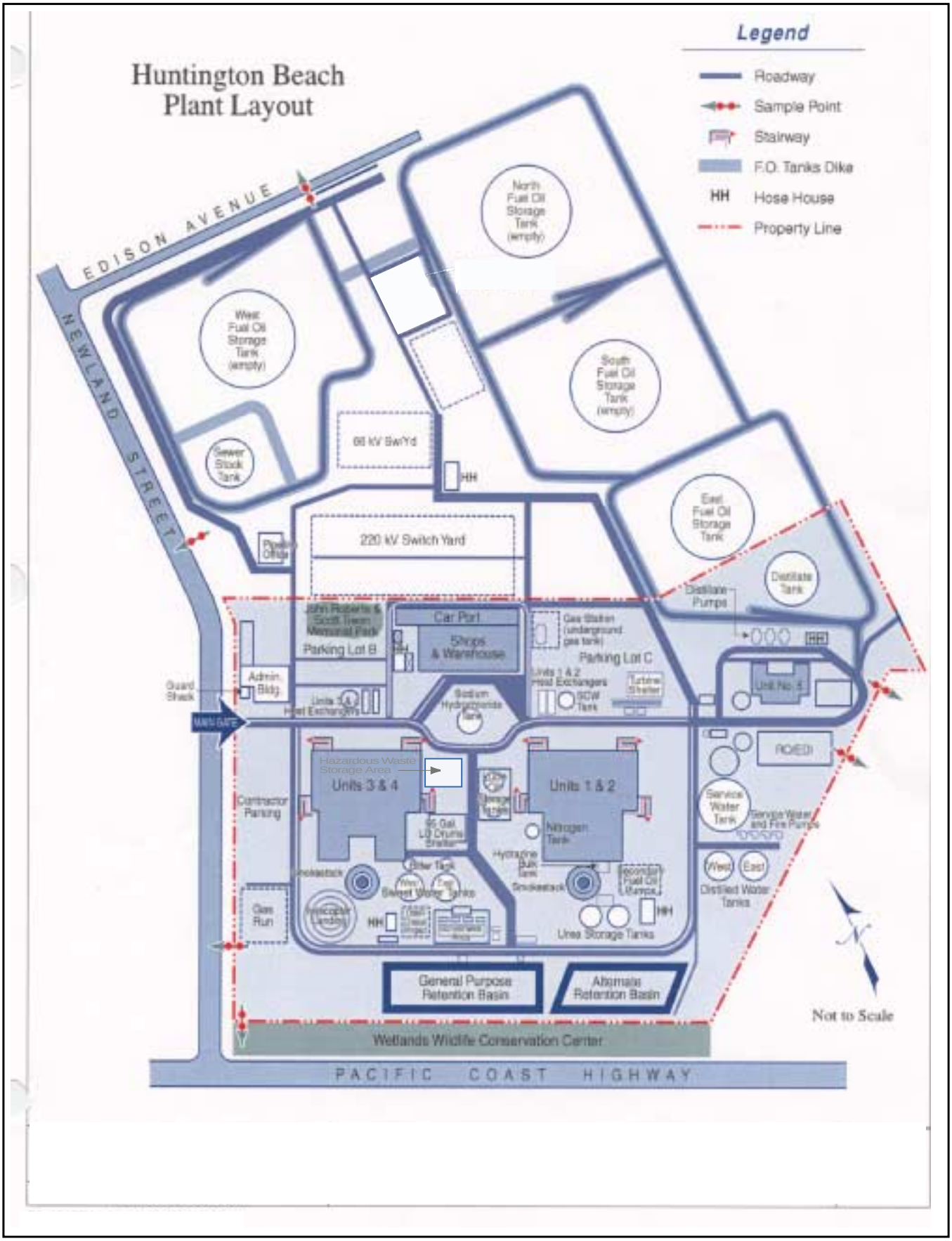
Units 3 and 4 are located on approximately 12 acres in the north-central portion of the existing 53-acre site. The plant is surrounded by industrial and commercial uses to the northeast and east, residential uses to the northwest, wetlands to the southeast, and the Pacific Coast Highway and beaches to the west and southwest.

PROJECT DESCRIPTION - Figure 1
Huntington Beach Generating Station Retool Project - Project Components



CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2001
SOURCE: Map 3.2 -1

PROJECT DESCRIPTION - Figure 2
Huntington Beach Generating Station Retool Project - Site Layout



CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2001
SOURCE: Figure 3.2 -1

The retooling project would occur entirely within the boundaries of the existing plant property. No off-site construction would be involved. The existing natural gas and electrical transmission facilities would be utilized, as well as existing facilities for potable water and wastewater. The existing facility has intake and outfall facilities in the Pacific Ocean, which would be utilized as part of the operations.

Modifications made to the steam generators as part of the retooling project would include replacement of combination fuel oil and natural gas burners with new burners that use only natural gas; new gas burner cameras (to monitor the flame characteristics), soot blowers, burner management control system and larger forced draft fans; new inlet air filtration and natural gas fuel system; and a new fire protection system.

The project would install selective catalytic reduction (SCR) emission control technology on Units 3 and 4. The SCR would use a urea-to-ammonia system, which would eliminate the need to store aqueous ammonia onsite.

The existing power plant facility has two self-supporting steel stacks, each 214-feet tall. Each stack serves two generating units: one serving Units 1 and 2, the other Units 3 and 4. Each stack includes associated appurtenances.

Existing buildings at the site include the administration building, control building, Reverse Osmosis/Electro De-ionization (RO/EDI) building, as well as a warehouse and shop building. No new buildings would be constructed as part of the project, nor would any buildings be demolished or significantly modified.

AES and Poseidon Company have filed for a Conditional Use Permit with the City of Huntington Beach to construct and operate a water desalination plant on a portion of the 53-acre AES site. The City is conducting an environmental impact analysis that will probably require 9 to 12 months to complete. No definitive time frame for the development of the desalination plant has been indicated. The possible development of a desalination plant would not have an effect on the land use considerations relevant to the proposed project. Any land use impacts generated by the desalination facility would be identified and evaluated in the City's environmental analysis.

TRANSMISSION LINES AND NATURAL GAS FACILITIES

No additional electrical transmission lines would be needed as a result of the retooling of Units 3 and 4. The existing transmission lines and adjacent switchyard would be used.

An existing 30-inch diameter natural gas transmission line supplies natural gas from Southern California Gas Company. No additional pipeline capacity is required, and no changes would be made in the pipeline as part of the project.

WATER SUPPLY AND WASTEWATER TREATMENT

The facility is served by an existing water line, with water supplied by the City of Huntington Beach. The project would make no change to the existing water connection.

Sanitary sewage flows by gravity to a sewage ejector station located northwest of the warehouse. The sewage system is of adequate size to accommodate the operation of Units 3 and 4.

CONSTUCTION & OPERATIONS

No site grading or earthwork would be required for the project. Construction would occur entirely within the boundaries of the AES site, and all construction laydown areas would be located within the site boundaries.

On-site construction and equipment re-tooling needed for the project would require approximately three months, on a 20-hour per day, seven days per week schedule. At peak employment, the retooling project would employ approximately 530 craft and professional personnel on the site. The applicant anticipates that parking during construction would be located either within the site boundary or at a leased off-site parking facilities with shuttle service to the project site.

The project is estimated to have a capital cost of approximately $130 million.

At project completion, the applicant expects to employ a staff of approximately 43 full-time, on-site employees. Current employment at the project site is 33 full-time employees.

AIR QUALITY

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Construction Equipment	**MITIGATION**	**None**	**None**	**Yes**
	Construction: Large construction equipment potentially contribute to existing violations of state 24-hour and annual PM10 standards. To minimize NO2 and SO2 emissions (as precursors to PM10) and PM10 emissions, AES shall require its construction contractors to minimize emissions from diesel powered earthmoving equipment. **MITIGATION:** AES shall require construction contractors to tune engines on all heavy earthmoving equipment; use high pressure fuel injection, or timing retardation on non-injected equipment, or meet EPA off-road equipment emission standards. Condition **AQ-C3**. Additionally, AES shall require contractors to use ultra low-sulfur fuel. Condition **AQ-C2**. AES shall use electrical power for all stationary construction equipment power needs. Diesel power will only be used when power outages occur on-site. Condition: **AQ-C4.** *Reference: SA pp. 27; 53; 57; 58.*			
Construction Dust	**MITIGATION**	**None**	**None**	**Yes**
	Grading and excavation activities potentially produce dust that can be transported off-site by wind. To control airborne fugitive dust, AES shall water or apply chemical dust suppressants to disturbed areas, apply gravel or paving to traffic areas, and wash wheels of vehicles or large trucks leaving the site. . **MITIGATION:** AES shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Condition: **AQ-C1.** *References: SA pp. 53; 56; 57.*			

Federal & California Air Quality Standards				
Á **Ozone (O3)**	**MITIGATION**	**None**	**None**	**Yes**
	The power plant location is designated extreme non-attainment for ozone, which is formed by chemical reactions between nitrogen oxides and volatile organic compounds in sunlight. Power plant emissions of NOx and VOC as ozone precursors will be minimized by a flue gas recirculation (FGR) system on each boiler, low-NOx burners and Selective Catalytic Reduction (SCR) in the flue gas duct work. Since minimum emissions would contribute to a violation of the ozone standards, AES shall obtain NOx and VOC offsets. **MITIGATION:** AES shall control NOx (as NO2) by using a combination of FGR, low-NOx burners and SCR to meet BACT emission limitations of 5 ppm averaged hourly and corrected to 3% oxygen. PDOC Condition **57-1, 195-2**. AES shall install a continuous emissions monitoring system for NOx and report emissions. PDOC Conditions: **82-1, 305-3, 305-4**. AES shall monitor and report ammonia use in the SCR and ammonia emissions. PDOC Conditions: **12-6, 28-2, 28-3, 40-1, 195-4**. AES shall obtain NOx offsets. PDOC Condition: **296-1**. *References: SA pp. 37, 38, 53, 54. PDOC pp. 5-12, 27-34.*			

Á **Nitrogen Dioxide (NO2; also generically known as NOx)**	**MITIGATION**	**None**	**MITIGATION**	**Yes**

The power plant location is designated attainment for NO2. NO2 is formed in the combustion process. Power plant NOx emissions will be minimized by FGR, low-NOx burners and Selective Catalytic Reduction (SCR) in the flue gas duct work.

MITIGATION: Minimum emissions would not cause a violation of NO2 standards; however, NOx offsets are required as precursors to ozone. PDOC Condition: **296-1**. For NO2, the emission rate is limited to 5 ppm averaged hourly and corrected to 3% oxygen. PDOC Condition **57-1, 195-2**. NO2 will be continuously monitored in the stack. PDOC Conditions: **82-1, 305-3, 305-4**.

Cumulative Impacts: Huntington Beach Unit 5 is an old technology combustion turbine peaking unit composed of 8 simple cycle turbines, two exhaust turbines, and one 133 MW generator. Currently, there are no emission controls on Unit 5. The NOx emissions from Unit 5 can cause a violation of California's 1-hour NOx standards. The emissions from Huntington Beach Units 1 & 2 have been significantly reduced by SCR. Consequently, the NOx emissions from the Retool Project, when combined with Unit 5 NOx emissions, cause a significant cumulative air quality impact.

MITIGATION: Through December 31, 2002, Units 3 and 4 shall not operate contemporaneously with Unit 5 unless the ISO has declared a Stage 3 Electrical Emergency and the ISO has specifically called-up Unit 5 to avoid an imminent blackout. After December 31, 2002, operation of Huntington Beach Unit 5 shall cease. These requirements may be superseded by SCAQMD's adoption of emission controls by Best Available Retrofit Control Technology or other means applicable to Unit 5. Condition: **AQ-4**

References: SA pp. 37, 38, 49, 53, 54. PDOC pp. 5-12, 27-34

Á **Carbon Monoxide (CO)**	**MITIGATION**	**None**	**None**	**Yes**
	The power plant location is designated seriously non- attainment for federal CO, but attainment for California CO. CO is formed in the combustion process. Power plant CO emissions will be minimized by the installation of an oxidizing catalyst in the HSRG that will reduce CO emissions to 5.0 ppm average hourly and corrected to 3% oxygen. CO will be continuously monitored in the stack. AES shall obtain CO offsets per SCAQMD rule requirements. **MITIGATION:** AES shall control CO by using an oxidizing catalyst to meet BACT emission limitations of 5 ppm averaged over one hour. PDOC Conditions: **57-1**, **195-3**. AES shall install a continuous emissions monitoring system for CO and report emissions. Conditions: **28-1, 28-2, 40-1, 82-2**. AES has obtained CO offsets. *References: SA pp. 37, 53, 54. PDOC pp. 1-10,14, 26-34.*			
Á **Particulate Matter 10 Microns (PM 10)**	**MITIGATION**	**None**	**None**	**Yes**
	The power plant location is designated non-attainment for PM10. Primary PM10 is formed by the combustion gases in the exhaust stack. Secondary PM10 is formed downstream by mixed gases in the atmosphere. Since minimum emissions would contribute to a violation of the PM10 standards, AES shall obtain PM10 offsets from the Priority Reserve allowed in SCAQMD Rule 1309.1. The rule is being amended to allow electrical generating facilities like the proposed project to use PM10 credits from the Priority Reserve. Credits will be available after final SCAQMD Governing Board approval on April 20, 2001. Emission offsets for NOx and SO2 (RTC) and VOC (ERC) will mitigate secondary PM10 impacts. **MITIGATION:** AES shall control PM10 to meet an emission limitation of 0.82 lbs/mmscf. PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1, 372-1**. AES shall obtain PM10 offsets for PM10 mitigation. *References:. SA pp.38, 54 PDOC pp. 1-10, 26, 29, 30, 33*			
Á **Sulfur Dioxide (SO2)**	**MITIGATION**	**None**	**None**	**Yes**
	The power plant location is designated attainment for SO2. Power plant SO2 emissions will be minimized by the exclusive use of natural gas is which very low in sulfur. **MITIGATION**: AES shall control SOx (as SO2) to meet an emission limitation 0.63 lbs/mmscf. Conditions: **AQ-2,** PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1**. AES shall obtain SOx offsets. Condition: **296-1**. *References: SA pp. 38; 53. PDOC pp. 12, 13, 27,*			

Á **Volatile Organic Compounds (VOC)**	**MITIGATION**	**None**	**None**	**Yes**
	There are no state or federal standards for VOC, per se. VOCs are a precursor for ozone. (See ozone, above) Consequently, limiting VOC emissions and the use of VOC offsets are part of the strategy for ozone attainment. VOCs are formed in the combustion process. BACT for VOC emissions will be achieved by the use of appropriate fuel to air ratio resulting in low VOC emissions of 5 ppm corrected to 3% oxygen. **MITIGATION:** AES shall control VOC to meet an emission limitation of 0.93 lbs/mmscf. PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1**. AES shall obtain VOC offsets for ozone attainment. *References: PDOC pp. 16, 29, 30, 31*			
Commissioning & Startup	**Insignificant**	**None**	**None**	**Yes**
	The initial commissioning of a power plant refers to the time frame between completion of construction and the consistent production of electricity for sale on the market. Normal operating emission limits usually do not apply during initial commissioning procedures. The boilers will go through several layers of test during initial commissioning. Commissioning is a one-time event, subject to controls to minimize emissions. AES will limit the number of burners in operation during initial commissioning so that the emissions would be only slightly higher than a normal start-up. Therefore, there are no significant air quality impacts from facility commissioning. AES will insure that emissions are minimized during initial commissioning. Condition **AQ-6**. Maximum cold start-up will last for 11 hours. Start-up will result in emissions of NOx and CO that are higher than normal operating emission limits, however no violations of ambient air standards will occur. The number of startup events and their duration is limited by SCAQMD permit limits. PDOC Conditions **1-5, 99-1, 99-2**. Thus, there is no significant air quality impact from facility startup. *Reference: SA pp. 43, 60. PDOC pp. 27, 32.*			
Visibility	**Insignificant**	**None**	**None**	**Yes**
	A visibility analysis of the project's gaseous emissions is required under the Federal Prevention of Significant Deterioration (PSD) permitting program. The analysis addresses the contributions of gaseous emissions (primarily NOx) and particulate (PM10) emissions to visibility impairment on the nearest Class 1 PSD areas, which are national parks and national wildlife refuges. AES used the EPA approved model VISCREEN to assess the project's visibility impacts, which indicated that the project's visibility impacts would be below the significance criteria for contrast and perception. The National Forest Service recommended the use of the CALPUFF model and found that visibility impacts will not substantially affect Class I areas. *Reference: SA pp. 52. PDOC pp. 20-22.*			

AIR QUALITY – GENERAL

This analysis evaluates the expected air quality impacts of the emissions of criteria air pollutants due to the planned construction and operation of the AES Huntington Beach Power Plant. Criteria air pollutants are defined as those for which a state or federal ambient air quality standard has been established to protect public health. They include nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O3), volatile organic compounds (VOC) and particulate matter less than 10 microns in diameter (PM_{10}).

In carrying out this analysis, the California Energy Commission evaluated the following major points:

- whether the Huntington Beach Units 3 & 4 Retool Project conforms with applicable Federal, State and South Coast Air Quality Management District (SCAQMD) air quality laws, ordinances, regulations and standards;
- whether the Huntington Beach Units 3 & 4 Retool Project will cause significant air quality impacts, including a new violation of ambient air quality standards or contribution to existing violations of those standards; and
- whether the mitigation proposed for the Huntington Beach Units 3 & 4 Retool Project is adequate to lessen the potential impacts to a level of insignificance.

Construction Equipment/Fugitive Dust

The power plant itself will take approximately 3 months to construct. The power plant construction requires the use of large construction equipment, which generate considerable combustion emissions themselves, along with creating fugitive dust emissions during demolition, grading, site preparation, foundations and building erection.

CEC Staff performed air dispersion modeling analyses of the potential construction impacts at the project site. The analyses included fugitive dust generated from the construction activity and combustion emissions from the equipment. The emissions used in the analysis were the highest emissions of a particular pollutant during a one-month period. The results of this modeling effort show that the construction activities would further exacerbate existing violations of the state 24-hour and annual average PM10 standards. The project's construction impacts are not occasional or isolated events, but are over an area near the project site.

Since the general public live and work in the vicinity of the project site, the construction of The HUNTINGTON BEACH UNITS 3 & 4 RETOOL PROJECT may result in unavoidable short-term impacts that may expose the general public to adverse air quality conditions. Thus, construction of the project could have a significant and unavoidable impact on the PM10 ambient air quality standards, and should be avoided or mitigated, to the extent feasible.

In consideration of the modeling results suggesting reductions in PM_{10} and PM_{10} precursors (NOx and SO2) are needed to avoid a significant impact, Commission staff proposed the following additional mitigation measures which AES has accepted:

- Identify and implement specific measures in a fugitive dust mitigation plan.
- Ensure that all off-road diesel engines use 15 ppm sulfur content diesel fuel.

- Ensure that all diesel power construction equipment use EPA certified 1996 low NOx emission engines.
- Use only electricity for construction power needs and only in the event of a power outage would internal combustion power equipment be used to supply necessary power.

With the implementation of these additional mitigation measures, the construction air quality impacts will be mitigated to the extent feasible and, when combined with the temporary nature of this construction, will be insignificant.

MITIGATION: AES shall require all heavy earthmoving equipment to comply with EPA 1996 diesel engine emission standards. Condition **AQ-C3**. Additionally, AES shall require contractors to use ultra low-sulfur fuel. Condition **AQ-C2**. AES shall use electrical power for all stationary construction equipment power needs. Diesel power will only be used when power outages occur on-site. Condition: **AQ-C4.** AES shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Condition: **AQ-C1.**

Ozone

Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants. Nitrogen oxides (NOx) and hydrocarbons (Volatile Organic Compounds [VOC]) interact in the presence of sunlight to form ozone. The SCAQMD is designated extreme non-attainment for ozone, meaning that the South Coast air basin ambient ozone concentration is 0.280 ppm or above, and it will take longer than 17 years (from 1990) to reach attainment. Attaining the federal ozone ambient air quality standard is typically planned for by controlling the ozone precursors NO_2 and VOC. The 1997 Ozone State Implementation Plan for the South Coast Air Basin (SCAQMD 1999) relies on the California Air Resource Board (CARB) to control mobile sources, the US Environmental Protection Agency (US EPA) to control emission sources under federal jurisdiction, and SCAQMD to control local industrial sources (essentially through RECLAIM). Through these control measures, California and SCAQMD are required to reach attainment of the federal ozone ambient air quality standard by 2010. New EPA 8-hour ozone standards are not in effect due to litigation.

Exceedences of the national (and state) ozone ambient air quality standards are centered in the Orange County area. Although there is a significant number of exceedences of the ozone ambient air quality standards, it is important to consider the improvements that have occurred in recent years. SCAQMD leads the nation in air quality management methods and regulatory programs. These programs have significantly improved the air quality in spite of the growing population and industrial and commercial enterprises.

Ozone reduction requires reducing NOx and VOC emissions. To reduce NOx emissions, AES proposes to use low NOx burners in the boilers, use Flue Gas Recirculation of exhaust gases back into the furnace, and a post-combustion Selective Catalytic Reduction (SCR) system with an ammonia injection grid. To reduce VOC (and CO) emissions, AES proposes to use a combination of good combustion and maintenance practices, along with an oxidizing catalyst.

Low-NOx Burners

To minimize NOx formation during combustion, AES will use a low-NOx burner design, identified in the PDOC as Todd Dynaswirl 750 LN, each rated at 87 MMBtu/hr, 24 burners per boiler.

Selective Catalytic Reduction (SCR)

To further reduce the emissions before they are exhausted into the atmosphere, flue gas controls, primarily catalyst systems, will be installed. Selective catalytic reduction refers to a process that chemically reduces NOx by injecting ammonia into the flue gas stream over a catalyst in the presence of oxygen. The process is termed "selective" because the ammonia reducing agent preferentially reacts with NOx rather than oxygen, producing inert nitrogen and water vapor. The performance and effectiveness of SCR systems are dependent upon remaining in a range of operating temperatures, which may vary with catalyst designs. Flue gas temperatures through the catalyst system will be approximately 730°F. (PDOC, p. 6)

Catalysts generally operate between 600 to 750°F (ARB 1992), and are normally placed inside the boiler duct work where the flue gas temperature has cooled. At temperatures lower than 600°F, the ammonia reaction rate may start to decline, resulting in increasing ammonia emissions, called ammonia slip. At temperatures above about 800°F, damage to some catalysts can occur depending on the type of material used in the catalyst. The catalyst material most commonly used is titanium dioxide, but materials such as vanadium pentoxide, zeolite, or a noble metal are also used. These newer catalysts (versus the older alumina-based catalysts) are resistant to fuel sulfur fouling at temperatures below 770°F (EPRI 1990). Regardless of the type of catalyst used, efficient conversion of NO_x to nitrogen and water vapor requires uniform mixing of ammonia into the exhaust gas stream. Also, the catalyst surface has to be large enough to ensure sufficient time for the reaction to take place. Moreover, the maintenance and periodic replacement of the catalyst are necessary to avoid significant ammonia emissions due to ammonia slip.

AES is proposing to use low-NOx burners, flue gas recirculation and SCR with ammonia injection to control NOx emission levels to 5 ppm on a 1-hour average corrected to 3% oxygen. The concentration of the NOx emissions will be continuously monitored in the stack.

Even with the power plant using BACT, the NOx and VOC emissions will contribute to ongoing exceedences of the ozone standards. Thus, AES must mitigate these new emissions by obtaining offsets. Conceptually, offsets result from the closure or controlling of permitted pollution sources. For this power plant to be permitted, other businesses in the air basin either stop operating or additional pollution controls are put in place to reduce emissions. In the SCAQMD, offsets are either Emission Reduction Credits (ERC) or RECLAIM trading credits (RTC). ERCs and RTCs must be purchases from a "bank" of inventoried credits within the air basin listed by SCAQMD. ERCs must be purchased prior to licensing and last for the lifetime of the project. RTCs last for one year and must be purchased annually. Critics of the offset concept point out that an offset won't mitigate a project impact unless the offset source and the project are in close proximity. However, on a planning and programmatic level, the use of offsets that treat the air basin as a "bubble" has lead to improved, overall air quality. This is particularly applicable for ozone.

MITIGATION: AES shall control NOx (as NO2) by using a combination of FGR, low-NOx burners and SCR to meet BACT emission limitations of 5 ppm averaged hourly and corrected to 3% oxygen. PDOC Condition **57-1, 195-2**. AES shall install a continuous emissions monitoring system for NOx and report emissions. PDOC Conditions: **82-1, 305-3, 305-4**. AES shall monitor and report ammonia use in the SCR and ammonia emissions. PDOC Conditions: **12-6, 28-2, 28-3, 40-1, 195-4**. AES shall obtain NOx offsets. PDOC Condition: **296-1**.

Nitrogen Dioxide

Nitrogen dioxide (NO2) can be emitted directly as a result of combustion or formed from nitric oxide (NO) and oxygen. NO is typically emitted from combustion sources and readily reacts with oxygen or ozone to form NO2. The NO reaction with ozone can occur within minutes and is typically referred to as ozone scavenging. By contrast, the NO reaction with oxygen is on the order of hours under the proper conditions. The South Coast Air Basin is designated attainment for both the state and federal NO2 ambient air quality standards.

As discussed above for ozone, AES proposes to reduce NOx emissions by using low NOx burners in the boiler and a post-combustion Selective Catalytic Reduction system with an ammonia injection grid. Even with BACT, AES must obtain NOx offsets to avoid significant ozone impacts. No significant impact from NO2, itself, is expected.

Carbon Monoxide

Carbon monoxide (CO) is a directly emitted air pollutant as a result of combustion. The South Coast Air Quality Management District is designated Serious Non-Attainment for the federal 1-hour and 8-hour CO ambient air quality standards. This means that the area has an average CO concentration value of 16.5 ppm or above. However, the exceedences of the federal CO standard occur in Los Angeles County, which is a considerable distance from the project site. SCAQMD is designated attainment for the state 1-hour and 8-hour ambient air quality standards.

Oxidizing Catalyst

To reduce carbon monoxide (CO) emissions, AES proposes to install an oxidizing catalyst, which is similar in concept to catalytic converters used in automobiles. The catalyst is usually coated with a noble metal, such as platinum, which will oxidize unburned hydrocarbons and CO to water vapor and carbon dioxide (CO2). The CO catalyst is proposed to limit the CO concentrations exiting the stack to 5 ppm, corrected to 3 percent excess oxygen and averaged over 1-hour. CO emissions from the stack will be continuously monitored.

With the power plant using BACT, the CO emissions will contribute 446 pounds per day of CO to ongoing exceedences of the federal CO standards. (PDOC p. 9) Thus, AES must mitigate these new emissions by obtaining offsets for CO. AES has obtained 536 pounds per day of ERCs for CO, which will reduce potential impacts to insignificance due to the excess of offsets. (PDOC pp. 10; 14)

MITIGATION: AES shall control CO by using an oxidizing catalyst to meet BACT emission limitations of 5 ppm averaged over one hour. PDOC Conditions: **57-1**, **195-3**. AES shall install a continuous emissions monitoring system for CO and report emissions. Conditions: **28-1, 28-2, 40-1, 82-2**. AES has obtained CO offsets.

Particulate Matter – PM10

PM10 is a particulate that is 10 microns in diameter or smaller that is suspended in air. PM10 can be directly emitted from a combustion source (primary PM10 or PM2.5) or soil disturbance (fugitive dust) or it can form downwind (secondary PM10) from some of the constituents of combustion exhaust (NOx,

SOx and ammonia). The South Coast air basin has been designated as a non-attainment zone for the state 24-hour and annual PM10 ambient air quality standards.

The historic trend of 24-hour PM10 concentrations shows maximum concentrations have been significantly reduced from 1987 to 1999. Although violations of the state standard are still numerous, violations of the federal standard is coming under control for the South Coast air basin.

Emissions of primary PM10 are reduced by the exclusive use of natural gas as the power plant fuel. Natural gas contains very little noncombustible gas or solid residue. In addition, the low sulfur content of natural gas reduces the formation of downwind, secondary PM10.

The project's PM10 emissions will contribute to an existing violation of the state 24-hour and annual average PM10 standards. Thus, AES must mitigate these new emissions by obtaining PM10 offsets. The project will emit 80.16 pounds per day of PM10; AES will purchase priority reserve PM10 credits once the Priority Reserve Rule 1301.1 is amended to allow projects such as electrical generating units to use priority reserve credits. (PDOC p. 26). That rule amendment approval will take place no sooner than April 20, 2001.

MITIGATION: AES shall control PM10 to meet an emission limitation of 0.82 lbs/mmscf. PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1, 372-1**. AES shall obtain PM10 offsets for PM10 mitigation.

Sulfur Dioxide

Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Fuels such as natural gas contain very little sulfur and consequently have very low SO2 emissions when combusted. Sources of SO2 emissions within the South Coast Air District come from every economic sector and include a wide variety of fuels, gaseous, liquid and solid. The South Coast air basin is designated attainment for all the SO2 state and federal ambient air quality standards.

Notwithstanding attainment for SO2, SCAQMD rules require offsets for SOx as SOx emissions are precursors to secondary PM_{10} formation. AES will emit 59.52 pounds per day of SOx and will enter the RECLAIM market to secure the necessary RTC. (PDOC p. 27) As a result, potential SO2/SOx impacts are insignificant.

MITIGATION: AES shall control SOx (as SO2) to meet an emission limitation 0.63 lbs/mmscf. Conditions: **AQ-2,** PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1**. AES shall obtain SOx offsets. Condition: **296-1**.

Volatile Organic Compounds

There are no state or federal standards for VOC. VOCs are significant emissions since they are precursors (contributors) to ozone. Ozone attainment, therefore, requires minimum VOC emissions and, as appropriate, VOC offsets. VOCs are formed in the combustion process. BACT for VOC will be achieved by use of low-NOx burners, which use air to fuel ratios that result in low combustion VOC while still maintaining low NOx levels. BACT for VOC has historically been use of best combustion practices, since the majority of VOC emissions are compounds that are not susceptible to control by oxidizing catalysts.

Additionally, VOC offsets are necessary for ozone attainment. AES proposes to obtain 148 pounds/year in VOC offsets, which is an excess of VOC required (108 pounds/day). (PDOC pp. 13, 14)

MITIGATION: AES shall control VOC to meet an emission limitation of 0.93 lbs/mmscf. PDOC Conditions: **63-1**. AES shall conduct source testing and report emissions. Conditions: **28-2, 40-1**. AES shall obtain VOC offsets for ozone attainment.

Commissioning and Start-Up

The initial commissioning of a power plant refers to the time frame between completion of construction and the consistent production of electricity for sale on the market. Normal operating emission limits usually do not apply during initial commissioning procedures. The boilers will go through several layers of test during initial commissioning. During the first set of tests, post-combustion control will not be operational (i.e., the SCR and oxidation catalyst).

Both the initial commissioning and start-up sequences are subject to SCAQMD rule to minimize emissions. Since these event are of short duration and subject to controls and procedures to minimize emissions, there will not be a significant impact from commissioning and start up so longs as SCAQMD rules are met.

Visibility Impacts

A visibility analysis of the project's gaseous emissions is required under the Federal Prevention of Significant Deterioration (PSD) permitting program. The analysis addresses the contributions of gaseous emissions (primarily NOx) and particulate (PM10) emissions to visibility impairment on the nearest Class 1 PSD areas, which are national parks and national wildlife refuges. The nearest Class 1 areas to the Huntington Beach Units 3 & 4 Retool Project site are the Aqua Tibia Wilderness area, the Cucamonga Wilderness area, and the San Gabriel Wilderness Area. AES used the EPA approved model ISCST3 to assess the project's visibility impacts. The results from the VISCREEN modeling analysis indicated that the project's visibility impacts would be below the significance criteria for contrast and perception. Therefore the project's visibility impact on these Class 1 areas is insignificant. (SA p. 52.)

Cumulative Impacts

To evaluate the cumulative emission impacts of the HBGS Retool Project along with other probable future emission sources, the CEC staff gathered and evaluated District records to determine other sources, which along with the HBGS retool project, may cumulatively impact the site area. Stationary sources located within six miles of the HBGS site that meet the following criteria were used to identify other emission sources that may cause cumulative impacts:

(a) Have received an Authority to Construct (ATC) permit but are not yet operational; or
(b) Have submitted complete ATC applications to the District.

Staff reviewed a list of potential cumulative emission sources provided by the District. Staff identified approximately 15 possible candidate sources for further investigation. Upon reviewing the types of sources, the size (by quantity of fuel consumed), the emissions, and their location relative to the HBGS, staff determined that a cumulative modeling assessment that includes sources other than the Units 1-5 of the HBGS was not necessary. It is staff's judgement that there would be no emission plume overlap

between the HBGS sources and the possible candidate sources, thus rendering an air dispersion modeling exercise not necessary.

The Energy Commission is aware of the proposed Poseidon Resources Corporation desalination plant that is planned to be located on the HBGS property. At this time this plant is in the preliminary planning stages and there are no air quality permit applications submitted to the District; therefore, at this time no cumulative impacts can be assessed for this project in conjunction with the HBGS Retool Project. However, the EIR that will be prepared for the proposed desalination project will have to assess its impact in conjunction with the rest of the HBGS.

Huntington Beach Unit 5

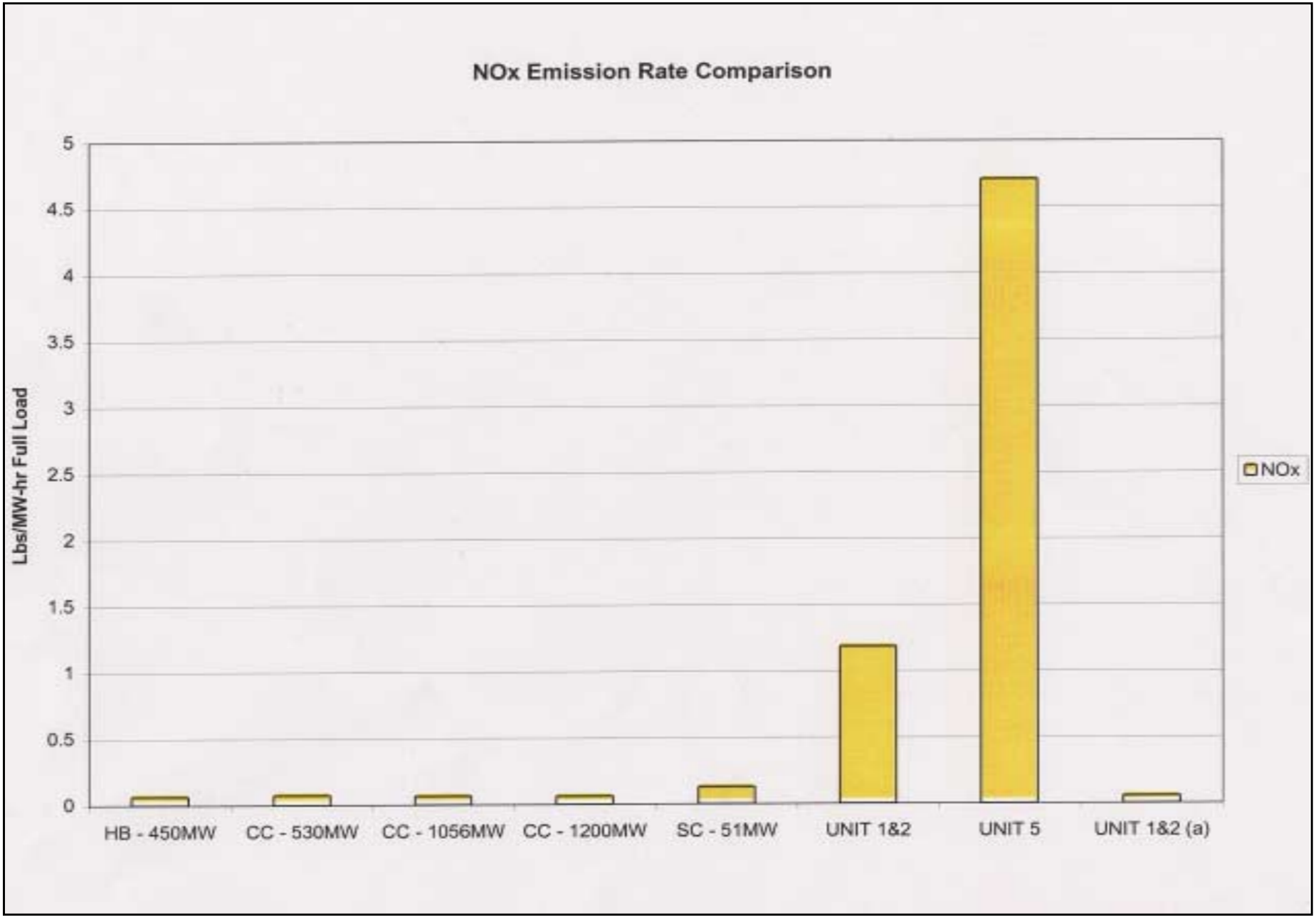
CEC Staff is concerned about the potential for significant adverse cumulative impacts occurring from the combined operation of Units 3 and 4 with Units 1, 2 and 5. It is staff's position that the modeling analysis shows that the operation of Unit 5 can, by itself, cause a violation of the State 1-hour NO2 ambient air quality standard. The reasons for the large impact from Unit 5 is due to the old turbine technology of the gas turbine engines which results in exceedingly high NOx emissions and the relatively short stack heights of the two exhaust stacks. The high emissions along with the short stack heights coupled with steady-state winds can produce a downwash effect, bringing emission plumes to the ground. The downwash efffect causes the results in high short term impacts. **Air Quality Figure 1** represents Staff's comparison of the NOx emissions per megawatt for the Retool Project, Unit 5, and other combined cycle projects reviewed by the Energy Commission.

According to Staff, the PM10 impacts from the operation of all five units would cause a further exacerbation of violations of the state and federal PM10 standards. The overwhelming majority of PM10 impacts (approximately 99 percent) is from the operation of Unit 5.

Furthermore, based upon eyewitness accounts by a number of local citizens to the HBGS, a "yellow or brownish" cloud of emissions appears to emanate from the stacks of Unit 5. Staff believes that the emissions from Unit 5 cause "detriment, nuisance, or annoyance to any considerable number of persons or to the public" and further, that if violations of the 1-hour NO2 were occurring because of the operation of Unit 5, this emission source "endangers the comfort, repose, health, or safety of any such persons or the public."

Staff has proposed Conditions of Certification that restrict the operation of Unit 5 during 2001 and early 2002, to only those times when the megawatts generated from that unit are absolutely necessary as required by the ISO. Subsequently, Staff is recommending in the long term that Unit 5 have emission controls applied to significantly reduce the NOx emissions from Unit 5 and thus the significant impacts that this Unit has on the ambient air quality in the area. Alternatively, the Staff believes the Applicant can decide to permanently shutdown Unit 5, thus avoiding the significant air quality impact altogether.

AIR QUALITY - Figure 1
Huntington Beach Generating Station Retool Project



The City of Huntington Beach and CURE concur with Staff's position and recommendation of a condition limiting the contemporaneous operation of Units 3, 4, and 5.

AES opposes any restrictions by the Energy Commission on the use of Unit 5 on the grounds that Unit 5 is not part of the "project" as defined by CEQA. AES points out that between Units 1, 2, 3, and 4, emissions at the Huntington Beach Generating Station have been reduced by 80 percent. Since Units 3 and 4, themselves, will not cause an air quality impact, the Commission should not be examining the effect of Unit 5.

The Commission finds a narrow interpretation of cumulative impacts is inappropriate when attempting to assure that all reasonable contributors to a potential cumulative air quality (and possibly related public health) impact are identified.

The evidence that Unit 5 is a significant air pollution source is not denied by AES. So, the question is whether to authorize the addition the emissions from Units 3 and 4 to the emissions of Unit 5 and cause a significant cumulative NOx and PM10 air quality impact <u>or</u> to act to reduce or eliminate that cumulative impact. Given that the effects of Unit 5 are nearly off the chart, the Commission must act to prevent the cumulative impact.

Taking all the circumstances into account, common sense suggests that Unit 5 not operate unfettered, so that Units 3 and 4 can generate nearly three times the megawatts more cleanly and efficiently than Unit 5. Yet, Unit 5 is a valuable resource at the time of a Stage 3 Electrical Emergency. Using Unit 5 to avert impending blackouts is in the public interest, since the contribution of Unit 5's electricity to public health and safety under such circumstances outweighs the potential emissions impact to the public from short duration operation.

The Commission notes that SCAQMD has publicly discussed potentially controlling the emissions from sources such as Unit 5 through the application of Best Available Retrofit Control Technology (BARCT).

MITIGATION: Through December 31, 2002, Units 3 and 4 shall not operate contemporaneously with Unit 5 unless the ISO has declared a Stage 3 Electrical Emergency and the ISO has specifically called-up Unit 5 to avoid an imminent blackout. After December 31, 2002, operation of Huntington Beach Unit 5 shall cease. These requirements may be superseded by SCAQMD's adoption of emission controls by Best Available Retrofit Control Technology or other means applicable to Unit 5. Condition: **AQ-4**.

MISCELLANEOUS

CURE proposed several additions to Staff's proposed Conditions of Certification. CURE suggested amending AQ-C2 to require the use of PuriNOx, a brand of diesel fuel additive, which claims to lower PM10 emissions. Traditionally, the Commission does not adopt a condition that tends to favor a particular vendor's product. The Staff's suggested 15 ppm sulfur content fuel is adequate to reduce construction emissions and is not available exclusively from one vendor.

CURE also asked that Condition AQ-C3 be modified to require construction equipment to be CARB certified since that would be more restrictive than the EPA 1996 standard. The Commission has used the EPA 1996 standard sufficiently often that it has become *de facto* a standardized condition. The Commission believes that it does not have sufficient information at this time to change to the "CARB-certified" standard, particularly since, if approved, this project will begin construction immediately. It is not clear to the Commission that a more restrictive standard at this time would sufficiently improve emissions to risk the non-availability of equipment for this project.

CURE also sought to add to Staff's proposed AQ-3 a requirement for toxic emissions testing in addition to the source testing of Unit 5. The Commission believes that any additional testing await the results of the source testing required by AQ-3. If results warrant, the SCAQMD is the appropriate forum for consideration of toxic emissions testing, particularly if it contemplates a new BARCT rule.

Finding

With the implementation of the Conditions of Certification below, the project conforms with applicable laws related to air quality, and all potential adverse impacts to air quality will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

AQ-C1: Prior to the commencement of project construction, the project owner shall prepare a construction Fugitive Dust Mitigation Plan that will specifically identify fugitive dust mitigation measures that will be employed for the construction of the HBSG Retool Project and related facilities.

a) The Construction Fugitive Dust Mitigation Plan shall specifically identify measures to limit fugitive dust emissions from construction of the project. Measures that shall be addressed include the following:

- the identification of the employee parking area(s) and surface of the parking area(s);
- the frequency of watering of unpaved roads and disturbed areas;
- the application of chemical dust suppressants;
- the stabilization of storage piles and disturbed areas;
- the use of gravel in high traffic areas;
- the use of paved access aprons;
- the use of posted speed limit signs;
- the use of wheel washing areas prior to large trucks leaving the project site; and
- the methods that will be used to clean mud and dirt tracked-out from the project site onto public roads.

b) The following measures should be addressed for the transportation of the any borrow fill materials to the HBGS Retool Project site and the transmission and natural gas line sites, if any, and the transportation of export soils and construction debris:

- the use of covers on the vehicles;
- the wetting of the material; and
- insuring appropriate freeboard of material in the vehicles.

Verification: At least 5 days prior to the start of construction, the project owner shall provide the CPM with a copy of the Construction Fugitive Dust Mitigation Plan for approval. Construction shall not commence until CPM approval of the Plan.

AQ-C2: The project owner shall use exclusively 15 ppm sulfur content fuel (such as ECD-1 or equivalent) in all diesel off-road construction equipment.

Verification: The project owner shall submit to the CPM records of purchase of the diesel fuel that includes the sulfur content of that fuel as part of monthly compliance reports.

AQ-C3: The project owner shall use EPA certified 1996 low NOx emission construction equipment or demonstrate that its equipment complies with the EPA 1996 diesel engine emission standards. The project owner shall ensure that all heavy earthmoving equipment including, but not limited to, bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications.

Verification: The project owner shall submit to the CPM, no later than 15 days after initiating construction, a written evaluation signed by a California registered professional engineer that demonstrates that all construction diesel engines comply with this requirement and if available copies of the EPA or CARB engine certifications.

AQ-C4: The project owner shall only use internal combustion powered generating equipment to provide electrical power for the Unit 3 and 4 construction activities during power outages.

Verification: The project owner shall maintain an operating log on all fuel-fired internal combustion engines that are used to supply electricity for the construction of Units 3 and 4. The operating log will identify at a minimum the dates and times of use and a daily record of equipment hour gauge data. A copy of this operating log will be provided to the CPM each month during construction, and will be made available to CEC or District staff at all times.

AQ-C5: The project owner shall provide to the CPM and the District, vendor and design data for the SCR and Oxidation catalyst systems, which will include performance guarantees that demonstrate that the systems have been designed to meet the NOx and CO emission concentration limits (5 ppm corrected to 3% O2 for each pollutant) Additionally, the SCR vendor data shall include ammonia slip performance guarantees of 5 ppm corrected to 3% O2.

Verification: At least 30 days prior to the installation of the catalyst systems, the project owner shall provide the CPM and the District with a copy of the SCR and Oxidation catalyst systems vendor and design data for approval.

OPERATING CONDITIONS

AQ-1: The project owner shall operate the post-combustion emission control devices (SCR and Oxidation catalyst systems) at all times, except during start-up or breakdowns, as defined by District Rule 430 and 2004, during boiler operation.

Verification: The project owner shall provide operating interlocks, or other control systems, that require the emission control equipment to be in operation during normal operation. At least 15 days prior to the installation of the catalyst systems, the project owner shall provide the CPM documentation on the control systems, procedures, etc. that will be used to ensure proper control of equipment operation.

AQ-2: The project owner shall use only pipeline quality natural gas to fuel Units 3 and 4 and the total sulfur content of the fuel shall be limited to 0.25 grain/100 scf, expressed as H2S.

Verification: The project owner shall test on-site the total sulfur content of the fuel quarterly and shall provide the results of the tests, expressed as equivalent grains of H2S per 100 scf. to the CPM within 30 days of performing each test.

AQ-3: The project owner shall source test Unit 5 for the following pollutants and exhaust parameters prior to September 1, 2001:

Nitrogen Oxides (and NO to NO2 ratio)
Carbon Monoxide
Reactive Organic Gases
PM10
Exhaust Velocity
Temperature

During this source test the project owner shall keep operating records, such as fuel flow, in order to determine appropriate emission factors for Unit 5.

Verification: The project owner shall provide the CPM with the source test protocol and schedule for review 30 days prior to conducting the source test on Unit 5, and shall provide the source test report to the CPM within 30 days of performing the source test. Additionally, the project owner shall allow CEC staff, CEC contractors, or other regulatory agency staff access to the site to observe the Unit 5 source tests.

AQ-4: Through December 31, 2002, Units 3 and 4 shall not operate contemporaneously with Unit 5 unless the ISO has declared a Stage 3 Electrical Emergency and the ISO has specifically called-up Unit 5 to avoid an imminent blackout. After December 31, 2002, operation of Huntington Beach Unit 5 shall cease. These requirements may be superseded by SCAQMD's adoption of emission controls by Best Available Retrofit Control Technology or other means applicable to Unit 5.

Verification: The project owner shall maintain operating records that identify contemporaneous periods of operation for Units 3 and 4 and Unit 5 along with the ISO emergency declaration or other documentation that verifies compliance with this condition. This compliance documentation shall be submitted to the CPM on a quarterly basis.

If the project owner intends to install Best Available Retrofit Control Technology (BARCT) on Unit 5, the project owner will provide the CPM a BARCT assessment document prior to initiating air quality permitting and shall provide the CPM a copy of all permitting documents for review during the BARCT permitting process.

AQ-5: The project owner shall investigate the feasibility of installing continuous emission monitors (CEMs) for ammonia on the stacks of Units 1 and 2 and Units 3 and 4 as a means of demonstrating compliance with required ammonia limits. If the use of an ammonia CEM system is found to be feasible and cost effective, it shall be installed and operating by the time Units 3 and 4 begin normal operation.

Verification: The project owner shall provide to the CPM the ammonia CEM feasibility report 30 days prior to beginning the normal operation of Units 3 and 4. The feasibility report, at a minimum will identify the available ammonia monitoring systems, their technical specifications and detection ranges, costs; if necessary, any reasons why these systems are not technically feasibility for the HBGS; and if applicable the installation schedule and record keeping procedures for the ammonia CEMs that may be installed.

AQ-6: The initial commissioning of the Unit 3 and Unit 4 boilers shall not be performed concurrently, initial commissioning shall be limited to 48 hours for each boiler, and the input heat rate during initial commissioning of each boiler shall be limited to a total of 120 MMBtu/hr.

Verification: The project owner shall provide to the CPM, within 15 days of initial commissioning, the hourly fuel flow data for the initial commissioning period of each boiler.

AQ-7: The Unit 3 and Unit 4 boilers shall not be operated in start-up mode concurrently, each start-up (not including initial commissioning) shall be limited to 12 hours for each boiler, and the heat rate during initial commissioning of each boiler shall be limited to a total of 120 MMBtu/hr until the SCR is operational.

Verification: The project owner shall provide to the CPM quarterly records of the hourly fuel flow data and SCR operating data for the start-ups for each boiler.

AQ-8: The project owner shall maintain compliance with the District's FDOC and PTC/PTO conditions, including all monitoring and record keeping provisions.

Verification: The project owner shall provide to the CPM, on a quarterly basis within 30 days of the end of each quarter, a summary of the permit compliance status that, at a minimum, includes a summary of compliance with all District permit conditions and all CEC Air Quality Conditions of Certification, a listing and copies of notices of violation received from SCAQMD, ongoing status of any SCAQMD enforcement actions, and a listing of air quality related (i.e. odor, opacity, etc.) community complaints received by the project owner.

AQ-9: The project owner shall maintain compliance with the District's source testing requirements.

Verification: The project owner shall provide to the CPM copies of all District required source tests within 45 days of conducting those tests.

AQ-10: The project owner shall maintain compliance with the District's continuous emissions monitoring system (CEMS) requirements, including all record keeping requirements.

Verification: The project owner shall provide to the CPM, on a quarterly basis within 30 days of the end of each quarter, summaries of the CEMS data as required to be kept by District permit conditions, and as necessary to summarize data from CEMS that may be required by other CEC Conditions of Certification.

AQ-11: Units 3 and 4 shall not be operated unless the project owner demonstrates that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, the equipment shall not be operated unless the project owner demonstrates that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

Verification: The project owner shall provide operating records, including fuel use data and total operating hours for Units 3 and 4 and Unit 5, to the CPM on a quarterly basis within 30 days of the end of each quarter. The project owner shall also provide to the District and the CPM a quarterly NOx emissions profile of the entire Huntington Beach Generating Station verifying that there are sufficient NOx RECLAIM trading credits allocated for continued project operation.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

AIR QUALITY

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Air Act §111: 42 USC §7411; 40 CFR Part 60, subparts Db and GG	Establishes standards of performance to limit the emission of criteria pollutants for which the EPA has established national ambient air quality standards (NAAWS).
Clean Air Act §112 42 USC §7412; 40 CFR Part 63	Establishes national emission standards to limit hazardous air pollutant (HAP) emissions from existing major sources of HAP emissions in specific source categories.
Clean Air Act §160-169A 42 USC §7470-7491; 40 CFR Parts 51 & 53	Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies only to pollutants for which ambient concentrations do not exceed the corresponding NAAQS (i.e., attainment pollutants
Clean Air Act §171-193 42 USC 501 et seq.; 40 CFR Parts 51 & 52	Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to allow industrial growth without interfering with the attainment of ambient quality standards.
Clean Air Act §401 42 USC 654 et seq.; 40 CFR Part 72	Requires monitoring and reduction of emissions of acidic compounds and their precursors. The principal source of these compounds is the combustion of fossil fuels. Therefore, Title IV established national standards to limits Sox and NOx emissions from electrical power generating facilities.
Clean Air Act §501 (Title V) 42 USC §7661; 40 CFR Part 70	Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, record-keeping and reporting requirements. Title V applies to major facilities, acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit.
Clean Air Act 501 (Title V) 42 USC §7414; 40 CFR Part 64	Requires facilities to monitor the operation and maintenance of emissions control systems and report any control system malfunctions to the appropriate regulatory agency.
Emergency Planning and Community Right-to-Know Act § 313 (EPCRA)	EPCRA requires certain facilities and establishments to report toxic releases to the environment if they: 1. Manufacture more than 25,000 lbs. of a listed chemical per year; 2. Process more than 25,000 lbs. of a listed chemical per year; or 3. Otherwise use more than 10,000 lbs. of a listed chemical per year.
STATE	
Health & Safety Code (H&SC) §39500 et seq.	Required by the Clean Air Act, the State Implementation Plan (SIP) must demonstrate the means by which all areas of the state will attain NAAQS within the federally mandated deadlines.
H&SC §40910-40930	The California Clean Air Act requires local Air Pollution Control District's (APCD) to attain and maintain both national and state AAQS at the earliest practicable date.

APPLICABLE LAW AIR QUALITY	DESCRIPTION
H&SC §39650-39675	The Toxic Air Contaminant Identification and Control Act creates a two-step process to identify toxic air contaminants (TAC) and control their emissions. The ARB identifies and prioritizes the pollutants to be considered for identification as Tacos. The ARB then assesses the potential for human exposure to a substance while the Office of Environmental Health Hazard Assessment evaluates the corresponding health effects.
California Public Resources Code §25523(a); 20 CCR §§1752, 1752.5, 2300-2309, and Div. 2 Chap. 5, Art.1, Appendix B, Part(k)	Establishes requirements in the Sec's decision making process on an application for certification that assures protection of environmental quality.
LOCAL	
SCAQMD Air Quality Plan; H&SC §40914	The SCAQMD plan defines the proposed strategies, including stationary source control measures and new source review rules whose implementation will attain the state AAQS.
SCAQMD Rule 201; H&SC §40000 et seq.; H&SC §40400 et seq.	Rule 201 (Permit to Construct) establishes an orderly procedure for the review of new and modified sources of air pollution through the issuance of permits. Rule 201 specifies that any facility installing nonexempt equipment that causes or controls the emission of air pollutants must first obtain a Permit to Construct from the SCAQMD.
H&SC §40000 et seq.; H&SC §40400 et seq.	SCAQMD Regulation XIII, Regulation XVIII, and Rule 2005 requirements
SCAQMD Rule 1401(New Source Review of Toxic Air Contaminants); H&SC §40000 et seq. and H&SC §40400 et seq.	Rule 1401 establishes allowable risks for new or modified sources of TAC emissions and specifies limits for maximum individual cancer risk (MICR), cancer burden, & non-carcinogenic acute and chronic hazard indices (HI) for new or modified sources of TAC.
SCAQMD Regulation XXX – Federal Operating Permit; H&SC §40000 et seq., H&SC §40400 et seq.	Regulation XXX (Title V Permits) provides for the issuance of federal operating permits that contain all federally enforceable requirements for stationary sources as mandated by Title V of the Clean Air Act. Regulation XXX requires major facilities and acid rain facilities undergoing modifications to obtain an operating permit containing the federally enforceable requirements mandated by Title V of the Clean Air Act.
SCAQMD Regulation XXXI – Acid Rain Permit; H&SC §40000 et seq., H&SC §40400 et seq.	Regulation XXXI provides for the issuance of acid raid permits in accordance with Title IV of the CAA. Regulation XXXI requires a subject facility to hold emissions allowances for SOx, and to monitor SOx, NOx and CO2 emissions and exhaust flow rates.
SCAQMD Regulation IX – Standards of Performance for	Regulation IX incorporates, by reference, the provisions of Part 60, Chapter 1, Title 40 of the Code of Federal Regulations. It requires

New Stationary Sources; H&SC §40000 et seq., H&SC §40400 et seq.	compliance with federal Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units and Stationary Gas Turbines.
SCAQMD Rule 401 – Visible Emissions	Establishes limits for visible emissions from stationary sources. This rule prohibits visible emissions as dark or darker than Ringlemann No. 1 for periods greater than three minutes in any hour.
Rule 402 – Nuisance	Prohibits the discharge from a facility of air pollutants that cause injury, detriment, nuisance, or annoyance to the public or that damage business or property.
Rule 403 – Fugitive Dust	Establishes requirements to reduce the amount of PM entrained in the ambient air as a result of man-made fugitive dust sources.
Rule 407 – Liquid and Gaseous Air Contaminants	Establishes limits for CO and SOx emissions from stationary sources.
Rule 409 – Combustion Contaminants	Establishes limits for particulate emissions from fuel combustion sources.
Rule 431.1 – Sulfur Content of Gaseous Fuels	Limits for the sulfur content of natural gas to 16 ppmv.
Rule 431.2 – Sulfur Content of Gaseous Fuels	Limits the sulfur content of diesel fuel to 0.05 percent by weight.
Rule 474 – Fuel Burning Equipment – Oxides of Nitrogen	Establishes limits for NOx. Huntington Beach Units 3 & 4 Retool Project is also a NOx RECLAIM facility, therefore, Rule 474 is not applicable to the project.
Rule 475 – Electric Power Generating Equipment	Establishes limits for combustion contaminants from subject equipment.
Rule 476 – Steam Generating Equipment	Establishes limits for NOx and combustion contaminants from subject equipment. NOx RECLAIM facilities are exempt from the NOx provisions of Rule 476. Therefore, Rule 476 is not applicable to AES.
Rule 53A – Specific Contaminants	Establishes limits for sulfur compounds and combustion contaminants from stationary sources.
Rule 1110.2 – Emissions from Stationary Internal Combustion Engines	Establishes limits for emissions of NOx, VOC and CO from the stationary internal combustion reciprocating engines. Since the emergency generator and fire pump engines will each be limited to operating less than 200 hours per year, they are exempt from this regulation. Therefore, Rule 1110.2 is not applicable to Huntington Beach Units 3 & 4 Retool Project.
Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines	Establishes limits for emissions of NOx from the stationary gas turbines. NOx RECLAIM facilities are exempt from the provisions of Rule 1134. Therefore, Rule 1134 is not applicable to Huntington Beach Units 3 & 4 Retool Project.
Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating	Establishes limits for emissions of NOx from the electricity generating systems. NOx RECLAIM facilities are exempt from the provisions of Rule 1135. Therefore, Rule 1135 is not applicable to Huntington

Systems	Beach Units 3 & 4 Retool Project.
Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, Commercial Boilers, Steam Generators & Process Heater	Establishes limits for emissions of NOx and CO from industrial, institutional, and commercial steam generating units. Boilers used to generate electricity are exempt from this regulation. Therefore, Rule 1146 is not applicable to HUNTINGTON BEACH UNITS 3 & 4 RETOOL PROJECT.
Rule 1404 – Hexavalent Chromium Emissions from Cooling Towers	Prohibits addition of hexavalent chromium-containing water treatment chemicals to cooling tower-circulating water.

BIOLOGY

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Protected Species Impact	None	MITIGATION	Insignificant	Yes
	The power plant site, located within the fenced boundary of the existing Huntington Beach Generating Station, is un-vegetated soil and devoid of biological resources. Thus, there will be no on-site biological resource impacts. The area southeast of the power plant boundary is marsh habitat, called Huntington Beach Wetlands, which supports a variety of biological resources. The Huntington Beach Wetland has been degraded by the lose of tidal influence and the presence of non-native plant species. Units 3 and 4 will use the existing cooling water intake and outfall structures which are located approximately 1,500 feet offshore at a water depth of 27 feet Mean Lower Low Water. **MITIGATION:** Terrestrial biological resources at the Huntington Beach Wetlands may be indirectly impacted by noise, lighting, or surface water runoff during project construction and operation. Off-site noise limits are provided in **NOISE-6**. Off-site lighting mitigation is provided in **VIS-6**. Controls for surface water runoff are provided in **BIO-1**. *References: SA 231-252*			
Long-term Habitat Loss/ Degradation	None	None	None	Yes
	By constructing the proposed power plant at an existing power plant site, the project will not cause any long-term habitat loss or degradation. *Reference: SA 231-252*			
Operation Impact	MITIGATION	None	MITIGATION	Yes
	Power plant operation causes the impingement and entrainment of aquatic resources in the cooling water intake structure. Currently, the effects of the Huntington Beach intake are based on 20-year-old data from other generating stations. Recent analysis of the queenfish and white croaker provide sufficient concern of cumulative impingement and entrainment impacts to warrant a new study of the effect from the Huntington Beach Generating Station. **MITIGATION**: AES will conduct a one-year monitoring program of Huntington Beach Generating Station impingement and entrainment losses, conduct a cumulative effect analysis on nearshore fish populations, and if appropriate provide mitigation. Conditions: **BIO-3** and **BIO-4**. Entrained fish usually become trapped in the forebay portion of the cooling water intake system, where ultimately they are killed during heat treatment or die of exhaustion. The intake design may not be the best technology currently available for reducing impacts to marine life. **MITIGATION**: AES will study the feasibility of retrofitting newer technology in the cooling water intake system to reduce fish trapped in the forebay. If feasible, such technology will be implemented. Condition: **BIO-5**. *Reference: SA 231-252*			

BIOLOGY - GENERAL

The proposed power plant site is within the existing AES Huntington Beach Generating Station (HBGS).

Protected Species Impact

No significant biological resources are located on the power plant site.

The HBGS is located in Orange County's northern coastal area. This area is characterized by broad sandy beaches backed by low bluffs and mesas, coastal sand dunes, non-native dominated grasslands and lowland areas that once held extensive wetlands. Urbanization has obscured much of these vegetation characteristics in the project vicinity. However, coastal salt marsh, sand dune and ruderal vegetation are found adjacent to or within a one-mile radius of the project site.

Areas of coastal salt marsh occur approximately 0.5 mile to the northwest and immediately to the southeast of HBGS. The latter is an Orange County-protected wetland resource and is referenced as the Huntington Beach Wetlands, which is noticeably dominated by pickleweed. Formerly this marsh would have been open enough to maintain an ocean inlet and sufficient tidal action; however, urbanization over time has altered this hydrology to support shallower water, diminished tidal action and limited ocean connection, with potentially greater influence from fresh water.

Coastal salt marshes demonstrate noticeable seasonality in terms of water quality, plant life histories, and resident and migratory waterfowl. They are among some of the most productive ecosystems and provide habitat to several hundred species of birds, mammals, reptiles, mollusks and insects.

There are small areas of sand dune vegetation near HBGS that border the Huntington Beach Wetlands. In these areas, aggressive non-native species such as ice plant are noticeably present. Ruderal areas are dominated by highly competitive and invasive non-native species mixed with a few native species. These areas are characterized by significant and/or repeated surface disturbance. The ruderal vegetation identified at the HBGS is a Super Fund site slated for clean-up, located to the northwest in a fenced field.

These plant communities support a limited number of wildlife species because they are fragmented and impacted by surrounding residential, recreational, commercial and flood control uses, in addition to the existing industrial activities at the HBGS site. However, because of the proximity of the marshes, beaches and dunes in the project area to less disturbed areas, it is not surprising that several species of shorebirds and gulls use the upper beach for foraging and possibly nesting. Similarly the Huntington Beach Wetland may provide a refuge for migrant and wintering waterfowl, waders, shorebirds and terns.

Marine habitats in the vicinity of HBGS consist primarily of sand substrate. A wide sandy beach, broken by various jetties and groin fields, extends from the entrance to Newport Harbor about 6.5 miles southeast of the generating station upcoast to Anaheim Bay.

The intake and outfall structures for the cooling water system are located approximately 1500 feet offshore at a water depth of approximately 27 feet Mean Lower Low Water (MLLW). The seafloor in the vicinity of the study area is a gently sloping sand bottom.

MBC Applied Environmental Sciences has monitored the marine environment in the vicinity of HBGS for the past 25 years. The community of invertebrates living in the sand (infauna) is dominated by annelid worms, crustaceans and molluscs. Common epifaunal invertebrates (living on top of the sand) in the vicinity of HGBS include the tube worm, the blackspotted bay shrimp, the tuberculate pear crab, the yellow rock crab, sea anemones, the sea star, and unidentified crabs, tube worms, and brittle stars.

Fish populations in the vicinity of HBGS are typical of southern California nearshore soft bottom habitats. Although there has been variability in fish abundance over the 25 years of surveys, the fish community in the area has remained fairly consistent over time. In most years white croaker), queenfish), and northern anchovy are the most abundant species caught. An exception was in 1999 in which the most abundant species were California lizardfish and speckled sanddab.

Fish impingement sampling is conducted during representative periods of normal operation and during all heat treatment procedures to obtain an estimate of total impingement for the year. Queenfish was the dominant species impinged in 2000, and, except for 1999, it has been the most abundant fish in impingement collections since 1979. White croaker and jacksmelt were the other most abundant fishes impinged in 2000. During this 21 year period, queenfish accounted for 81.8% of the fish impinged and queenfish, white croaker and northern anchovy accounted for 91.3% of the impinged fishes.

Common bird species in the ocean waters offshore HBGS include the California brown pelican, surf scoter, western gull, western grebe, and double-crested, Brandt's and pelagic cormorants. The sandy beach in the vicinity of HBGS is used for foraging by a variety of shorebirds.

The State and Federal Endangered California least tern nests on the sandy beach a little over a mile south of HBGS adjacent to the Santa Ana River mouth. The western snowy plover is a Federal Threatened species and a California Species of Special Concern. The closest regular snowy plover nesting site to HBGS is in the Bolsa Chica wetlands approximately 5 miles to the northwest. Snowy plovers nested within the Huntington Beach California least tern colony in 1993. Wintering snowy plovers have been observed to forage along the sandy intertidal zone in the vicinity of HBGS.

The Federal and State Endangered California brown pelican nests on Anacapa and Santa Barbara Islands, off the Pacific Coast of Baja California, Mexico and in the Gulf of California, Mexico. California brown pelicans are common in the waters offshore HBGS especially during the non-breeding season of July through December. They feed primarily on northern anchovy.

The other sensitive species would be expected to occur only very rarely in the nearshore waters in the vicinity of HBGS.

There are no direct impacts associated with the project footprint or laydown area. In the present case terrestrial biological resources in the Huntington Beach Wetlands may be indirectly impacted by noise, lighting and surface water runoff during project construction and operation.

MITIGATION: Terrestrial biological resources at the Huntington Beach Wetlands may be indirectly impacted by noise, lighting, or surface water runoff during project construction and operation. Off-site noise limits are provided in **NOISE-6**. Off-site lighting mitigation is provided in **VIS-6**. Controls for surface water runoff are provided in **BIO-1**.

Long-term Habitat Loss/Degradation

The power plant site is either paved or un-vegetated and has no biological resources. Therefore, as to the site, no habitat resource is being lost or degraded.

Operation Impact

The applicant proposes to use the existing cooling water system. No modification of the existing intake or outfall is proposed. Therefore, construction impacts to marine resources will not occur.

Potential impacts of the HBGS Retool Project to marine resources are related to entrainment and impingement by the intake and the temperature effects of the thermal discharge. Impingement refers to the trapping of organisms on the screens of the intake. Entrainment refers to the process by which organisms are sucked into and through the cooling water system.

Intake and discharge volumes are expected to be within historic levels when Units 1, 2, 3, and 4 were operating, but greater than levels since 1995 when Units 3 and 4 were phased out.

Ocean water surface temperatures off Huntington Beach average approximately 52 to 62 degrees Fahrenheit (F) in the winter and 65 to 75 degrees F in the summer. The applicant has provided information on current and expected temperature changes in ocean waters in the vicinity of the discharge (AES 2001). The HBGS's current National Pollution Discharge Elimination System (NPDES) permit allows a difference between the intake and discharge temperatures (Delta T) up to and including 30 degrees F. Typically, Delta T averages about 20 degrees. Daily measurements of intake temperatures during the summer months from August 1996 to August 2000 ranged from approximately 54 to 88 degrees F and discharge temperatures ranged from approximately 80 to 100 degrees F. During winter months, intake temperatures ranged from 54 to 65 degrees F and outfall temperatures from 57 to 96 degrees F.

In addition to the discharge of heated water as a result of unit operation, the applicant proposes to conduct monthly heat treatments to eliminate fouling organisms that grow within the cooling water system. During the treatment, heated effluent water from the discharge conduit is re-entrained via cross-connecting tunnels to the intake conduit until the temperature reaches approximately 105 degrees F. This temperature is maintained for at least one hour. Mussels, barnacles, fish and invertebrates living in the intake unit and forebay are killed, impinged onto the traveling screens and then removed from the forebay. Heat treatment raises discharge water temperatures to approximately 112 to 122 degrees F. The HBGS NPDES permit allows a Delta T of up to 125 degrees F during adjustment of the recirculation gate and allows a Delta T of up to 130 degrees F for no more than 30 minutes. Even during heat treatments elevation of temperatures above 4 degrees F are limited to within a few hundred feet surrounding the outfall.

Except for individuals trapped by currents within the forebay of the intake during heat treatments, fishes and mobile invertebrates will avoid water temperatures that are above their thermal tolerance. An elevation in ocean water temperature of 4 degrees F or less generally is within the natural range of ocean water temperatures off Huntington Beach and would be expected to be within the tolerance level of most marine organisms. Annual monitoring of fishes and invertebrates in the vicinity of HBGS has noted few differences between the marine life around the intake and discharge structures and control areas. The slight differences noted were of infaunal invertebrates and flatfish (sanddabs) in the immediate vicinity of the structures and were more likely related to the physical effect of the structures

on sediments than on temperature differences. The thermal effects of normal operations of the HBGS on marine life are expected to be insignificant.

The Huntington Beach colony of the State and Federal Threatened California least tern is dependent on an adequate prey base of small fishes in the vicinity of the colony. Terns from this colony forage heavily in ocean waters in the vicinity of the HBGS intake and outfall structures. Fish including the prey of California least terns (primarily topsmelt and northern anchovy) would be expected to avoid any portions of the thermal plume outside their tolerance range. Because the area elevated more than 4 degrees ambient is within a 400-foot or less radius of the discharge, the amount of foraging habitat for the California least tern adversely affected by the discharge would be minimal (5 acres or less). Impacts to the California least tern of the increased thermal discharge by the HBGS Retool Project would be expected to be insignificant. Other sensitive seabird species, such as the endangered California brown pelican, that forage in nearshore waters near HBGS also would not be expected to suffer a significant impact from the increased discharge. Any thermal effects on fish populations would be limited to within a 400-foot radius of the discharge plume.

Federal Threatened western snowy plovers forage on the beach near HBGS. The Thermal Effect Study for the HBGS did not find that there was a reduction in sandy beach organisms near the power plant compared to transects further away. Therefore, the discharge would not be expected to affect the prey base of the western snowy plover.

To predict the effects of entrainment and impingement by the intake on marine resources, the applicant has presented the results of a 1983 study done by Southern California Edison to comply with Section 316(b) of the Clean Water Act (SCE 1983). The HBGS 316(b) study was part of a demonstration for all Southern California Edison's (SCE) power plants with intakes in offshore southern California marine waters and protected harbor waters including HBGS, then owned and operated by SCE. Instead of measuring entrainment impacts for each individual facility, the study estimated entrainment for each facility by studying representative sites and applying those results to facilities with similar intake structures. The Ormond Beach Generating Station and San Onofre Generating Station Unit 1 were the representative sites for entrainment sampling for the group of physically and biologically similar intakes into which HBGS was classified. All three power plant intakes are located in the shallow nearshore zone of the Southern California Bight. The Ormond Beach Generating Station is in the City of Oxnard in Ventura County. The San Onofre Generating Station is in San Diego County near San Clemente. Mean daily entrainment at the Ormond Beach Generating Station and San Onofre Generating Station Unit 1 was determined from monthly samples collected from August 1979 through July 1980. Mortality of entrained larvae was assumed to be 100%. Estimates of entrainment at the HBGS intakes were developed by applying a flow rate adjustment to daily entrainment observed at the Ormond Beach and San Onofre Generating Station intake systems.

The most abundant fish larvae collected at both the Ormond Beach and San Onofre Generating Station intakes were those of northern anchovy, white croaker and queenfish. These three species comprised 78 % of the entrained individuals.

Adult fish losses at HBGS result from impingement in the station cooling water system. To estimate the total impact to fish populations of entrainment and impingement at HBGS, Southern California Edison adapted a fish population model developed by MacCall et al. (1983). The model calculates the magnitude of the probability (R_c) of a fish surviving entrainment and impingement mortality through five years of age. The statistic ($1-R_c$) indicates the percent probability of mortality due to station operation.

With the exception of queenfish, all of the target species either had a probability of mortality (1-R_c) due to the intake of less than 1 % or were entrained or impinged in numbers too low to calculate an R_c value. Queenfish, however, had an R_c value of 93.4 resulting in a 6.6% probability that individuals will experience entrainment or impingement mortality at HBGS. This impact was due primarily to the large numbers of adult queenfish impinged on the intake and is considered potentially significant. The study concluded that the impact was not significant because queenfish have continued to be common in fish collections in the Southern California Bight and have not been observed to decline. However, it is not clear that sampling for this species has been systematic enough to observe a decline if it were occurring. The study calculated R_e for queenfish in the Southern California Bight as 0.857 suggesting that the impingement losses would not result in economic or ecological impacts and determined that the impact was insignificant. However, the analysis only used impingement and entrainment at HBGS in the model, and did not take into account impingement and entrainment losses at all power plants within the Southern California Bight. When the effect of these other intakes is considered, it is possible that the stock of queenfish in the Southern California Bight is being depleted below self-sustaining levels for the region. Thus, impacts of the HBGS intake system on queenfish are considered to be potentially significant.

CEC staff is concerned that the determination of the effects of the HBGS intake is based on studies done 20 years ago for other generating stations. Recent analysis indicates that populations of queenfish and white croaker within the Southern California Bight may, in fact, have experienced a long-term decline.

The HBGS Retool Project would be expected to increase flow rates to a level similar to that prior to 1994 when all units were operating. Mean daily flow between 1979 and 1993 ranged between 134.6 and 476.2 million gallons per day (mgd) compared to between 144.1 and 163.8 mgd after 1994. Total estimated fish impingement between1979 and 1994, when Units 1 through 4 were operating, ranged between 3,679 and 905,003 individuals per year. Fish impingement at HBGS is significantly related to flow rate, although other factors also appear to be important (AES 2001). Therefore, because flow rate would be expected to increase, the HBGS Retool Project would be expected to increase fish impingement over current levels.

The HBGS has a large forebay on site, and many fishes apparently become trapped in the forebay. They swim into the structure and, because of the strong currents generated by the intake, cannot leave (C. Mitchell, MBC, pers. comm. 2001). All of the fishes trapped in the intake structure are killed during heat treatments although, because they apparently cannot escape, they might be lost anyway.

CEC staff is concerned that the design of the HBGS intake does not represent the Best Available Technology for the protection of marine life. Methods, such as a fish return system, may be available to reduce the number of fish trapped within the forebay.

MITIGATION: AES will conduct a one-year monitoring program of Huntington Beach Generating Station impingement and entrainment losses, conduct a cumulative effect analysis on nearshore fish populations, and if appropriate provide mitigation. Conditions: **BIO-3** and **BIO-4**.

MITIGATION: AES will study the feasibility of retrofitting newer technology in the cooling water intake system to reduce fish trapped in the forebay. If feasible, such technology will be implemented. Condition: **BIO-5**.

AES opposes Staff's original proposed condition BIO-5 requiring up-front payment of the costs of the impingement and entrainment studies. Given the possible term of certification, the Commission now

believes that up-front payment by AES will best assure that Condition **BIO-3** will be complied with in the early stages of the operation of the facility.

CURE requests that the intake system retrofit studies (now BIO-5) include examination of the proposals in the El Segundo Redevelopment Project Application for Certification and immediate implementation. Staff suggested implementation upon AES's assessment of the long-range plans for the Huntington Beach Generating Station or the renewal of the NPDES permit. The Commission believes that the Staff-proposed timetable is sufficient, particularly given long-range planning for the best future for the HBGS.

Cumulative Impacts

With regard to cumulative impacts to terrestrial biological resources, power plants that are under development or application in the region are at too great a distance to contribute to the noise lighting, and surface water impacts. However, potential impacts from noise and lighting may change when considered together with operation of Units 1, 2 and 5 and, because of their intimate association with Units 3 and 4. No additional cumulative impacts to terrestrial species have been identified.

The impacts of impingement and entrainment by the HBGS cooling water intake on nearshore fish populations in the Southern California Bight will act cumulatively with the impacts of impingement and entrainment at the other Southern California power plants that draw water from the ocean for their cooling water systems. The 316(b) demonstration for the HBGS indicated that impacts of impingement on queenfish were close to significant. When the impacts of impingement and entrainment of queenfish at the HBGS are added to the impacts of impingement and entrainment at all the Southern California generating stations, the cumulative impacts on this and other marine species could be significant, but mitigable.

Findings

With the implementation of the Conditions of Certification below, the project conforms with applicable laws related to biological resources, and all potential adverse impacts to biological resources will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

STORMWATER RUNOFF

BIO-1 Prior to operation of Units 3 and 4, project owner's Storm Water Pollution Prevention Plan shall be updated, and approved by the CEC CPM, to ensure that all berms and surface drainage installations are constructed, or existing features modified, to prevent any treated or untreated surface water runoff originating within or crossing the AES property from reaching the Huntington Beach Wetlands.

Verification: No less than 30 days after certification, the project owner shall submit to the CEC CPM and City of Huntington Beach a copy of the revised Stormwater Pollution Prevention Plan that specifies all modification to berm and surface drainage installations and any other related facilities necessary to prevent any treated or untreated surface water runoff originating within or crossing the AES HBGS property from reaching the Huntington Beach Wetlands. This plan must incorporate all requirements specified by the City of Huntington Beach for the protection of water quality contained in Municipal Code Title 14. The project owner shall submit to the CEC CPM verification from the City of Huntington Beach that the revised plan complies with all applicable local requirements. This condition is consistent with **SOIL & WATER-1**.

LANDSCAPING TO PROTECT HUNTINGTON BEACH WETLANDS

BIO-2: The project owner shall incorporate native plant species into the landscape at the property perimeter adjacent to the Huntington Beach Wetlands to prevent further degradation of the marsh habitat through the introduction of non-native plant species consistent with the City's General Plan Policy C7.2.4. Native plant species to be used must be compatible with the native species currently found in the Huntington Beach Wetlands.

Verification: The project owner shall provide a final Landscaping Plan to the CPM at least 30 days prior to the beginning of commercial operation. The final plan shall include a list of native species that will be immediately used for landscaping within the AES HBGS property when landscaping is implemented.

IMPINGEMENT AND ENTRAINMENT

BIO-3: The project owner will prepare a monitoring/study plan and conduct one year of monitoring to determine the actual impingement and entrainment losses resulting from the operation of the cooling water system for the new Units 3 and 4 and the existing Units 1 and 2. The project owner will sample the intake and source water to determine fractional losses relative to their abundance in the source water.

Protocol: Sampling design and data analysis protocols should follow those developed from the most recent 316(a) and 316(b) studies at Diablo Canyon, Moss Landing and Morro Bay power plants and/or MacCall (1983), and the results used to determine the significance of impingement and entrainment losses on fish populations. This analysis shall consider the cumulative effect of all Southern California coastal power plants on nearshore fish populations. The study objectives, sample design, metrics and methods (protocols) shall be submitted to CEC CPM and approved by the CPM. The study protocols will be developed and put into a study plan within 60 days of project certification. The project owner will commence the monitoring within 30 days of the start of commercial operation of the new Units 3 and 4. The methods, analysis, results, and conclusions of the monitoring study will be documented in a scientific style report and submitted to the CPM for review and approval. Other agencies, including the U. S. Fish and Wildlife Service and the California Department of Fish and Game, shall be included in the review of the draft report, if they so request. A final report shall be prepared upon completion of the field sampling. The study results will be utilized during the NPDES permit renewal evaluation to be completed by the Santa Ana Regional Water Control Board in June 2005.

Verification: The project owner will submit a draft study plan to the CEC CPM within 60 days of project certification for review and approval. Within 90 days of certification, an agency and CEC-approved final study plan will be provided to the CEC CPM. The project owner will submit quarterly reports to the CPM during the study sampling period within 60 days following the completion date of that quarter of field sampling.

The project owner will submit to the CEC CPM a draft report that discusses the results of the impingement, entrainment and source water sampling studies within six months of the end of field sampling, and a final report to the CEC CPM within nine months from the end of field sampling.

BIO-4: The project owner will provide a check for $1,500,000 (One million and five hundred thousand) to the Center for Natural Lands Management (Contact: Ms. Sherry Teresa, Executive Director, 425 E. Alvarado Street, Suite H, Fallbrook, CA 92028-2960, (760) 731-7790) to establish the Huntington Beach Generating Station Trust Account to be used to fund the project's impingement, entrainment, and source water sampling studies. The CEC will authorize the project owner's expenditures from the

fund for the field study protocol development and implementation (impingement, entrainment and source water sampling), data analysis, draft and final report preparation, and implementation of mitigation measures.

Verification: No later than 30 days prior to the start of commercial operation, the project owner will provide written confirmation to the CEC CPM that 1) a check for $1,500,000 has been provided to the Center for Natural Lands Management and 2) that the Huntington Beach Generating Station Trust Account has been established. Any unspent funds, plus all accumulated interest, will be returned to the project owner upon completion of the studies identified in BIO-3, above.

BIO-5: If the entrainment and impingement study determines that significant impacts to one or more species of coastal fish is occurring, the project owner will provide mitigation/ compensation funds for mitigation/compensation for impacts to Southern California Bight fish populations. Upon consultation with the project owner, the mitigation/compensation funds should be used for such things as tidal wetlands restoration, creation of artificial reefs, or some other form of habitat compensation that is sufficient to fully address the species impacts identified in the final report required by Condition of Certification **BIO-3**, above. The CEC CPM, in consultation with the project owner and state, federal and local resource agencies, will determine the amount and final application of the compensation funds. When appropriate mitigation is determined, the project owner will prepare and sign a Memorandum of Understanding (MOU) with the entity that will receive the compensation funds. The MOU will clearly identify acceptable uses of the funds, including an accounting of how the funds will be spent.

Verification: The CPM will review the draft MOU to ensure the wording is clear, meets the terms of the mitigation, and that it is enforceable. The CPM will ensure the MOU is completed within 120 days of determination of the need for mitigation/compensation. The project owner will provide written verification to the CEC CPM that the mitigation/compensation funds have been paid within 30 days after signing the MOU for the disposition of required compensation funds.

COOLING WATER INTAKE IMPROVEMENTS

BIO-6: The project owner shall conduct a study to determine if there is a feasible methodology that would greatly reduce the number of fishes trapped in the intake forebay. If the study determines that a feasible method(s) exists to reduce the number of fishes trapped in the cooling water system the project owner shall implement those methods.

Verification: The project owner will submit a draft study plan to the CEC CPM and resources agencies within 60 days of the date of certification for review and approval. CEC and resource agency staff will provide comments on the draft study plan, and within 90 days of project certification a CEC and resource agency approved final study plan will be provided to the CEC CPM. The project owner will submit an interim report on the progress of the study within 90 days following commencement of the study.

The project owner will submit a draft report that discusses the results of the study within 45 days following completion of the study and will submit a final report within 3 months of completion of the study. If the study determines that a feasible method(s) exists to greatly reduce fish losses in the intake, the project owner will implement the selected methodology upon CEC Huntington Beach Generating Station Project long-term operation reassessment and/or NPDES permit renewal June 30, 2005, and provide verification to the CEC CPM that the agreed to improvements have been implemented.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

BIOLOGY

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Endangered Species Act of 1973 (16 USC, Section 1531 et seq.) and implementing regulations, (CFR, Section 17.1 et seq.)	Designates and provides for protection of threatened and endangered plants and animals and their critical habitat.
National Environmental Policy Act (NEPA) of 1969 (42 USC 4341 et seq.) and implementing regulations (40 CFR Parts 1500-1508)	NEPA must be addressed if an Environmental Impact Statement (EIS) would be required for a Federal action/permit that would have a significant effect on the environment.
Section 404 of the Clean Water Act (33 USC Section 404 et seq.)	Prohibits the discharge of dredged or fill material into waters of the United States without a permit. A 404 Nationwide permit 12 is applicable for utility line placement near waters of the U.S. causing temporary discharge of material.
Executive Order 11990, Protection of Wetlands	Requires governmental agencies take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out their responsibilities.
STATE	
California Endangered Species Act of 1984, (Fish and Game Code, Section 2050 et seq.)	Protect California's endangered, threatened, and rare species.
Streambed Alteration Agreement (Fish and Game Code Section 1603)	Requires the Department to review any project planning to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake prior to commencement.
LOCAL	
Policies set forth in the Huntington Beach General Plan	Protection of terrestrial and marine habitat and species.

CULTURAL RESOURCES

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Cultural Resources Á **Known Site** Á **Unknown Resource**	**MITIGATION**	**None**	**None**	**Yes**
	Construction: No cultural resources have been identified on the project site or within one-half mile of the project site. However, because foundation construction may impact the original ground surface below the imported fill and, because the original ground surface could not be examined during the survey, there is the potential for encountering cultural resources during construction. **MITIGATION:** AES will designate a cultural resource specialist who will prepare a cultural resource recovery plan, provide resource identification training to employees, monitor excavation, and provide for the handling and curation of any recovered cultural resources. Conditions: **CULT - 1** through **CULT – 9.** *References: SA pp. 199-209*			

CULTURAL RESOURCES- GENERAL

This analysis discusses cultural resources, which are defined as the structural and cultural evidence of the history of human development and life on earth. Cultural resources may be found on the ground surface or buried beneath the surface. Evidence of California's early occupation is becoming increasingly vulnerable due to the ongoing development and urbanization of the state. Potential cultural resources are identified through records searches and filed surveys.

Since project development and construction usually entail surface and sub-surface disturbance of the ground, the proposed project has the potential to adversely affect both known and unknown cultural resources. Direct impacts are those which may result from the immediate disturbance of resources, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, or excavation. Indirect impacts are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource materials due to improved accessibility. Cumulative impacts to cultural resources may occur if increasing amounts of land are cleared and disturbed for the development of multiple projects in the same vicinity as the proposed project.

Prehistory

Prehistoric archaeological resources are those resources that resulted from prehistoric human occupation and use of an area. Such resources include sites and deposits, structures, artifacts, rock art, and trails. In California the prehistoric period began over 11,500 years ago and extended into the 18th century when the Euro-Americans first explored and settled the region.

The proposed power plant location yielded no physical evidence of cultural resources. Since construction would entail subsurface disturbance of the ground, the proposed project has the potential to adversely affect previously unknown cultural resources that might exist in the native soils. AES has indicated that 2 to 3.5 feet of fill exist on top of the old ground surface. A concrete slab foundation 3.5 to 4 feet thick covers the fill. Excavations for the new foundations for SCR equipment for Units 3 and 4 are expected to require 3.5 feet for the new slab foundation plus 2 to 3 feet of over-excavation in the

underlying fill material. Impacts would likely not extend into the native soil as a result of excavations for SCR equipment foundations. However, it is possible that the estimated maximum depth of excavation could exceed the minimum estimated existing depth of slab and fill. Therefore, previously unknown prehistoric (as well as historic or ethnic heritage) resources could be affected in these areas. (SA p. 206.)

MITIGATION: To mitigate any potential impact to unknown buried prehistoric resources, AES will designate a cultural resource specialist who will prepare a cultural resource recovery plan, provide resource identification training to employees, monitor excavation, and provide for the recovery, handling and curation of any recovered cultural resources. Conditions: **CUL-1** through **CUL-9**.

Historic

Historic period resources are those resources that resulted from human activity after the beginning of a written historical record. In California the historic period began in the 18th Century when Euro-Americans first explored and settled the region. Historic period resources include archaeological deposits, sites, structures, traveled ways, artifacts, documents, buildings and objects.

The proposed power plant location yielded no physical evidence of historic cultural resources. The absence of sites in the project vicinity indicates a low potential for previously unknown historic and prehistoric archeological resources to be encountered and affected during project construction. There are no historic resources within one mile of the project site. Therefore, the proposed project would not affect the setting of any historic resources. The mitigation applied to unknown prehistoric resources (above) is also applicable to potential unknown historic resources.

Ethnic Heritage

Ethnographic resources are those resources important to the heritage of a particular ethnic or cultural group, such as Native Americans, African, European, or Asian immigrants. They may include traditional resource collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures.

No Native American cultural resource is known to exist at the site. The mitigation applied to unknown prehistoric resources (above) is also applicable to potential unknown ethnic heritage resources.

Cumulative Impacts

The potential for cumulative impacts may be associated with the degree of prehistoric and historic sensitivity. The HBGS site is proposed in an area that is not sensitive for archeological or historical resources. The proposed project is in an area of industrial and mobile home park uses. The Poseidon desalination facility is planned for 3.9 acres of the AES Huntington Beach project site. An impact from this facility would only occur if unanticipated cultural resources are discovered in this area during ground disturbance. There are no previously identified cultural resources on the HBGS site. Although it is always possible that unanticipated cultural resources might be discovered, it is unlikely in this location. Therefore, unless there is a discovery, there will be no cumulative impacts to cultural resources from the proposed project.

Finding

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to cultural resources and all potential cultural resource impacts will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

CUL-1: The cultural resource specialist (CRS) shall be retained to conduct or supervise monitoring activities during ground disturbance that may exceed existing fill and in the vicinity of the selective catalytic reduction (SCR) unit. Prior to the start of ground disturbance (defined in general conditions), in areas where ground disturbance may exceed existing fill and in the vicinity of the SCR, the project owner shall provide the California Energy Commission (Energy Commission) Compliance Project Manager (CPM) with the name and statement of qualifications of its Cultural Resource Specialist (CRS), and an alternate CRS, if an alternate is proposed, who would be responsible for implementation of all cultural resources Conditions of Certification.

The statement of qualifications for the CRS and alternate shall include all information needed to demonstrate that the specialist meets the minimum qualifications specified by the National Park Service, Heritage Preservation Services and shall be qualified by the Register of Professional Archaeologists (RPA). The minimum qualifications include the following:

a. a graduate degree in anthropology, archaeology, California history, cultural resources management, or a comparable field;
b. at least three years of archaeological resource mitigation and field experience in California; and
c. at least one year experience in each of the following areas:

    1. leading archaeological resource field surveys;
    2. leading site and artifact mapping, recording, and recovery operations;
    3. marshaling and use of equipment necessary for cultural resources recovery and testing;
    4. preparing recovered materials for analysis and identification;
    5. determining the need for appropriate sampling and/or testing in the field and in the lab;
    6. directing the analyses of mapped materials; and recovered artifacts;
    7. completing the identification and inventory of recovered cultural resources material; and
    8. preparing appropriate reports to be filed with the receiving curation repository, the SHPO, and the appropriate regional archaeological information center.

The statement of qualifications shall include:

a. a list of specific projects that the specialist has previously worked on;

b. the role and responsibilities of the specialist for each project listed; and
c. the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

Verification: At least 30 days prior to the start of ground disturbance that may exceed the level of fill and in the vicinity of the SCR, the project owner shall submit the name and statement of qualifications of its CRS and alternate CRS to the CPM for review and approval.

At least 10 days, prior to the start of any ground disturbance that may exceed existing fill and ground disturbance in the vicinity of the SCR, the project owner shall confirm in writing to the CPM that the approved CRS will be available and is prepared to implement the cultural resource Conditions of Certification.

At least 10 days prior to the termination or release of a CRS, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and a statement of qualifications of the proposed new CRS.

CUL-2: Prior to the start of ground disturbance, where ground disturbance may exceed existing fill and in the vicinity of the SCR, the project owner shall provide the CRS and the CPM with maps and/or drawings showing the footprint of the SCR and/or areas where disturbance may exceed existing fill. The project owner shall also provide a schedule of anticipated construction in the vicinity of the SCR and in areas where ground disturbance may exceed existing fill. If the footprint or construction schedule in any of these areas of ground disturbance changes, the project owner shall provide maps and/or drawings reflecting these changes, to the CRS within three days and to the CPM within 5 days.

Verification: At least 10 days prior to the start of ground disturbance in the vicinity of the SCR or areas where ground disturbance may exceed existing fill, the project owner shall provide the CRS and the CPM with the maps and/or drawings and a construction schedule of these areas. Copies of maps, drawings or schedules reflecting changes shall be submitted to the CPM within five days of the changes.

CUL- 3: Prior to the start of ground disturbance, in the vicinity of the SCR and in areas where ground disturbance may exceed existing fill, the CRS shall prepare, and the project owner shall submit to the CPM for review and approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts in the event of an unanticipated discovery.

The CRMMP shall include the following elements and measures.

a. Identification of the person(s) expected to perform monitoring tasks (resumes); a description of each team member's qualifications and their responsibilities;
b. A discussion of the requirement that all cultural resources encountered will be recorded and mapped (may include photos) and that all significant or diagnostic resources will be collected for analysis and eventual curation into a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Federal Code of Regulations, Part 79.
c. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

Verification: At least 15 days prior to the start of ground disturbance, in the vicinity of the SCR or in areas that may exceed existing fill, the project owner shall provide the CRMMP, prepared by the CRS, to the CPM for review and approval.

CUL-4: The CRS, alternate or the monitor(s) shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered. If such resources are found, the halting or redirection of construction shall remain in effect until:

- The specialist has notified the CPM and the project owner of the find and the work stoppage;
- The specialist, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and
- Any necessary data recovery and mitigation has been completed.

The specialist, the project owner, and the CPM shall confer within five working days of the notification of the CPM to determine what, if any, determination of significance, data recovery or other mitigation is needed.

If data recovery or other mitigation measures are required, the specialist and team members shall monitor construction activities and implement data recovery and mitigation measures, as needed.

If unearthed cultural resources appear to be Native American in origin, a monitor who traces ancestry to the affected area shall be added to the cultural resource team. The Native American monitor shall be present during any monitoring of cultural resources that appear to be Native American in origin.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

For any cultural resource encountered, the project owner shall notify the CPM within 24 hours after the find.

Verification: At least 5 days prior to the start of ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate and monitor(s) have the authority to halt construction activities in the vicinity of a cultural resource find. Within 3 days of obtaining a Native American monitor, the project owner shall notify the CPM by letter that the monitor has been obtained.

CUL-5: Throughout monitoring and mitigation (if necessary), phases of the project, the CRS, alternate and monitor(s) shall keep a daily log of any resource finds and the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The daily logs shall indicate where and when monitoring has taken place and where cultural resources were found.

The CRS and monitor(s) may informally discuss the cultural resource monitoring and mitigation activities with Energy Commission technical staff.

Verification: Throughout the monitoring activities and during any data recovery (if necessary), the project owner shall ensure that copies of the daily logs are included in the monthly compliance report.

CUL-6: If cultural resources are discovered, the project owner shall ensure that the CRS performs the recovery, preparation for analysis, analysis, preparation for curation, and delivery for curation of all cultural resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.
Verification: If cultural resources are discovered, the project owner shall maintain in its compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists. The project owner shall maintain these files for the life of the project and the files shall be kept available for periodic audit by the CPM. Information as to the specific location of sensitive cultural resource site shall be kept confidential and accessible only to qualified cultural resource specialists.

CUL-7: The project owner shall ensure that the CRS prepares a Cultural Resources Report (CRR). The project owner shall submit the report to the CPM for review and approval.

1 The CRR shall include (but not be limited to) the following:

a. For all projects:

1. description of pre-project literature search, surveys, and any testing activities;
2. maps showing areas surveyed or tested;
3. description of any monitoring activities;
4. maps, including maps of any areas monitored; and
5. conclusions and recommendations.

b. For projects in which cultural resources were encountered, include the items specified under "a" and also provide:

- site and isolate records and maps;
- description of testing for, and determinations of, significance and potential eligibility; and
- a discussion of the research questions answered or raised by the data from the project.

c. For projects regarding which cultural resources were recovered, include the items specified under "a" and "b" and also provide:

- a description of the methods employed in the field and laboratory; a description (including drawings and/or photos) of recovered cultural materials;
- results and findings of any special analyses conducted on recovered cultural resource materials;
- an inventory list of recovered cultural resource materials; an interpretation of the site(s) with regard to the research design; and
- the name and location of the public repository receiving the recovered cultural resources for curation.

Verification: The project owner shall ensure that the CRS completes the CRR within 60 days following the monitoring activity and within 90 days following completion of the analysis of the recovered cultural materials, if cultural materials are discovered. Within seven days after completion of the report, the project owner shall submit the CRR to the CPM for review and approval.

CUL-8: The project owner shall submit an original, an original-quality copy, and a computer disc copy (or other format to meet the repository's requirements), of the CPM-approved CRR to the public repository to receive the recovered data and materials for curation, with copies to the State Historic Preservation Officer (SHPO), the appropriate regional California Historical Resources Information System information center(s). If the report is submitted to any of these entities on a computer disc, the disc files must meet SHPO requirements for format and content.

Protocol: The copies of the CRR to be sent to the entities specified above shall include the following (based on the applicable scenario [a, b, or c] set forth in condition CUL-7):

a. originals or original-quality copies of all text;
b. originals of any topographic maps showing site and resource locations;
c. originals or original-quality copies of drawings of significant or diagnostic cultural resource materials found during pre-construction surveys or during project monitoring and mitigation and subjected to post-recovery analysis and evaluation.
d. photographs of any cultural resource site(s) and the various cultural resource materials recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation. The project owner shall provide the curation repository with a set of negatives for all of the photographs.

Verification: Within 30 days after receiving approval of the CRR, the project owner shall provide to the CPM documentation that the report has been sent to the public repository receiving the recovered data and materials for curation, the SHPO and the regional California Historical Resources Information System information center(s).

For the life of the project the project owner shall maintain in its compliance files copies of all documentation related to the filing of the CPM-approved CRR with the public repository receiving the recovered data and materials for curation.

CUL-9: If cultural resources are discovered, following the filing of the CPM-approved CRR with the appropriate entities, specified in condition CUL-8, the project owner shall ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the project are delivered to a public repository that meets the US Secretary of Interior requirements for the curation of cultural resources. The project owner shall pay any fees for curation required by the repository.

Verification: If cultural resources are discovered, the project owner shall ensure that all recovered cultural resource materials are delivered for curation within 30 days after providing the CPM-approved CRR to the entities specified in CUL-8.

If cultural resources were discovered, the project owner shall provide a document that identifies the public institution and that discussed requirements, specifications or funding needed for the curation of the materials and how they will be met. Also the name and phone number of the contact person at the institution shall be provided.

If cultural resources were discovered, for the life of the project the project owner shall maintain in its compliance files, copies of signed contracts or agreements with the public repository to which the

project owner has delivered for curation all cultural resource materials collected during data recovery and mitigation for the project.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

CULTURAL RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	
National Historic Preservation Act 916 USC 470, et seq.)	Applicable if federal permits are required, Federal funding provided, or lands owned by Federal government. Requires consultation with lead Federal agency, SHPO, & Advisory Council on Historic Preservation.
36 CFR 61 Appendix A	Professional qualification standards/procedures for state and local government historic preservation programs/cultural resources management.
STATE	
California Environmental Quality Act (CEQA) Guidelines (Sections 15064.5 & 15126.4)	Construction may encounter archaeological resources.
Health & Safety Code 7050.5	If Native Americans graves encountered, coroner calls Native American Heritage Commissioner.
Public Resources Code Section 5097.9	If Native American graves are encountered, Native American Heritage Commissioner assigns most likely descendent.

GEOLOGY

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Earthquake	MITIGATION	None	None	Yes
	The project is located in seismic zone 4 and is near the Newport Inglewood Fault zone. The project will be designed and constructed to withstand strong earthquake shaking as specified in the 1998 California Building Code for seismic zone 4. See **FACILITY DESIGN**. *References: SA pp. 275 - 281.*			
Instability	None	None	None	Yes
	Due to groundwater levels under the alluvial soils in the project area, there is a potential of liquefaction. See **FACILITY DESIGN**. *Reference: SA p. 277 - 278.*			
Mineral Resources	None	None	None	Yes
	There are no known surficial geologic resources at the power plant. The Huntington Beach oil field is beneath the site. *References: SA p.279.*			
Fossils (Paleontology)	None	None	None	Yes
	There are no known paleontological resources at the power plant site. *References: SA p. 279.*			
Flood	None	None	None	Yes
	The power plant elevation is not subject to inundation from a tsunami. *Reference: SA p. 279.*			

GEOLOGY – GENERAL

The Huntington Beach Generating Station Retool Project (project) is located on a coastal plain between the northwestern limit of the Peninsular Range physiographic province and the Transverse Range physiographic province. The project is not crossed by known active faults. The Newport-Inglewood Fault Zone is the dominant fault zone within the immediate vicinity of the project. No surface water bodies are located at the project. However, the Pacific Ocean and the Huntington Beach and Talbert Flood Control Channels are nearby. The depth to ground water at the site varies between 5 and 9 feet below existing grade. Site near-surface geology consists of artificial fill and alluvium.

The project site lies at an elevation of approximately 6 to 10 feet above mean sea level. Existing grade at the power plant site is less than 5%. The existing site drainage is sheet flow in nature and drains locally via on-site drainage channels into a retention basin.

Earthquake

The project is located within seismic zone 4 as delineated on Figure 16-2 of the 1998 edition of the California Building Code. Energy Commission staff reviewed the California Division of Mines and Geology publications “Geologic Map of the Santa Ana Sheet” dated 1985 (CDMG 1985) and the “Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions,”

dated 1994 (CDMG 1994). The existing ground surface at the site is highly disturbed. The footprint where the bulk of the retooling project will take place is covered by units 3 and 4 of the HBGS. No active faults are known to cross the power plant footprint.

The closest active fault to the project is the North Branch of the Newport Inglewood Fault Zone. It is understood that the existing power plant was in operation during both the Sylmar moment magnitude 6.4 earthquake and Northridge moment magnitude 6.7 earthquake but was not damaged in either earthquake. The North Branch of the Newport-Inglewood Fault Zone is a type B, right lateral strike slip fault with a slip rate of approximately 1 mm/year (International Conference of Building Officials 1998, Page XV) and is located approximately 0.6 mile from the site.

The South Branch of the Newport-Inglewood fault is suspected of crossing underneath the northeastern fuel oil tank at a depth of approximately 2,370 feet (Bryant 1988). This suspected fault was based upon observations of Bryant on oil well logs in the vicinity of the project (Bryant 1988). The South Branch of the Newport-Inglewood Fault Zone is not considered an active fault. The suspected fault does not manifest itself in the surface within the boundaries of the project.

The peak horizontal ground acceleration for the site is estimated by the applicant to be 0.6g (AES, February 22, 2001) based upon a moment magnitude 6.9 earthquake occurring approximately 0.6 mile east of the site on the Newport-Inglewood Fault Zone. Other faults near the project site include the Palos Verdes-Coronado Fault and the Elsinore Fault. Both of these faults are capable of earthquakes with a magnitude of similar size to the Newport-Inglewood Fault Zone, but the Newport-Inglewwod Fault Zone is considered the fault upon which the design earthquake may occur since it is closer to the site than either the Palos Verdes-Coronado Fault or the Elsinore Fault.

Instability

Liquefaction is a condition in which a cohesionless soil may lose shear strength due to a sudden increase in pore water pressure. Three of the parameters used to assess the potential for liquefaction are the density, depth to groundwater, and the peak horizontal ground acceleration estimated for the site. The depth to groundwater at the project is approximately 5 feet below existing grade. The peak horizontal ground acceleration for the design earthquake is 0.6g, which may be high enough when combined with the shallow ground water and locally loose sands to trigger liquefaction at the project site. The Applicant has acknowledged that the site is located in an area of high liquefaction potential. The project site is located in area mapped as liquefaction hazard zone (CDMG 1997). Energy Commission staff recommend that the AES conduct a detailed liquefaction analysis of the project site and linear facilities prior to the completion of the final design for the project.

Soils that contain a high percentage of expansive clay minerals are prone to expansion, if subjected to an increase in water content. Expansive soils are usually measured with an index test such as the expansive index potential. In order for a soil to be a candidate for testing, the soil must have a high clay content and the clay must have a high shrink-swell potential and a high plasticity index. No test results for the potential for the shrink-swell potential, expansive index potential, or the consolidation or bearing capacity of the soils have been submitted to the CEC.

AES has indicated in the AFC that silty-clay and clayey-silt soils above the water table may be prone to consolidation and/or the absorption of significant amounts of water. Staff suggests that prior to the final design of the foundation for the SCR, AES should have a foundation investigation report conducted and reviewed by the CBO at the time that the construction plans for the SCR are to be reviewed by the CBO. See **Facility Design**.

Fossils - Paleontology

The project is located in the Huntington Beach Oil Field. The project location is designated as Mineral Resources Zone-3, an area of undetermined mineral resources potential (AES 2000a, AFC Page 5.3-

7). The oil within the Huntington Beach Oil Field my be obtained through the use of directional drilling and well construction as well as installation of near-by oil production wells, should the area of the oil field be redeveloped for petroleum production. There are no known paleontological resources at the proposed power plant location.

Regarding paleontological resources, Energy Commission staff reviewed the paleontological resources technical report (AES 2001X, AFC Appendix H) and section 5.8. The project site is highly disturbed and partially covered by artificial fill. No significant paleontological resources were reported by the applicant's paleontologist during the paleontological archive and literature reviews. No paleontological resources were observed at the project site during a site visit on February 21, 2001.

Flooding

A tsunami is a wave of water that may be generated by an earthquake or a large underwater landslide. The estimated run-up for a tsunami was indicated by the Applicant to be approximately 5.7 feet. The epicenter of the 1933 Long Beach earthquake was located in the Pacific Ocean, approximately 3.5 miles southwest of Newport Beach (4 miles south of the project site). Wood recorded that no tsunami was observed after the March 10, 1933 Long Beach earthquake (Wood 1933). The site is in an area designated "A99" on the Federal Emergency Management Agency Flood Map, meaning that the area is to be protected by a federal flood protection system under construction.

Cumulative Impacts

The potential for a significant adverse cumulative impact on paleontological resources, geological resources, or surface water hydrology is unlikely, if the project is constructed according to the Conditions of Certification found in the **Facility Design** and **Soils and Water Resources** sections.

The construction and operation of both the retooling project and the seawater desalination project are not seen to adversely impact geological or paleontological resources or surface water hydrology. The site is not known to have significant paleontological or geological resources in the near surface, but does have an existing on-site drainage system adequate to serve the existing facilities and the desalination project. The site is located in the Huntington Beach Oil Field, and , directional drilling would allow for oil to be recovered from the field beneath the site.

Findings

The project will have no adverse impact with respect to geological and paleontological resources and surface water hydrology. With the implementation of the Conditions of Certification in the **Soil and Water Resources** and the **Facility Design** sections of this Decision, the project conforms to applicable laws related to geological hazards and surface water hydrology. .

CONDITIONS OF CERTIFICATION

None

LAWS, ORDINANCES, REGULATIONS & STANDARDS

GEOLOGY

APPLICABLE LAW	DESCRIPTION
FEDERAL	
There are no Federal LORS related to geological hazards and resources.	N/A
STATE	
Uniform Building Code	Specifies acceptable seismic hazard analysis criteria, grading requirements, excavation requirements, and requirements for the preparation of both the engineering geologic report and the final engineering geologic report.
California Building Code	Specifies acceptable seismic hazard analysis criteria, grading requirements, excavation requirements, and requirements for the preparation of both the engineering geologic report and the final engineering geologic report.
LOCAL	
No local LORS related to geologic hazards and resources.	N/A

PALEONTOLOGICAL RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	
There are no applicable LORS for this section.	
STATE	
California Environmental Quality Act	Defines significant impacts on a fossil site. Project construction might encounter fossil site/remains.
Public Resource Code Section 5097.5	Defines any unauthorized disturbance or removal of fossil site/remains on public land as a misdemeanor. Project construction might encounter fossil site/remains; construction workers might remove fossil remains.
Warren Alquist Act	Requires CEC to evaluate energy facility siting in unique areas of scientific concern. Project construction might encounter fossil site/remains.
LOCAL	
There are no applicable LORS for this section.	

HAZARDOUS MATERIALS

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Transportation	**MITIGATION**	**None**	**None**	**Yes**
	Construction: Hazardous materials delivered during construction will be limited to gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants welding flux, lubricants, paint and paint thinner. No acutely hazardous materials will be transported to the power plant or pipeline construction sites. Operation: There will be two truck deliveries per day to the power plant site of hazardous materials, such as hydrazine, sulfuric acid, hydrochloric acid, gasoline, etc. **MITIGATION:** Deliveries of hazardous materials will be over pre-arranged routes selected for their safety features, including the absence of obstructions and curves, and minimal railroad traffic. Haulers will be specially licensed by the California Highway Patrol. Condition: **TRANS–3.** *References: SA p. 140.*			
Storage & Use	**MITIGATION**	**None**	**None**	**Yes**
	Construction: No acutely hazardous materials related to construction will be used or stored on-site at either the power plant or pipeline route. Some hazardous materials such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants welding flux, lubricants, paint and paint thinner will be used at the construction sites. Given the nature of these substances, the risk of off-site exposure is insignificant. Operation: Hazardous and acutely hazardous material, such as hydrazine, sulfuric acid, hydrochloric acid, and natural gas will be used for power plant operation. On-site maximum inventories of such materials will be well below the threshold amount requiring a Risk Management Plan. Natural gas will not be stored on-site. **MITIGATION:** AES shall not store and use amounts of acutely hazardous materials in excess of proposed quantities. Condition: **HAZ-1**. AES shall prepare a revised Business Plan and Hazardous Materials Safety Plan for local fire and safety agencies. Condition: **HAZ–2 & HAZ-3**. *References: SA pp.89-95.*			
Disposal	**MITIGATION**	**None**	**None**	**Yes**
	Hazardous wastes will include recyclable materials such as used oil, filters, rags, etc. Non-recyclable hazardous wastes include oil absorbents, welding materials, paints, used grit, weak acids, used batteries, and asbestos and are properly disposed at Class I landfills. (See **WASTE MANAGEMENT** section.)			

HAZARDOUS MATERIALS – GENERAL

The purpose of this analysis is to determine if the proposed AES Huntington Beach Retool Project handling, storage, or disposal of hazardous materials at the proposed facility.

This analysis does not address potential exposure of workers to hazardous materials used at the proposed facility. (See **WORKER SAFETY**.) There are specific regulations applicable to protection of workers in general the standards for exposure and methods used to protect workers are very different than those applicable to the general public. Employers must inform employees of hazards associated with their work and workers accept a higher level of risk than the general public in exchange for compensation. Workers are thus not afforded the same level of protection normally provided to the public. Further, special protective equipment and training can be used to protect workers and reduce the potential for health impacts associated with the handling of hazardous materials. Application of this type of mitigation would not be appropriate for the general public.

For additional information regarding hazardous materials transportation, see **TRAFFIC & TRANSPORTATION.** For additional information on hazardous waste disposal, see **WASTE MANAGEMENT**.

Impacts

Though the HBGS site would be using a number of hazardous materials, none of materials exceed specified threshold amounts, above which some action is required by statute based on available information provided by the AES. The USEPA RMP, CalARP and Cal/OSHA PSM programs each individually list threshold-planning quantities for specific hazardous materials. If the quantity of a material on site exceeds the threshold amount, the facility needs to implement chemical accident prevention and preparedness measures that may include a Risk Management Plan (RMP), pursuant to each regulation. The RMP is a detailed engineering analysis of the potential accident factors at a business and the mitigation measures that can be implemented to reduce accident potentials.

According to the above programs, only materials that met certain toxicological, physical and accident criteria were identified and listed. Materials above the thresholds were thought to pose a significant hazard to the community as they could cause death, injury or serious adverse effects to human health and are commonly referred to as acutely hazardous materials. Of the listed materials, only hydrazine, sulfuric acid and hydrochloric acid are identified as being on site as part of the HBGS. AES has indicated that the on-site maximum inventories of these materials are well below the threshold amounts specified by the USEPA RMP, CalARP and Cal/OSHA PSM programs. The project therefore does not require the implementation of chemical accident prevention and preparedness safeguards as required by those programs.

Both sulfuric and hydrochloric acids are very corrosive materials. Both have relatively low vapor pressures and will not readily volatize in the event of a release. AES has indicated that a gallon of hydrochloric acid and less than five gallons of sulfuric acid would be on site. Given these conditions, the potential for any off site significant threat to the public is low.

Hydrazine, in the liquid form, on the other hand, is not only corrosive but also flammable and toxic. It also has a relatively high vapor pressure. AES has indicated that a 35% hydrazine solution would be used and the maximum on-site volume would be 180 gallons. A 3:1 (approximately 35 percent) solution of hydrazine in water renders it low to moderately inflammable. Staff is of the opinion that practices proposed by AES, though prudent, need to be supplemented by additional precautions for hydrazine storage and use. These are outlined in the Conditions of Certification, **HAZ-3**, and should not only limit but also mitigate any potential off-site consequences.

The remaining hazardous materials are those that are common and also pose less off-site risks to the public as they typically exhibit characteristics, which are less hazardous than hydrazine, sulfuric or

hydrochloric acids. Further, hazardous materials storage and use for the HBGS are not proposed to be in bulk quantities or on a scale that would typically be encountered in a chemical production plant or petroleum refinery. Either very small quantities or limited quantities of hazardous materials would be stored or used for the HBGS. By lowering the quantity of a hazardous material stored on site, the severity of the hazard associated with it is reduced.

Natural gas, which will be used as a fuel by the HBGS, poses a fire and/or explosion risk as a result of its flammability. While natural gas will be used in significant quantities, it will not be stored on site. No changes are expected to be needed to the existing piping network for the HBGS. The risk of a fire and/or explosion from natural gas can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices.

Safeguards that are already in place at the generating station would be incorporated into the HBGS. Additional proposed safeguards and measures to greatly reduce the opportunity for, or extent of, exposure to hazardous materials would supplement these in turn. AES has indicated that that it has safety systems that add several layers of protection and defense between hazardous materials and the public as part of accident prevention. These include

- Mechanical integrity programs for inspection of critical equipment
- Preventive maintenance programs to maintain equipment in acceptable working order
- Interlocks to monitor and stop operations if they exceed preset limits
- Concrete dikes and secondary containment to contain spills
- Detectors to identify releases
- Separate storage of incompatible hazardous materials
- Pollution prevention measures such as on going product substitution for more benign or less hazardous materials
- Storage of limited amounts of hazardous materials through administrative controls
- Training programs for plant personnel in hazardous materials handling
- Use of a Safety and Environmental Specialist for hazardous materials management
- Fire extinguishing and spill response equipment for emergencies
- Use of written plans and procedures for hazardous materials management

In the unlikely event of a serious release, an in-house plant hazardous materials response team would be activated. The hazardous materials capabilities of the Huntington Beach Fire Department would also be secured and used, as needed, in such an event. The closest fire station with first responder responsibility is Magnolia Station # 4. Edwards Station # 6 is also available to provide full-fledged hazardous materials response if warranted. Response times are anticipated to be between three to five minutes.

A significant number of modern power plants routinely store and use anhydrous ammonia or aqueous ammonia directly for NOx control purposes and the Energy commission has licensed many such plants. The HBGS is proposing to store urea on site and convert it to vapor phase ammonia in a reactor for NOx control purposes. The maximum amount of ammonia that is anticipated to be present in the urea to ammonia process is approximately 165 pounds at any one time according to AES. Of the 165

pounds, approximately 5 pounds of vapor phase ammonia would be generated from the urea solution, which would have approximately 160 pounds of free ammonia in it. Urea is not considered an acutely hazardous material like anhydrous or aqueous ammonia and is therefore, not a listed material according to any of the above regulatory programs. It is a benign and stable material and its use significantly reduces much of the hazards and risks associated with the use of either anhydrous or aqueous ammonia. The quantity of ammonia in the reactor is well below the thresholds specified according to USEPA RMP (anhydrous ammonia-10, 000 pounds, aqueous –20%-20,000 pounds), CalARP (anhydrous and aqueous ammonia-500 pounds) and Cal/OSHA (anhydrous-10000 pounds, aqueous-44%-15,000 pounds) programs to pose any significant risks to the public.

CUMULATIVE IMPACTS

As proposed, the facility will cause no significant risk of off-site impacts. Thus, the direct impacts of the HBGS will not add to any existing accidental release risks, so no cumulative impacts are possible.

Findings

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to hazardous materials management and all potential adverse impacts related to hazardous materials management will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

HAZARDOUS MATERIALS INVENTORY

HAZ-1: The project owner shall not use any hazardous material not listed, or in greater quantities than those identified by chemical name in Section 5.15.2.2 of the AFC dated December 2000 and the Applicant's data response of February 22, 2001 to Energy Commission's data request # 35, unless approved in advance by the CPM.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility in quantities that require disclosure under City of Huntington Beach Municipal Code, Chapter 17.58.

BUSINESS PLAN

HAZ-2: The project owner shall provide an updated Business Plan.

Verification: At least 45 days prior to the startup of the HBGS boiler/steam turbine Units 3 and 4, the owner shall undertake a hazardous materials floor plan exercise with the Huntington Beach Fire Department, and provide a copy of the revised Business Plan approved by the City of Huntington Beach Fire Department to the CPM.

HAZARDOUS MATERIALS SAFETY PLAN

HAZ- 3: The project owner shall update the existing HBGS Safety Manual, Oil and Hazardous Substances Spill and Prevention Plan, HBGS Emergency Response Plan and facility standard operating procedures to accommodate the changes triggered by the HBGS. The project owner shall ensure that hydrazine is not unloaded using a forklift, that it is stored separately from oxidizers and acids, that a portable hydrazine vapor detector area will be used to sweep the storage area at the start and end of each shift, that the storage area is free of ignition sources and that the storage area is

adequately ventilated, that hydrazine delivery is supervised and monitored by at least one facility staff person who shall stand by with a pressurized water hose and that spill neutralization chemicals are stored in close proximity to the unloading area, as a minimum.

Verification: At least 60 days prior to startup of Units 3 and 4, the project owner shall furnish an updated copy of the Safety Manual and the Emergency Response Plan, to the CPM for approval. Copies of the Plan and Manual shall also be furnished to the City of Huntington Beach Fire Department.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

HAZARDOUS MATERIALS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Air Act (40 CFR 68)	Requires a RMP if listed hazardous materials are stored above threshold quantities (TQ).
Clean Water Act (40 CFR 112)	Requires preparation of an SPCC plan if oil is stored above TQ.
SARA Title III, Section 302	Requires certain planning activities when EHSs are present in excess of TQ. Aqueous ammonia to be used onsite in excess of TQ.
SARA Title III, Section 311	MSDSs to be kept onsite for each hazardous material. Required to be submitted to SERC, LEPC and local fire department.
SARA Title III, Section 313	Requires annual reporting of releases of hazardous materials.
49 CFR 171-177	Governs the transportation of hazardous materials, including the marking of the transportation vehicles.
STATE	
Health & Safety Code §25500, et seq. (Waters Bill)	Requires preparation of HMBP if hazardous materials are handled or stored in excess of TQ.
Health & Safety Code §25531, et seq.	Requires registration of facility with local authorities and preparation of RMP if hazardous materials stored or handled in excess of TQ.
CCR Title 8, Section 5189	Facility owners are required to implement safety management plans to ensure safe handling of hazardous materials.
California Building Code	Requirements regarding the storage and handling of hazardous materials.
California Government Code, Section 65850.2	Restricts issuance of COD until facility has submitted a RMP.
LOCAL	
None	

LAND USE

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
General/Special Plans	None	None	None	Yes
	Power Plant: The power plant site conforms to the public use designation for utilities in the General Plan of the City of Huntington Beach. *References: SA pp. 109 - 124.*			
Zoning	None	None	None	Yes
	The City of Huntington Beach Zoning Ordinance designates the site as General Industrial. The power plant stack height and acreage do not conform to the Zoning Ordinance that was adopted following original construction, but the facility is a recognized pre-existing use. *References: SA p.118*			
Existing/ Planned Uses	None	None	None	Yes
	The Retooling Project will not result in a level of activity or change in the configuration of the Huntington Beach Generating Station that is substantially different from that which has been experience for many years. Nor will the Retooling Project interfere with existing or planned uses surrounding the site. Potential project-related air quality, public health, noise, visual and traffic impacts, including those to neighboring residences, have been mitigated to a level of maximum feasibility or insignificance. *References: SA pp. 121-122*			

LAND USE - GENERAL

Power Plant

The AES facility occupies approximately a 53-acre parcel in the City of Huntington Beach. Much of the city has been developed, with many of the remaining undeveloped parcels committed to development by specific plans and development agreements or preserved for open space. The City's General Plan indicates that the "…fundamental patterns, distribution, and form of development of use have been established" (General Plan, page II-LU-1).

General Plan/Specific Plan

The General Plan for the City of Huntington Beach, adopted May 13, 1996, provides the framework for management and utilization of the City's physical, economic and human resources. The General Plan establishes the location, types, intensity and distribution of land uses throughout the city, including areas within the coastal zone. The General Plan is organized into the following Chapters: Community Development; Infrastructure and Community Services; Natural Resources; and Hazards. In addition, the City has adopted a Coastal Element that serves as the city's Local Coastal Program, and was certified by the Coastal Commission in March 1985. The General Plan designates the site as Public, which includes public utility use.

Zoning Ordinances

The Zoning Ordinance establishes specific zone districts and land use regulations for properties within the city. The project site is located in the City of Huntington Beach, in the General Industrial zone district. See Figure LU-2, City of Huntington Beach, Zoning Designations in the Vicinity of the HBGS Retool Project. (See **LAND USE Figure 1** and **LAND USE Figure 2**).

City of Huntington Beach Urban Design Guidelines

The Urban Design Guidelines implement the Urban Design Element of the General Plan. The Guidelines provide guidance for various types of uses, as well as specific comments regarding lighting, landscaping, and other features of specific sites within the community.

City of Huntington Beach Specific Plans

The proposed project is located in the vicinity of two specific plan areas. While not included within either specific plan area, the project site is identified in the Downtown Specific Plan and Magnolia Specific Plan as reserved for power.

Existing/Planned Uses

The proposed facility is located in the General Industrial Zone District and is consistent with the land use designation in the City of Huntington Beach

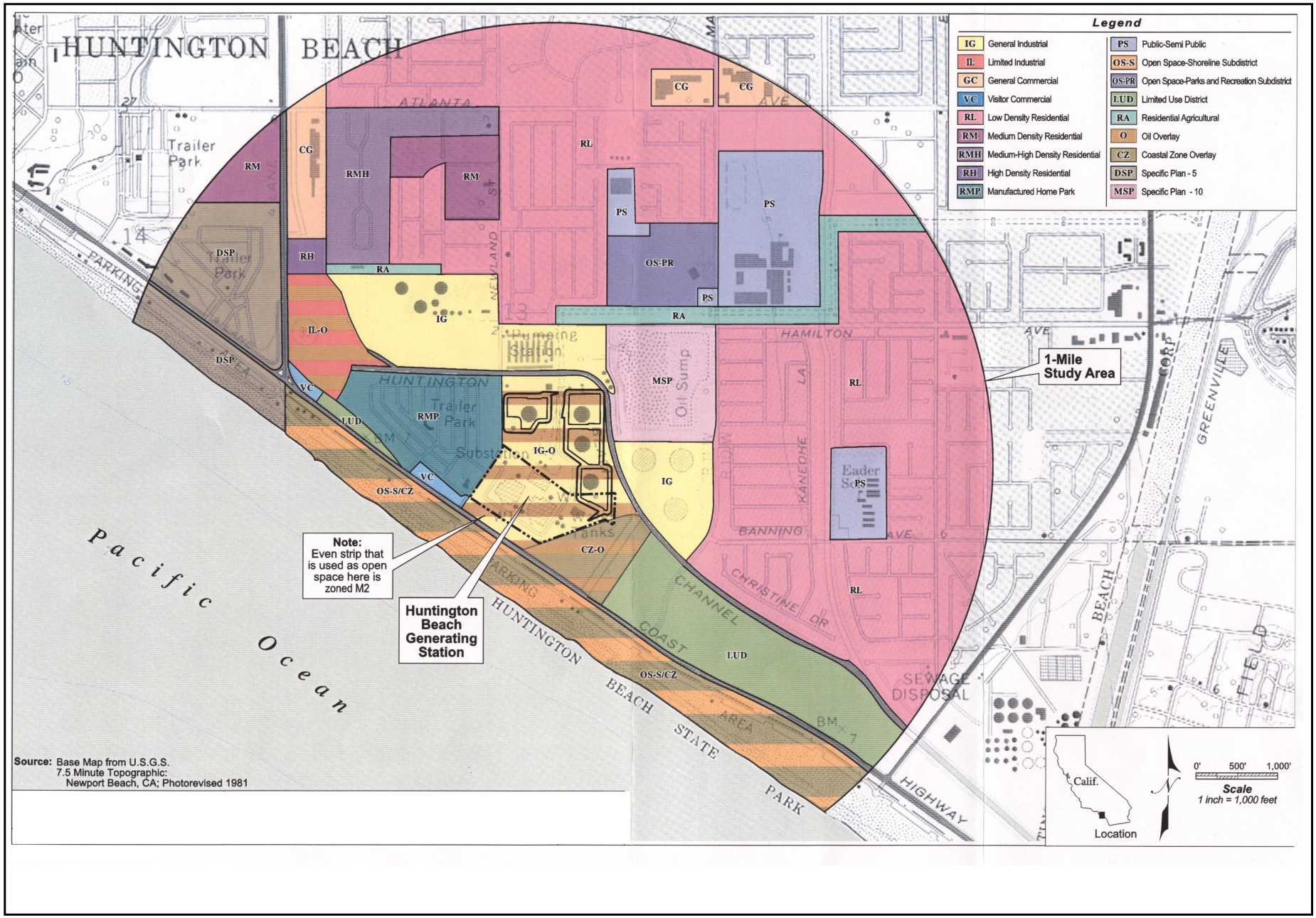
The proposed project would re-tool two power generating units (Units 3 and 4) that were retired from use in 1995. The units had been operated prior to that time. The power plant site is an established use in the vicinity. With the exception of concerns raised in the General Plan and Huntington Beach staff comments regarding stack height and landscaping/screening issues, the project site appears to have co-existed with the variety of other land uses in the project vicinity for a period of years. The proposed project would not result in a level of activity at the site that would be substantially greater than was previously experienced. Total employment, for example, is project to be 43 full-time personnel, while the plant's previous maximum employment was 41 full-time personnel.

The construction, operation and maintenance of Units 3 and 4 would be consistent with existing and planned land uses in the immediate vicinity. Construction and operation of the proposed project, therefore, would not conflict with either existing or planned land uses in the vicinity.

The project would not divide an established community. Land uses in the immediate vicinity of the project include mobile home and single-family residential, industrial, schools and parks, and a small area of commercial. The proposed project would not substantially alter the type or intensity of activity on the project site. Neither construction nor operation of the proposed facility would adversely impact these activities.

LAND USE - Figure 1

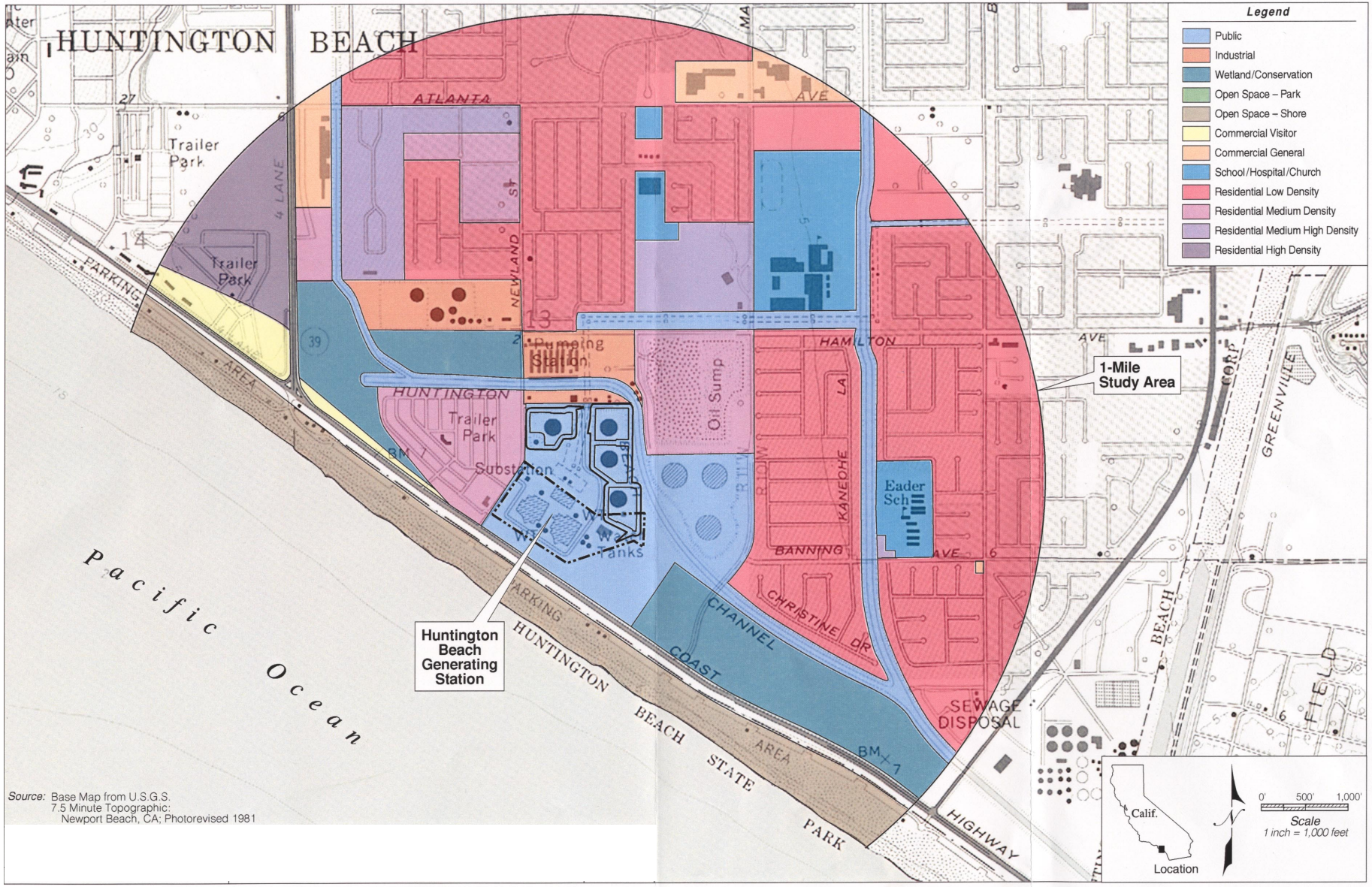
Huntington Beach Repower - Zoning Designations



SOURCE: Figure 5.9-1

LAND USE - Figure 2

Huntington Beach Repower - General Plan



SOURCE: Figure 5.9-2

Cumulative Impacts

The proposed facility is located in a portion of the City of Huntington Beach zoned for such use, and would be consistent with the pattern of development proposed for the site and vicinity. The project is not related to any other project, and would not have the potential to encourage other similar uses. No cumulative impacts in terms of land use have been identified for the project.

Findings

The project conforms to applicable laws related to land use and all potential land use impacts and would be compatible with existing and planned land uses in the vicinity of the project.

CONDITIONS OF CERTIFICATION

There are no conditions of certification.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

LAND USE

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Federal Aviation Administration	Interruption of flight patterns by exhaust stacks.
STATE	
California Coastal Act, Public Resources Code § 30000	The Coastal Commission may designate uses consistent with the Act.
LOCAL	
City of Huntington Beach General Plan	Requires the coordination of land use policies within local cities.
City of Huntington Beach Zoning Ordinance	Implements the General Plan land use provisions.

NOISE

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Loudness/ Time of Day	**MITIGATION**	**MITIGATION**	**None**	**No**

Construction – Power Plant: The closest residential receptors include the Huntington-By-The-Sea RV Resort and the Huntington-By-The-Sea Mobil Resort, located approximately 250 feet and 455 feet, respectively, from Unit 4. See **NOISE – Figure 1**, ML2. The Huntington Beach Municipal Code exempts noise due to construction during the hours of 7 a.m. to 8 p.m., except Sundays and holidays. At any other time, construction is allowed, provided that noise due to it does not exceed Code requirements. Construction activities after 8:00 p.m. are permitted with a variance. Nighttime noise limits at the nearest residential receptor are 55 dBA. Current ambient noise levels at this receptor currently are between 53 to 56 dBA. Nighttime construction, 7 days per week is necessary in order to bring the project's generation on line during the 2001 summer peak loads. Noisy nighttime construction will significantly affect the sleep and peace of nearby residential receptors.

MITIGATION: AES will notify neighboring residents and business owners of impending construction at the power plant site and disseminate a telephone "hotline" number to report any undesirable noise conditions. Condition: **NOISE–1**. Additionally, AES will create a noise complaint process through which AES will attempt to resolve all noise complaints. Condition: **NOISE-2**. Noisy construction work will be restricted to 7 a.m. to 8 p.m. Nighttime construction is limited to "quiet" construction that will not exceed current ambient nighttime noise levels by 5 dBA.. Condition: **NOISE-6**.

It is necessary to clear the steam pipes of debris that would damage the steam turbine blades. This flushing process, known as a steam blow, is traditionally accomplished by venting high-pressure steam to the atmosphere, which would produce a very loud noise at the nearest residential receptor. Use of exhaust silencers on the steam blow piping can reduce the noise, and AES is considering the use of either a new, quieter steam blow process or alternative flushing processes.

MITIGATION: If AES uses high-pressure steam blow, AES will so notify nearby residents and use silencers and limit hours of steam blow. Conditions: **NOISE-3 & NOISE-4.**

Operation: During its operating life, the project will represent essentially a steady, continuous noise source day and night. The noise emitted by power plants during normal operations is generally broadband, steady state in nature. Occasional short-term increases in noise level will occur as steam relief valves open to vent pressure, or during startup or shutdown, as the plant transitions to and from steady-state operation.

MITIGATION: AES will conduct a "before and after" comparative community noise survey once the power plant achieves full operation to determine if the project conforms to applicable daytime and nighttime noise limitations. If necessary, AES will perform additional noise mitigation to achieve applicable noise limitations. Condition: **NOISE-5**.

References: SA pp. 150-154

NOISE – GENERAL

The construction and operation of any power plant creates noise, or unwanted sound. The character and loudness of this noise, the times of day or night that it is produced, and the proximity of the facility to sensitive receptors combine to determine whether the facility would meet applicable noise control laws and ordinances, and whether it would exhibit significant adverse environmental impacts. In some cases, vibration may be produced as a result of power plant operation or construction practices, such as pile driving. The ground-borne energy of vibration has the potential to cause structural damage and annoyance.

The purpose of this analysis is to identify and examine the likely noise and vibration impacts from the construction and operation of the Huntington Beach Generating Station Retool Project (Retool Project), and to recommend procedures to ensure that the resulting noise and vibration impacts would be adequately mitigated to comply with applicable laws, ordinances, regulations, and standards (LORS).

Existing Noise Levels

In order to predict the likely noise effects of the project on adjacent sensitive receptors, AES commissioned an ambient noise survey of the area. The survey was conducted, at various hourly time intervals, at four off-site locations on November 14 and 15, 2000. The noise survey was conducted using two sound level meters, with the microphones mounted approximately five feet above ground level to simulate the average height of the human ear.

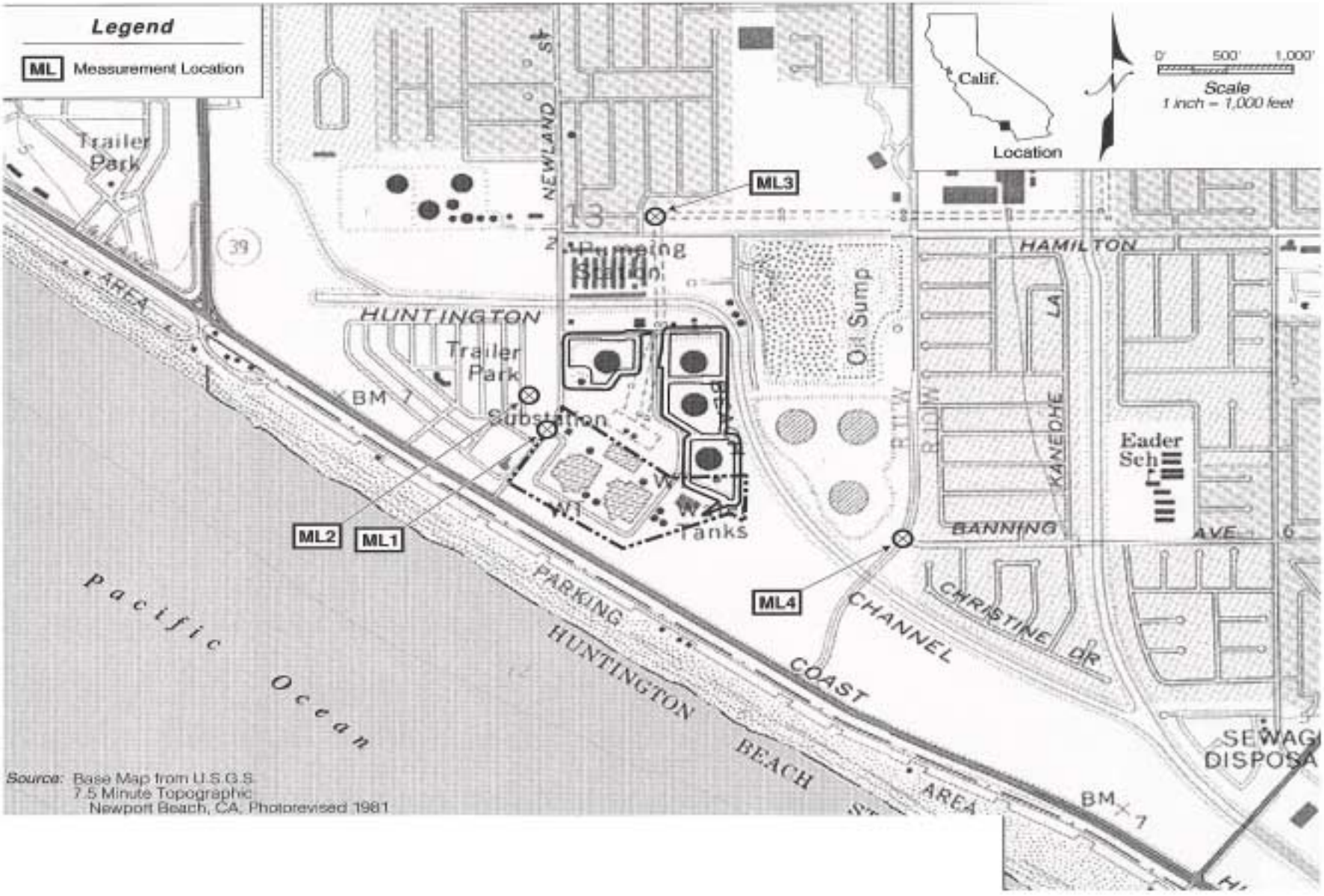
The noise survey monitored existing noise levels at the following four off-site measurement locations (MLs):

- 25 consecutive 1-hour measurements were taken near the west entry gate of the HBGS (Measurement Location 1 [ML1]).
- Three 1-hour measurements, one each during the day, evening, and nighttime periods, were taken at the east boundary of the Huntington By The Sea Mobil Resort (ML2), which is approximately 250 feet west of the project site.
- Three 1-hour measurements, one each during the day, evening, and nighttime periods, were taken at the north side of Hamilton Avenue (ML3), which is approximately 2,000 feet north of HBGS Units 3 and 4.
- Three 1-hour measurements, one each during the day, evening, and nighttime periods, were taken adjacent to the intersection of Banning Avenue and Magnolia Street (ML4), which is approximately 2,300 feet east of the HBGS Units 3 and 4.

During the noise measurement periods, only Unit 1 at the HBGS was in operation. Noise from the HBGS, typical residential noise, and traffic contributed to the noise environment at ML1 and ML2. Noise from vehicular traffic on Hamilton Street contributed to the noise environment at ML3. Noise from vehicular traffic on Magnolia Street and Banning Avenue contributed to the noise environment at ML4 .

NOISE - Figure 1

Huntington beach Generating Station Retool Project



SUMMARY OF MEASURED NOISE LEVELS

Measurement Sites	Measured Noise Levels, dBA		
	Nighttime		CNEL, dB
	Leq	L90	
ML1	59.1	53.8	68.1
ML2	56.4	53.1	63.6*
ML3	51.1	44.4	58.3*
ML4	55.5	47.1	62.6*
* - Applicant's estimate			

Since the Applicant measured noise levels when only Unit 1 was in operation, Energy Commission staff requested additional data describing the expected noise levels at the four measurement sites during operation of Unit 5, which consists of eight "peaking" combustion turbine generator units. The applicant responded with information based upon noise measurements conducted a distance of 200 feet from Unit 5, on January 20, 2000**.**

According to City of Huntington Beach staff, an amplified sound system is used at the existing HBGS to communicate with workers on the plant grounds and equipment. The amplified voices are reportedly audible and distracting to the nearest residents, and have been the source of some complaints to the City.

City staff also noted that, since the prevailing winds are from the ocean, there was some concern that the noise monitoring conducted by the applicant did not include a measurement site directly down wind of the HBGS, near the intersection of Hamilton Avenue and Magnolia Street.

Loudness/Time of Day

Construction – Power Plant: Routine daytime construction, including noisy construction, should not create a significant impact at neighboring residential receptors. The Huntington Beach Municipal Code exempts noise due to construction during the hours of 7 a.m. to 8 p.m., except Sundays and holidays. At any other time, construction is allowed, provided that noise due to it does not exceed Code requirements. However, the nighttime construction required to bring this project on line to provide critically needed electricity to summer 2001 peak loads would, if not mitigated, cause a significant impact on nearby residents. AES contemplates a 20-hour per day, seven days per week construction schedule.

Nighttime and Sunday or federal holiday construction requires a variance under the Huntington Beach Municipal Code. The Energy Commission has determined that without nighttime and Sunday or federal holiday construction the Retool Project will not be available in summer 2001 as contemplated by the Governor's Executive Order D-22-01. Therefore, such construction must be permitted, subject to the substantive requirements of the Municipal Code's variance provisions. The Energy Commission finds that overriding circumstances require nighttime construction, which can be mitigated by restrictions upon "noisy" construction.

MITIGATION: The Energy Commission will permit "quiet" nighttime construction from 6:00 a.m. to 7:00 a.m. and 8:00 p.m. to 2:00 a.m. that will not exceed the pre-construction ambient average noise level measured at the nearest residential receptor (ML2) by more than 5 dBA, which is the threshold of perceived change of noise. The Commission will also permit Sunday and federal holiday construction subject to the same nighttime limitation. Conditions **NOISE-5 & NOISE-6**

Operation – Power Plant: During its operating life, the Huntington Beach Units 3 & 4 Retool Project will represent essentially a steady, continuous noise source day and night. The noise emitted by power plants during normal operations is generally broadband, steady state in nature. Occasional short-term increases in noise level will occur as steam relief valves open to vent pressure, or during startup or shutdown, as the plant transitions to and from steady-state operation. At other times, such as when the plant is shut down for lack of dispatch or for maintenance, noise levels will decrease.

The City of Huntington Beach Municipal Code is potentially more restrictive than the Noise Element of the General Plan, in that the nighttime noise standard for steady-state noise is 50 dBA, unless the ambient noise level is higher. In this case, the ambient noise level is higher. Commission staff's analysis showed that unmitigated project noise levels would likely not comply with the Huntington Beach Municipal Code. Estimated increases in noise level would approach or exceed 5 dBA. In the case of the Huntington-By-The-Sea Mobile and RV Resorts, estimated increases in unmitigated noise level approached 9 dBA. Generally, a change of at least 5 dBA is required before a change in noise level is noticeable. AES has proposed a number of noise mitigation measures, including unspecified engineering noise controls and solid sound barriers along the perimeters of the Huntington-By-The-Sea Mobile and RV Resorts.

MITIGATION: AES will conduct a "before and after" comparative community noise survey once the power plant achieves full operation to determine if the project conforms to applicable daytime and nighttime noise limitations. If necessary, AES will perform additional noise mitigation to achieve applicable noise limitations. Condition: **NOISE-5**.

Cumulative Impacts

Future development near the project site includes two commercial projects and one oilfield remediation project. The potential noise impacts from these projects are traffic related, and thus would not be of consequence when combined with the proposed project. The potential effects of the on-site Poseidon Company Desalination Project will be the subject of a separate environmental assessment.

Findings

With the implementation of the Conditions of Certification, below, all potential noise impacts will be mitigated to insignificance.

Although the facility as conditioned does not comply with the Huntington Beach Municipal Code provisions regarding construction noise emissions, the proposed project is required for the public convenience and necessity. It is necessary to provide the increased electric generating capacity in order to avoid the disruption of electric service and the consequent threats to the health and safety of Californians and that increased capacity must be provided as soon as possible. In the context of California's current shortage of generating capacity for the summer peak season, any delay in the start of operation of the facility beyond July 1, 2001 that can be avoided is unacceptable.

There is no more prudent and feasible means of achieving the above public convenience and necessity than to allow the construction noise to exceed the limits provided in the City's ordinance. Construction must take place 20 hours per day, Sundays and holidays included, in order to complete construction and place the generating capacity on line by the middle of July 2001.

These findings regarding LORS compliance and the Commission's approval of the HBGS Retool Project are consistent with the Governor's direction in Executive Order D-28-01 to "follow substantive requirements designed to achieve environmental protection and the protection of public health and safety to the maximum extent consistent with the prompt execution of those executive orders" [requiring action to improve the supply of electricity].

CONDITIONS OF CERTIFICATION

PRE-CONSTRUCTION NOTICE & CONSTRUCTION NOISE COMPLAINT HOTLINE

NOISE-1: At least 15 days prior to the start of project-related ground disturbing activities, the project owner shall notify all residents and business owners within one-half mile of the site, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish and disseminate a 24-hour "hotline" telephone number for use by the public to report any undesirable noise conditions associated with the construction of the project. This telephone number shall also be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

The project owner shall designate a noise monitoring officer for each construction shift. The noise monitoring officer shall be trained in the use of an audiometer and shall be empowered to halt any construction activities causing or likely to cause an exceedence of the Conditions of Certification herein. The noise monitoring officer shall carry a portable electronic device (such as telephone or pager) to receive any incoming "hotline" call.

The noise monitoring officer shall log each construction noise complaint on a CPM-approved complaint form and attempt to resolve the complaint. For construction noise complaints received from 10 p.m. to 7 a.m., the noise monitoring officer shall take immediate steps to determine whether power plant construction is causing the noise and, if so, reduce the noise level of that activity as quickly as possible not to exceed one hour in order to comply with the Conditions of Certification for nighttime "quiet" construction. The noise monitoring officer, as appropriate, shall measure site fence-line noise levels to assure compliance. If the noise complaint is not resolved to the satisfaction of the complainant, the noise monitoring officer shall provide the Commission's toll free compliance telephone number (800-858-0784).

In the event of construction noise complaints, either from a single affected residence or multiple residences, for two consecutive nights (10 p.m. to 7 a.m.), the project owner shall monitor noise levels from the receptor for no less than the following two nights. If noise levels exceed the Conditions of Certification, the project owner shall either offer off-site noise abatement mitigation at the affected residence or shall establish a program for temporary lodging for the occupants of such an affected residence.

Verification: The project owner shall transmit to the Energy Commission Compliance Project Manager (CPM) in the first Monthly Construction Report following the start of project-related ground disturbing activities, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site and that the noise compliance officers has been designated.

Within 5 days of receiving a complaint for construction noise occurring between 7 a.m. to 8 p.m., the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Huntington Beach, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

Within 24 hours of receiving a complaint for construction noise occurring between 10 p.m. and 7 a.m., the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Huntington Beach, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

OPERATION NOISE COMPLAINT PROCESS

NOISE-2: Throughout the operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- if the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended;
- use the Noise Complaint Resolution Form, or functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise related to the complaint;
- if the noise is project related, take all feasible measures to reduce the noise at its source; and
- submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 5 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Huntington Beach, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

STEAM BLOW MANAGEMENT

NOISE-3: If a traditional, high-pressure steam blow process is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 85 dBA measured at a distance of 200 feet. The project owner shall conduct steam blows only during the hours of 9 a.m. to 5 p.m., unless the CPM agrees to longer hours based on a demonstration by the project owner that offsite noise impacts will not cause annoyance. If a low-pressure continuous steam blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting noise levels and impacts are consistent with the above noise

standards and hours of operation. If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of the CPM.

Verification: At least 15 days prior to the first high-pressure steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected, and a description of the steam blow schedule. At least 15 days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

STEAM BLOW NOTIFICATION

NOISE-4: At least 15 days prior to the first steam blow(s), the project owner shall notify all residents or business owners within one mile of the site of the planned steam blow activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within five (5) days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE RESTRICTIONS

NOISE-5: Prior to initiating construction, the project owner will conduct a 25-hour community noise survey, at the closest residential receptor (applicant's ML2 location). In addition, the applicant shall conduct three one-hour noise measurements during day, evening and nighttime hours in the vicinity of Magnolia Street, approximately halfway between Hamilton and Banning Avenues (ML5).

The project design and implementation shall include noise mitigation measures adequate to ensure that the project operations will not cause noise levels to exceed the noise standards of the City of Huntington Beach Municipal Code, or to exceed the ambient background noise level (L_{90}) at residential receivers by more than 5 dBA.

On-site noise reduction shall be the primary noise mitigation method. If off-site mitigation is additionally required, such as the proposed noise barrier (wall) at the perimeter of the Huntington By The Sea Mobil and RV Resorts, implementation will be subject to the approval of the landowner.

Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct three one-hour noise measurements during day, evening and nighttime hours at sites ML3, ML4 and ML5. In addition, the applicant shall conduct an additional 25-hour community noise survey at ML2. The survey during power plant operations shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints, and to ensure compliance with the Huntington Beach Municipal Code.

If the results from the two noise surveys (pre-construction vs. operations) indicate that the background noise levels (L_{90}) at any of the noise sensitive receptors (ML2, ML3, ML4 or ML5) have increased by more than 5 dBA for any given hour during the measurement period, or if the measured noise levels exceed the standards of the City of Huntington Beach Municipal Code, additional mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

Verification: Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the City of Huntington Beach and to the CPM. Included in the report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 15 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

CONSTRUCTION TIME RESTRICTIONS

NOISE-6: Heavy equipment operation and noisy construction work shall be restricted to the times of day delineated below:

Any Day	7 a.m. to 8 p.m.

Noise due to start-up steam blows shall be restricted to the times of day delineated below:

Any Day	9 a.m. to 5 p.m.

All other construction shall be limited to 20 hours per 24-hour day (6:00 a.m. to 2:00 a.m.), except that the noise levels due to such work that occur outside the hours of 7 a.m. to 8 p.m. shall not exceed the ambient background noise levels (L_{90}) at residential receivers by more than 5 dBA..

Verification: The project owner shall transmit to the CPM in the first Monthly Compliance Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

NOISE

APPLICABLE LAW	DESCRIPTION
FEDERAL	
EPA 1974 Noise Guidelines	Guidelines for State and Local Governments
HUD Circular 1390.2	Directions for noise levels at construction site boundaries not to exceed 65 dBA for 9 hours in a 24-hour period.
29 CFR Section 1910.95 (OSHA Health and Safety Act of 1970)	Exposure of workers to over an 8-hour shift should be limited to 90 dBA.
STATE	
California Vehicle Code §23130 and 23130.5	Regulates vehicle noise limits on California Highways.
8 CCR §5095 et seq. (Cal-OSHA)	Sets employee noise exposure limits. Equivalent to Federal OSHA standards.
LOCAL	
Chapter 8.40, City of Huntington Beach Municipal Code	Establishes City of Huntington Beach noise limits and provides an exemption for weekday and Saturday daytime construction.

PUBLIC HEALTH

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Construction Health Risks	**MITIGATION**	**None**	**None**	**Yes**
	Large construction equipment potentially causes a violation of the California 1-hour NO2 standard and contributes to existing violations of state 24-hour and annual PM10 standards. To minimize NO2 and PM 10 emissions, AES shall require its construction contractors to minimize emissions from diesel powered equipment and use low sulfur fuel. Excavation activities potentially produce dust which can be transported off-site by wind. To control airborne fugitive dust, AES shall water or apply chemical dust suppressants to disturbed areas, apply gravel or paving to traffic areas, and wash wheels of vehicles or large trucks leaving the site. **MITIGATION:** AES shall require construction contractors to tune engines on all heavy equipment and meet EPA off-road equipment emission standards. Condition **AQ-C3**. AES shall use low sulfur diesel fuel. Condition: **AQ-C2.** AES shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Condition: **AQ-C1.** *References: SA pp. 63-70.*			
Cancer Risks	**Insignificant**	**None**	**Insignificant**	**Yes**
	The health risk assessment for non-criteria air pollutants conducted under California Air Pollution Control Officer's Association guidelines finds a maximum exposure to the highest level of carcinogenic project pollutants for 70 years has a cancer risk of 0.312 in a million, well below the 1 in a million benchmark for a potential health impact. *Reference: SA p. 68-69*			
Non-Cancer Risks	**Insignificant**	**None**	**Insignificant**	**Yes**
	The health risk assessment for non-criteria air pollutants conducted under California Air Pollution Control Officer's Association guidelines finds an exposure to the highest level of project pollutants produces a chronic hazard index of 0.00148 and an acute hazard index of 0.0022. Both are below a threshold hazard index of 1.0, and thus not a significant health impact. Ongoing exceedences of the California 1-hour ozone standard and 24-hour PM10 standard suggest a background health hazard. AES has fully mitigated project ozone and PM10 impacts through offsets, thus making the project's ozone and PM10 contributions insignificant in terms of public health impact. (See **Air Quality**) *References: SA pp. 68-69*			

PUBLIC HEALTH – GENERAL

Operating the proposed power plant would create combustion products and possibly expose the general public and workers to these pollutants as well as the toxic chemicals associated with other aspects of facility operations. The purpose of this public health analysis is to determine whether a significant health risk would result from public exposure to these chemicals and combustion by-

products routinely emitted during project operations. The issue of possible worker exposure is addressed in the **WORKER SAFETY** section. Exposure to electric and magnetic fields (EMF) is addressed in the **TRANSMISSION LINE SAFETY AND NUISANCE** section.

The exposure of primary concern in this section is to pollutants for which no air quality standards have been established. These are known as non-criteria pollutants, toxic air pollutants, or air toxics. Those for which ambient air quality standards have been established are known as criteria pollutants. The criteria pollutants are also identified in this section because of their potentially significant contribution to the total pollutant exposure in any given area. Furthermore, the same control technologies may be effective for controlling both types of pollutants when emitted from the same source.

Construction Health Risks

For most projects, the construction-phase impacts of concern in this analysis would be those from exposure to toxic chemicals, either adsorbed on to the wind-blown dust from site grading and other construction-related activities, or emitted from the heavy equipment and vehicles to be used for such construction. The potential for significant impacts is discussed in the **Air Quality** section for the wind-blown dust itself and the other criteria pollutants in terms of (a) exposures above the applicable air quality standards and (b) compliance with SCAQMD-specified mitigation measures. Since no site grading would be associated with this proposed, there would be no on-site exposure to fugitive dust-bound toxic pollutants capable of the effects of concern.

As reflected in the information from the Applicant (AES 2000a, pages 5.2-5, 5.2-43 and Appendix C), the toxic emissions from construction-related tailpipes would be confined within the project site at levels Staff considers insignificant for the three-month construction period involved.

Diesel fuel with a sulfur content of 15ppm or less (referred to as ECD-1) is currently available in the Los Angeles area at a rate of 1 million gallons per day. This is compared to the EPA sulfur limit for on-road diesel fuel of no more than 500ppm. ECD-1 has been tested in a variety of on-road and off-road diesel engines, is shown to significantly reduce the sulfur component of particulate emissions and has an added cost of only 5 cents per gallon. Compared to the use of EPA standard low sulfur fuel (500 ppm or less), the use of ECD-1 would result in an approximately a 30 percent reduction of PM10.

For NO2 construction emissions mitigation, the Staff recommends the Applicant use available EPA certified 1996 low NOx emission heavy-duty construction equipment or demonstrate that their equipment complies with the EPA 1996 diesel engine emission standards. Based on EPA Tier 1 emission factors for new equipment (circa 1996-2002), the use of low NOx equipment has the potential to reduce NOx emissions by at least 15 to 20%. The Applicant will be required to determine the availability of low NOx heavy-duty construction equipment during their construction services procurement process and detail a methodology for including this factor in the construction bid analysis.

AES has indicated that there will be an emergency power generator at the site to provide power in the event of a power outage. Staff recommends that the use of this engine be conditioned to only occur during power outages and that a record of its operations be kept and submitted for compliance verification.

MITIGATION: AES shall require construction contractors to tune engines on all heavy equipment and meet EPA off-road equipment emission standards. Condition **AQ-C3**. AES shall use low sulfur diesel fuel. Condition: **AQ-C2.** AES shall prepare and implement a Fugitive Dust Mitigation Plan to minimize dust during construction. Condition: **AQ-C1.**

Cancer Risks

According to present understanding, cancer from carcinogenic exposure results from biological effects at the molecular level. Such effects are currently assumed possible from every exposure to a carcinogen. Therefore, Energy Commission staff and other regulatory agencies generally consider the likelihood of cancer as more sensitive than the likelihood of non-cancer effects for assessing the environmental acceptability of a source of pollutants. This accounts for the prominence of theoretical cancer risk estimates in the environmental risk assessment process.

For any source of specific concern, the potential risk of cancer is obtained by multiplying the exposure estimate by the potency factors for the individual carcinogens involved. The Energy Commission health staff considers a potential cancer risk of one in a million as the de minimis level, which is the level below which the related exposure is negligible (meaning that project operation is not expected to result in any increase in cancer). Above this level, further mitigation could be recommended after consideration of issues related to the limitations of the risk assessment process.

AES conducted a health risk assessment for the project-related non-criteria pollutants of potential significance. This assessment was conducted according to procedures specified in the 1993 California Air Pollution Control Officer's Association (CAPCOA) guidelines for sources of this type. The following non-criteria pollutants were considered with respect to a possible cancer risk: acetaldehyde, benzene, 1,3 butadiene, formaldehyde, PAHs and propylene oxide.

Energy Commission staff concurred with AES's findings with regard to the numerical public health risk estimates expressed numerically in terms of a cancer risk for estimated levels of the carcinogenic pollutants.

The highest cancer risk possible for the exposed individual was calculated as 0.312 in a million. This risk was calculated using existing procedures, which assume that the individual would be exposed at the highest possible levels to all the carcinogenic pollutants from the project for 70 years. The risk is much below Energy Commission staff's de minimis level of 1 in a million, as well as SCAQMD's acceptable level for power plant sources.

CURE asserts that the health risk assessment underestimates health risk since it uses emission factors published by the Ventura County Air Pollution Control District for small auxiliary boilers, not utility scale boilers. CURE claims that if metals were included in the emission factors, the cancer risk would increase to 27 in one million. CURE seeks a condition to require a source test which would include facility-specific toxics emission data, including metals. The Commission gives weight to the fact that both the independent Energy Commission staff and the SCAQMD accept the use of the same emission factors found in the Staff Assessment and the Preliminary Determination of Compliance. Given that the calculated risk was well below 1 in a million, let alone the significance threshold, the Commission is satisfied that the cancer risk has been appropriately assessed.

Non-Cancer Risk

AES's health risk assessment reviewed the following non-criteria pollutants with respect to non-cancer effects: acetaldehyde, acrolein, ammonia, barium, benzene, 1,3 butadiene, cadmium, chromium, copper, cyanide, ethylbenzene, formaldehyde, hexane, lead, manganese, mercury, naphthalene,

phenols, polycyclic aromatic hydrocarbons (PAHs), propylene, propylene oxide, sulfates, toluene, xylenes, and zinc.

A chronic hazard index of 0.00148 was calculated for the maximally exposed individual, with and acute hazard index of 0.0022 calculated for the same individual. These indices are below the levels of potential health significance (hazard index 1.0), suggesting that no significant health impacts would likely be associated with the project's non-criteria pollutants.

Cumulative Impacts

When toxic pollutants are emitted from multiple sources within a given area, the cumulative, or additive, impacts of such emissions could, in concept, lead to significant health impacts within the population, even when such pollutants are emitted at insignificant levels from the individual sources involved. Analyses of such emissions have shown, however, that the peak impacts of such toxic pollutants are normally localized within relatively short distances from the source. Toxic pollutant levels normally fall within ambient background levels beyond the points of maximum impacts. Therefore, potentially significant cumulative impacts are only expected in situations where new sources are located adjacent to one another. Since no significant sources of non-criteria pollutants are presently located or proposed for the project's impact area, no exposures of a cumulative nature are expected during the operational phase.

Finding

With the implementation of the Conditions of Certification in other sections of this Decision, the project conforms with applicable laws related to public health, and all potential adverse impacts to public health will be mitigated to insignificance.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

PUBLIC HEALTH

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Air Act, §109 and 301(a). 42 USC §7401 et seq. and 40 CFR 50	Established air quality standards to protect the public health from exposure to air pollutants.
Clean Air Act §112(g), 42 USC §7412, and 40 CCR 63	Requires review of new or modified sources prior to promulgation of the standard and establishes emissions standards for HAP from specific source types including gas turbines. AES will not be a major source of HAP and hence is not subject to these provisions at this time.
STATE	
Health and Safety Code §25249.5 et seq. (Safe Drinking Water and Toxic Enforcement Act –Proposition 65)	Requires posting of facilities that have chemicals known to cause cancer and public notification of significant risks.
Health and Safety Code §39650-39625	Provides for a special statewide program directed by the ARB to evaluate the risks associated with emissions of chemicals designated as TAC and to develop and mandate methods to control these emissions.
Health and Safety Code §44300 et seq. (Air Toxics “Hot Spots” Information and Assessment Act –AB2588)	Requires facilities that emit listed criteria or toxic pollutants to submit emissions inventories to the local air district. Such facilities may also be required to conduct a health risk assessment.
LOCAL	
SCAQMD Rule 402 (Health and Safety Code §41700	Prohibits discharge of air contaminants that cause injury, detriment, nuisance or annoyance to the public, or that damage businesses or property.
SCAQMD Rule 1401	Establishes allowable risks for new or modified sources to TAC emissions.
SCAQMD Rule 1404	Prohibits the use of hexavalent chromium as a water treatment in cooling towers.

SOCIOCECONOMICS

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Employment	None	None	None	Yes
	Construction: The construction workforce, peaking at 548 workers, will come from a pool of approximately 82,000 construction works in the Orange County area; thereby, creating no employment or population impacts. The project will benefit local employment directly. Operation: The permanent operation workforce of 43 employees will come existing employees or from a pool of surplus plant operations workers in the area. Only one to four new employees may come from outside the study area, which causes no employment or population impact. *References: SA p. 222*			
Housing	None	None	None	Yes
	Construction: Most of the construction workforce, peaking at 548 workers during the 3-month construction period, is expected to commute to the project. There are sufficient housing resources for any non-commuting workers including hotels, motels, and recreational vehicle parks. Operation: Most (90 to 95 percent) of the operation workforce, estimated at 43 permanent employees, is expected to commute to the project. There are sufficient housing resources for any permanent employees to relocate to the project without impacting housing in the study area. References*: SA p. 222*			
Schools	None	None	None	Yes
	Most of the construction workforce and permanent operators is expected to commute to the project. There would be no impact to the school districts in Huntington Beach or nearby areas. References: *SA p. 222.*			
Utility/Public Services	None	None	None	Yes
	Construction: Construction is not expected to create an additional demand for utilities, including landfill disposal or wastewater treatment. Operation: The operation of the power plant increases the potential risk for the use of fire fighting services. Through the development agreement between AES and the City of Huntington Beach, AES will pay a fee for fire fighting services. *References: SA p. 224.*			

Economy/ Government Finance	**None**	**None**	**None**	**Yes**
	Construction: Construction payroll is approximately $43 million. Cost of locally purchased materials is $5 million. To assure the project will benefit local employment directly as well as the local and regional economy through the multiplier effect in the purchase of goods and services AES will recruit workers and make purchases to the extent possible. **MITIGATION:** AES and its contractors shall recruit employees from the local area to the extent permitted by law and to the extent qualified personnel are available. Condition: **SOCIO-1**. Operation: Operation payroll for first year is approximately $1.5 million. Capital cost is $130 million. The HBGS generates about $1 million in local tax revenues. With the Retool Project improvements, Huntington Beach should receive an additional $187,000 in property tax revenue, with the High School and Elementary School Districts receiving $264,000 and $268,000 annually, respectively. *Reference: SA p.224*			
Environmental Justice	**None**	**None**	**None**	**Yes**
	Minority/Low Income Population: According to 1990 Census data, approximately 10% of the census tracts within a 6-mile radius had a minority population of 25 to 49% and no tracts had a minority population exceeding 50%. According to Claritas projections of 2000 census data, there are now three census tracts (out of 80) with a minority population exceeding 75%, and five additional tracts with a minority population between 50 and 74%. However, none of these are the tracts closest to the project site. The low income population proportion is low and does not approach the standard of a "low income" community. Disproportionate Impacts: There are no significant project-related unmitigated adverse environmental or public health impacts. Potential air quality, public health, and hazardous materials handling impacts to the public have been mitigated to less than significance through the Conditions of Certification in this Decision. The location of the project at an existing power plant site causes no significant land use impact. There are no significant cumulative project impacts, nor adverse impacts that fall disproportionately upon minority or low-income populations. *Reference: SA pp. 225-226.*			

SOCIOECONOMICS – GENERAL

The socioeconomic impact analysis evaluates the potential direct and cumulative project-induced impacts on community services and/or infrastructure including schools, medical and protective services and related community issues such as environmental justice.

The project is at the existing Huntington Beach Generating Station at 21730 Newland Street, southeast of the intersection of Newland Street and Pacific Coast Highway in the City of Huntington Beach.

The study area (defined as the five-county southern California area – Los Angeles, Orange, Riverside, San Bernardino, and Ventura) in the AFC was identified using the Electric Power Research Institute's report titled "Socioeconomic Impacts of Power Plants," which finds among other things that construction workers will commute as much as two hours to construction sites from their homes rather than relocate. Additionally, the report states operational workers will commute as much as one hour to a power plant site from their homes rather than relocate.

Employment

AES expects that most construction workers would commute daily two hours or less each way to the project site. Most construction workers would not be expected to relocate during construction. During the engineering, procurement, and construction periods extending nine months, peak employment would be 548 (only 0.7% of all construction jobs in Orange County) workers, including 538 craft workers and 10 contractor staff. Employment during operation (or permanent employees) is approximately 10 full-time workers.

The construction and operation of the project would not have a significant impact on employment either regionally or locally. In general, full-time jobs have a multiplier effect on the local and regional economy by supporting additionally indirect job growth. It is estimated that two to three indirect jobs would be supported by each construction job, such as those that would be generated by the proposed project. A net benefit is therefore likely to occur.

Housing

The demand for housing within the study area is not expected to increase appreciably as a result of the proposed project because the vast majority of the work force is expected to commute from within a two-hour distance of the project site. A small percentage of construction workers may choose to commute on a weekly basis; however, there are adequate hotels/motels, recreational vehicle parks, and campgrounds within the local project vicinity to accommodate these workers. The construction of the proposed project will not significantly increase the demand for housing.

Schools

Due to the large resident labor force available for construction and small permanent labor force that will operate the proposed project, there will not be any enrollment impact on the Huntington Beach or other

nearby school districts. One-time school impact fees would not be generated by the project since no additional square footage will be added.

Utility/Public Services

Construction and operation of the project is not expected to create a demand for utilities that cannot be met by local utility providers. There is adequate water, natural gas and electrical supplies, as well as available landfill space to meet the project's construction and operational demands.

Project construction and operation may result in a potential for increased calls to the Huntington Beach Police and Fire Departments. However, the construction and operation of the retool project is not expected to result in any significant impacts on emergency services. (SA p. 224.)

Economy/Government Finance

AES estimates that the total capital cost of the proposed project is $130 million. The total construction payroll is estimated to be $43 million. The operational payroll for the project is estimated to be approximately $1.5 million annually. This estimate excludes payroll taxes. To assure the project will benefit local employment directly as well as the local and regional economy through the multiplier effect in the purchase of goods and services AES will recruit workers and make purchases to the extent possible.

MITIGATION: AES and its contractors shall recruit employees from the local area to the extent permitted by law and to the extent qualified personnel are available. Condition: **SOCIO-1**.

To assure qualified workers, CURE and Local 246 of the Utility Workers of America seek an additional condition that each contractor hire a journey level workforce of which at least 50 percent of the workers are graduates on an approved apprenticeship program. With the imminent commencement of construction of this project pending certification, the Commission does not believe it prudent to affect construction worker hiring at this time.

The proposed project is anticipated to provide an estimated $200,000 in local property tax revenue. The High School and Elementary School Districts will receive $264,000 and $268,000 annually, respectively. Project construction and operation would create a beneficial impact on both the study area's economic base and fiscal resources through employment of both local and regional workers.

Tourism and beach usage are important to the Huntington Beach economy. Past beach closures due to bacteria in the surf zone have significantly affected the economy of Huntington Beach. AES will undertake a study to determine whether the thermal discharge into the ocean is contributing to the presence of bacteria in the surf zone. Condition: **WATER QUALITY-3**.

Environmental Justice

Presidential Executive Order 12898, entitled "Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental

justice as part of this mission. The order requires the US Environmental Protection Agency (EPA) 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, the Energy Commission follows the U.S. Environmental Protection Agency's guidance in conducting a two-step environmental justice analysis. The analysis assesses:

- Whether the population in the area potentially affected by the proposed project is more than 50 percent minority and/or low-income, or has a minority or low-income population percentage that is meaningfully greater than the percent of minority or low income in the general population, or other appropriate unit of geographic analysis; and
- Whether significant environmental impacts are likely to fall disproportionately on the minority and/or low-income population.

Commission staff determined the affected area for this environmental justice analysis to be the area within a six-mile radius of the proposed project site. This area corresponds to the area analyzed for potential air quality and public health impacts.

Federal guidance does not give a percentage of population threshold to determine when a low-income population becomes recognized for an environmental justice analysis. The Energy Commission uses the same greater than 50 percent threshold that is used for minority populations, as well as a "meaningfully greater" percentage population.

According to 1990 Census data, approximately 10% of the census tracts within a 6-mile radius had a minority population of 25 to 49% and no tracts had a minority population exceeding 50%. According to Claritas projections of 2000 census data, there are now three census tracts (out of 80) with a minority population exceeding 75%, and five additional tracts with a minority population between 50 and 74%. However, none of these are the tracts closest to the project site. The low income population proportion is low and does not approach the standard of a "low income" community. Therefore, there is no significant low-income environmental justice issue associated with the proposed project. In addition, based on previous power plant siting projects, no significant adverse impact within a 6-mile radius are expected. (See **SOCIOECONOMICS Figures 1 and 2**).

Cumulative Impacts

Cumulative impacts were assessed by researching other large-scale construction projects in the study area. There are on-going projects in Huntington Beach that may overlap with construction of the HBGS Retool Project. The only potential cumulative socioeconomic impact would be the possible shortage of workers in some trades. However, because of the available large labor force in Orange County and the five-county study area, there would be an adequate number of workers.

Similarly, there were no cumulative impacts identified from operation of the proposed project, as most permanent project personnel will be hired from the five-county area and would not likely relocate.

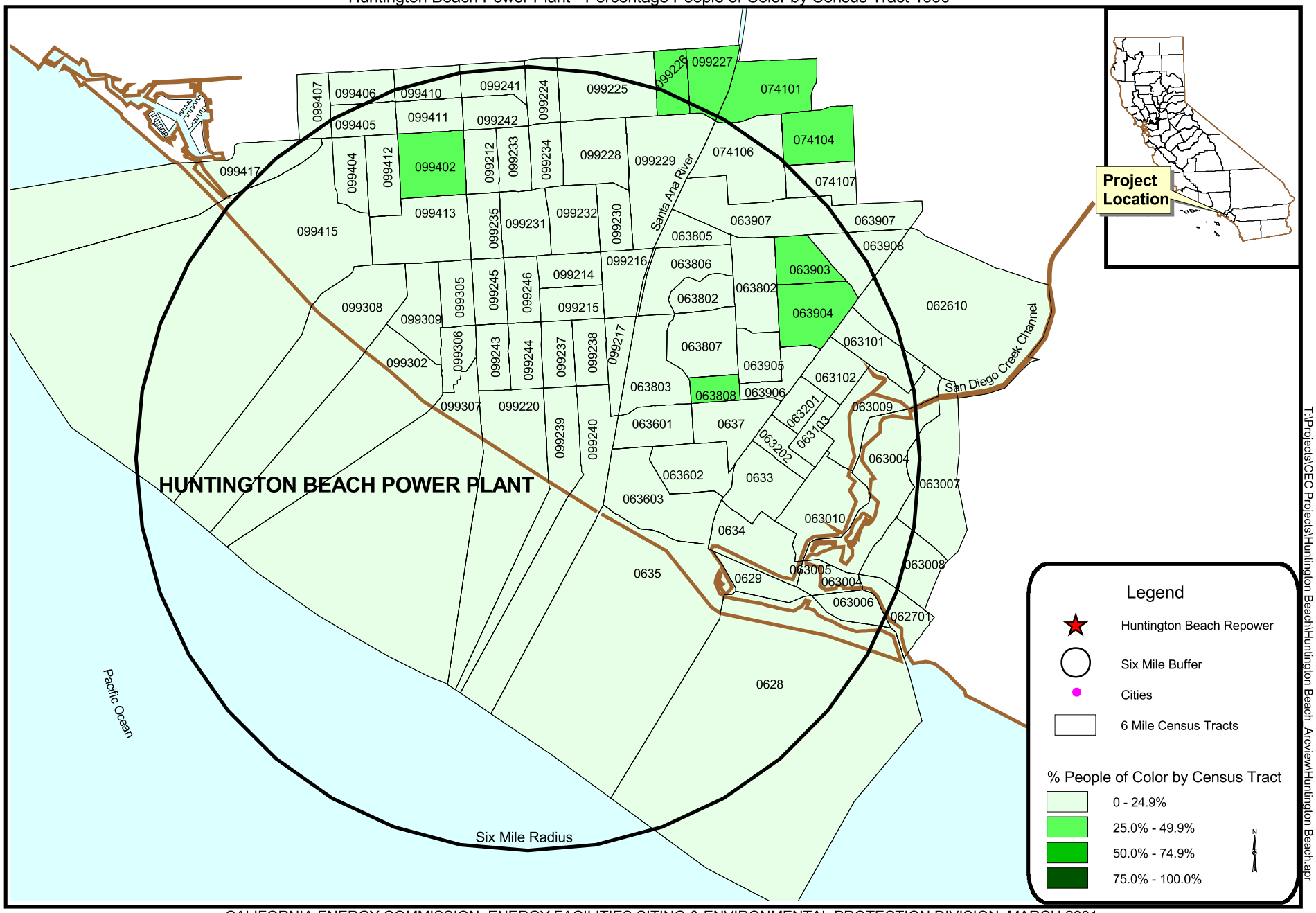
Consequently, no significant cumulative impacts on the socioeconomics of the study area are anticipated to occur due to operation.

Findings

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to socioeconomic matters and all potential socioeconomic impacts will be mitigated to insignificance.

SOCIOECONOMICS - FIGURE 1

Huntington Beach Power Plant - Percentage People of Color by Census Tract 1990



CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, MARCH 2001

SOURCE: California Energy Commission Statewide Transmission & Power Plant Maps 2001, 1990 Census TIGER Data

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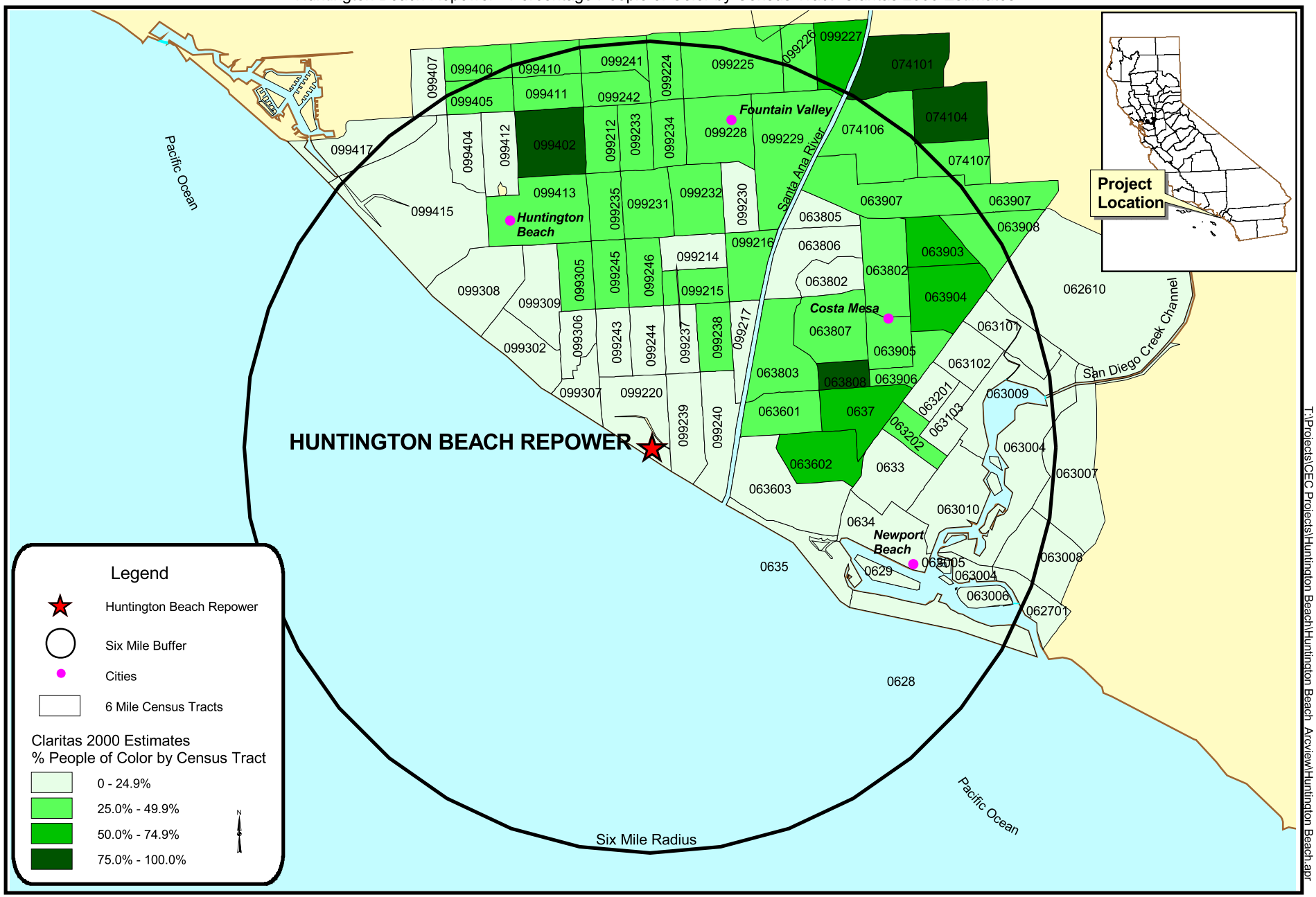
DEMOGRAPHIC - FIGURE 2

Huntington Beach Repower - Percentage People of Color by Census Tract Claritas 2000 Estimates



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CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, JANUARY 2001

SOURCE: California Energy Commission Statewide Transmission & Power Plant Maps 2001, Claritas 2000 Estimates Data

CONDITIONS OF CERTIFICATION

LOCAL RECRUITMENT

SOCIO-1: Not less than 35% of the labor used during construction related to the retooling project shall be drawn from the local labor force contained within Orange and Los Angeles Counties. At least 50% of the labor force used during construction shall consist of California residents.

Verification: At least thirty (30) days prior to the start of construction activities, the project owner shall submit to the Energy Commission Compliance Project Manager (CPM) copies of guidelines stating hiring requirements and procedures. The project owner shall retain copies of all contractor and subcontractor contracts onsite for CPM inspection.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

SOCIOECONOMICS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Executive Order 12898	Executive Order 12898, "Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations," focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission. The Order requires the US Environmental Protection Agency (EPA) 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.
STATE	
California Government Code 65995-65997	Includes provisions for levies against development projects in school districts. The Unified School District will implement school impact fees based on new building square footage.
LOCAL	

TRAFFIC & TRANSPORTATION

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Congestion	**MITIGATION**	**None**	**None**	**Yes**
	Power Plant Construction: Truck deliveries to the site of construction equipment and supplies, estimated at 5-6 deliveries per month, are within the design limits of Interstate 405, Beach Boulevard, the Pacific Coast Highway, and Newland Street. Commuting construction workers, estimated to peak at 530 workers, could cause an insignificant level of congestion during peak commute hours. **MITIGATION:** AES's Traffic Management Plan can mitigate these traffic impacts by measures such as staggered arrival and departure times, car-pooling and use of alternative routes. Condition: **TRANS–5**. Power Plant Operation: AES expects 14 truck deliveries per month for materials associated with project operation and a permanent operating labor force of approximately 43 full-time employees, working and commuting over three shifts. Neither operation deliveries nor commuting will impact traffic on local streets or Interstate 405. *References; SA pp.134-136.*			
Safety	**MITIGATION**	**None**	**None**	**Yes**
	Construction: Construction will require the use of large vehicles, occasionally including oversize or overweight trucks. Additionally, there will be deliveries to the power plant site of hazardous construction substances, such as gasoline, diesel fuel, oils, solvents, cleaners, paints, etc. **MITIGATION:** Caltrans permits control vehicle size and weight. Condition: TRANS–1. California Highway Patrol and Caltrans permits control transport of hazardous substances. Condition: **TRANS–3**. Operation: There will be 4 truck deliveries or more per month to the power plant site of hazardous materials, such as urea, sulfuric acid, sodium hypochlorite, sodium hydroxide, gasoline, etc. Deliveries of hazardous materials will be over pre-arranged routes selected for their safety features, including the absence of obstructions and curves. **MITIGATION:** Hazardous materials haulers must be specially licensed by the California Highway Patrol. Condition: **TRANS–3;** See also **Hazardous Materials** section. References:.			

Parking	None	MITIGATION	None	Yes
	Construction: Designated off-street parking near the power plant site is being made available for construction workers. **MITIGATION:** AES's will mitigate construction parking impacts by providing a designated parking area and restricting residential on-street parking. Condition: **TRANS-6.** Operation: Adequate on-site parking is available for power plant personnel. No parking will be required for operation of the pipeline. *Reference: Site Observation.*			

CONSTRUCTION TRAFFIC – GENERAL

The potential traffic impacts of the project can arise from the construction of the power plant, which will cause additional trips by construction workers and delivery trucks to and from the site, increasing daily traffic volumes on the freeways and local streets.

The potential impact of the project is measured by the LOS (Level of Service) of the surrounding roadway segment based upon average daily traffic volume. LOS is measured in a range from LOS A to LOS F. A LOS of A refers to little or no congestion, whereas LOS F is heavy congestion with significant delays and significantly reduced travel speeds.

Congestion

Power Plant Construction: Workers are generally expected to access the project from Interstate 405 to State Highway 39 south onto State Highway 1 (Pacific Coast Highway) and exit at Newland Street. Hypothetically, if all the maximum workforce of 530 workers traveled the same route, levels of service would drop below the threshold of LOS D at all the signal controlled intersections and LOS C for other roadway segment links. During the peak construction period, project-related vehicle traffic will affect the Beach Boulevard and Pacific Coast Highway, resulting in traffic increases of 1 to 3 percent. The main local road impacted by the project is Newland Street.

Construction traffic will require approximately 16 to 20 heavy truck deliveries to the project site during the 3-month construction period

MITIGATION: AES shall prepare a Transportation Management Plan so that construction and commute traffic do not create unacceptable congestion impacts. Condition: **TRANS – 5.**

Power Plant Operation: Operation of the generating plant will require an additional labor force of approximately 10 full-time employees, in addition to the current 33 employees.

The likely preferred route for these employees will be Interstate 405 to State Highway 39 south onto State Highway 1 (Pacific Coast Highway) and exit at Newland Street. The additional traffic associated with the operating personnel will not change the existing LOS. Therefore, transportation impacts associated with the power plant operating personnel are not expected to be significant.

The facility will have truck traffic associated with the deliver of various cleaning chemical, gasoline and diesel fuel, lubricants, urea, sulfuric acid and other hazardous material associated with plant operation. It is expected that there will be 14 truck deliveries per month to the operating facility. It is assumed that the truck routes would travel to the plant site by Interstate 405 to State Highway 39 south onto State Highway 1 (Pacific Coast Highway) and exit at Newland Street. These additional truck trips along with the vehicle trips associated with operational personnel would not change the LOS.

Safety

Construction: Construction will require the use of large vehicles, occasionally including oversize or overweight trucks. Additionally, there will be deliveries to both the power plant site and the pipeline sites of hazardous construction substances, such as gasoline, diesel fuel, oils, solvents, cleaners, paints, etc.

MITIGATION: Caltrans permits control vehicle size and weight. Condition: **TRANS–1**. California Highway Patrol and Caltrans permits control transport of hazardous substances. Condition: **TRANS–3**.

Operation: There will be truck deliveries to the power plant site of hazardous materials, such as urea, sulfuric acid, sodium hypochlorite, sodium hydroxide, gasoline, etc.

MITIGATION: Hazardous materials haulers must be specially licensed by the California Highway Patrol. Condition: **TRANS–3** (See also **Hazardous Materials** section.)

Parking

Construction: Limited off-street parking is available for construction workers and delivery trucks at the power plant site. AES has arranged for off-site parking across the Pacific Coast Highway in the State Beach parking lot through June 30, 2001.

MITIGATION: AES's will mitigate construction parking impacts by providing designated off-site parking and restricting parking within public rights-of-way along the Pacific Coast Highway, Beach Boulevard, and Newland Street. Condition: **TRANS-6.**

Operation: Adequate on-site parking is available for power plant personnel.

Cumulative Impacts

Although the City of Huntington Beach has a number of proposed and ongoing projects involving roadway construction, the implementation of the Conditions of Certification would avoid cumulative construction traffic impacts.

Findings

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to traffic and transportation and all potential adverse traffic and transportation impacts will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

OVERWEIGHT & OVERSIZE VEHICLES

TRANS-1: The project owner shall comply with Caltrans and the City of Huntington Beach on limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any oversize and overweight transportation permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

LOCAL ENCROACHMENT PERMITS

TRANS-2: The project owner or its contractor shall comply with Caltrans and City of Huntington Beach limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from all relevant jurisdictions.

Verification: In Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during the reporting period. 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.

LICENSED HAZARDOUS MATERIALS HAULERS

TRANS-3: The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials and all regulations for the transport of hazardous materials are observed.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of

hazardous substances. The project owner shall maintain copies of these permits at the project site for inspection by the CPM.

ROADWAY REPAIRS

TRANS-5: Following completion of HBGSR project construction, the project owner shall repair any damage to Newland Street north of State Highway 1 (Pacific Coast Highway) to the Main Gate entrance to the Huntington Beach Generating Station incurred during construction to the road's pre-project construction condition.

Protocol: Prior to start of construction, the project owner shall photograph, videotape or digitally record images of Newland Street from State Highway 1 to the HBGSR Main Gate entrance (project entrance). The project owner shall provide the Compliance Project Manager (CPM), the City of Huntington Beach and Caltrans (as necessary) with a copy of these images. Prior to start of construction, the project owner shall also notify the City of Huntington Beach and Caltrans about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction related activities associated with other projects.

Verification: Within 30 days after completion of the retool project construction, the project owner shall meet with the CPM, the City of Huntington Beach and Caltrans (as needed) to determine and receive approval for the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near original condition as possible. Following completion of any regional road improvements, the project owner shall provide to the CPM a letter from the City of Huntington Beach and Caltrans if work occurred within their jurisdictional public right of way stating their satisfaction with the road improvements.

TRANSPORTATION MANAGEMENT PLAN

TRANS-5: The project owner shall develop a Transportation Management Plan which shall include a construction traffic and transportation demand implementation program that limits construction-period truck and commute traffic during peak periods in coordination with the City of Huntington Beach and Caltrans subject to the satisfaction of the CPM.

Verification: Prior to site preparation or earth moving activity, the project owner shall provide the Transportation Management Plan to the City of Huntington Beach and Caltrans for review and comment and, after receipt of comments, to the CPM for review and approval.

INTERIM PARKING PLAN

TRANS-6: The project owner shall submit an interim parking and building materials storage plan to the City of Huntington Beach Planning Department so as to assure adequate parking and restroom facilities are available for employees, customers and contractors during the project's construction phase and that adjacent properties will not be affected by the location of parking and restroom facilities. If adequate parking for construction employees cannot be provided on-site, sufficient off-site parking arrangements with shuttle transportation to and from the site shall be arranged. No off-site parking shall

affect or use designated beach parking facilities unless permitted by the State of California Department of Parks and Recreation, Orange Coast District.

Verification: Prior to start of construction, the project owner shall submit a parking and staging plan for all phases of project construction to the City of Huntington Beach Planning Department for review and after City review to the CPM for approval.

TRANS-7: The project owner shall pay a Fair Share Traffic Impact Mitigation Fee paid to the City of Huntington Beach in accordance to Chapter 17.65 of the City's Municipal Code for the generation of the net additional vehicle trips on City streets cause by the ten (10) new permanent employees to be hired as a result of the retool project.

Verification: Prior to start of construction, the project owner shall submit to the CPM a copy of the receipt issued by the City of Huntington Beach demonstrating payment of the Traffic Mitigation Fee.

TRANS-8: During construction and project operation delivery trucks shall be limited to travel on State Highway 39, State Highway 1 and Newland Street. Truck traffic shall be limited on Newland Street between State Highway 1 and the Main Gate Entrance of the Huntington Beach Generation Facility.

Verification: The project owner shall include this specific route in its contracts for truck deliveries and maintain copies onsite for inspection by the CPM.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

TRAFFIC & TRANSPORTATION

APPLICABLE LAW	DESCRIPTION
FEDERAL	
49 CFR §171-177	Governs the transportation of hazardous materials, including the marking of the transportation vehicles.
14 CFR §77.13(2)(i)	Requires applicant to notify FAA of any construction greater than an imaginary surface as defined by the FAA.
14 CFR 77.17	Requires applicant to submit Form 7460-1 to the FAA. AES has received approval.
14 CFR §§77.21, 77.23 & 77.25	Regulations which outline the obstruction standards which the FAA uses to determine whether an air navigation conflict exists.
STATE	
California State Planning Law, Government Code §65302	Requires each city and county to adopt a General Plan consisting of seven mandatory elements to guide its physical development, including a circulation element.
CA Vehicle Code §35780	Requires approval for a permit to transport oversized or excessive load over state highways.
CA Vehicle Code §31303	Requires transporters of hazardous materials to use the shortest route possible.
CA Vehicle Code §32105	Transporters of inhalation hazardous materials or explosive materials must obtain a Hazardous Materials Transportation License.
California Department of Transportation Traffic Manual, Section 5-1.1	Requires Traffic Control Plans to ensure continuity of traffic during roadway construction.
Streets and Highways Code, Division 2, Chapter 5.5, Sections 1460-1470	Requires Encroachment Permits for excavations in city streets.

APPLICABLE LAW TRAFFIC & TRANSPORTATION	DESCRIPTION
LOCAL	
City of Huntington Beach Circulation Element	Level of service requirements.

VISUAL RESOURCES

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Objectionable Appearance/ View Blockage:	**MITIGATION**	**MITIGATION**	**Insignificant**	**Yes**
	Construction: Construction equipment at the power plant site will have a temporary visual impact, and thus be less than significant,. Operation: The proposed retooling project will not significantly alter the present appearance of Units 3 & 4. However, the power plant is a visually dominant feature in the coastal zone. **MITIGATION:** AES shall paint project structures and fences in non-reflective, neutral colors to further mitigate visual impacts. Conditions **VIS–1**. To mitigate visual impacts from the Pacific Coast Highway, beaches, and nearby residences, AES will plant landscape screening, and architectural screening as necessary, to reduce visual impacts of the power plant. Condition: **VIS-2**. *References: SA pp. 169 – 192.*			
Scenic Designation	**Insignificant**	**None**	**None**	**Yes**
	The coastal zone is a scenic viewshed. The Huntington Beach Generating Station is a pre-existing use. *Reference: SA pp. 174*			
Lighting	**MITIGATION**	**Insignificant**	**Insignificant**	**Yes**
	Construction: Construction during nighttime hours will require temporary lighting, which will be mitigated by shielding, and thus insignificant. Operation: Power plant lighting could cause nighttime visual impacts, unless mitigated by designing hooded or shielded lighting consistent with worker safety. **MITIGATION**: Consistent with worker safety requirements, AES shall install project lighting so that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized. Condition: **VIS–4.** *References: AFC 6.6.3.4.1; SA p. 257*			
Visible Plume	**Insignificant**	**Insignificant**	**Insignificant**	**Yes**
	Operation: Power plant operation creates a water-vapor plume from the exhaust stack that will be visible for a limited number of mostly morning hours per year in winter when the facility is at reduced load. Plume mitigation is accomplished by raising exhaust stack temperatures during reduced loads. Burning excess fuel would be necessary to cause such temperature increases, which reduces efficiency and increases air pollution. Thus, no plume mitigation is required. *Reference: SA pp. 181-182; Reporter's Transcript*			

VISUAL RESOURCES - GENERAL

Visual resources analysis has an inherent subjective aspect. However, the use of generally accepted criteria for determining impact significance and a clearly described analytical approach aid in developing an analysis that can be readily understood.

The CEQA Guidelines defines a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including . . . objects of historic or aesthetic significance (Cal. Code Regs., tit.14, § 15382). (AFC 6.6.3.1; SA p. 234.)

Appendix G of the Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

1. Would the project have a substantial adverse effect on a scenic vista?
2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
4. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Objectionable Appearance/ View Blockage

Construction: Construction cranes currently located atop Units 3 and 4 would presumably remain until construction is completed - estimated by the Applicant to be approximately 3 months from start of construction. Although the cranes alter and increase the visual silhouette of the plant, adding to its industrial character, this effect would be temporary, short-term, and thus less than significant. Other physical alterations due to construction, including equipment, scaffolding, etc. are not anticipated to result in prominent adverse impacts due to the already highly industrial character of the facility.

Material and equipment storage could have an adverse effect on foreground viewers, particularly if visible from adjoining beaches and PCH. However, effects lasting no longer than three months would be short-term and thus less than significant.

Nighttime construction lighting has the potential to disturb neighboring residents across Newland Street and viewers on PCH with disruptive glare, resulting in a potential significant adverse impact. Direct, unshielded construction lighting would impose dominant and obtrusive glare on high sensitivity residential receptors.

Mitigation: The project owner shall design and install all new, and modify existing, project lighting to minimize potential night lighting impacts. Condition: **VIS-4**

Operation:

Power Plant: The analysis of operation impacts of the power plant relies on criteria from the CEQA Guidelines, Appendix G. Photographs from Key Observation Point(s) (KOP) shown in **Visual Resources Figure 1** identify the most potentially adverse visual impacts.

Key Observation Points 1 & 2 – Pacific Coast Highway & Beaches
This predominant landscape unit of the coastal zone comprises a narrow strip including PCH, Huntington Beach State Park, and occasional adjoining wetlands, and extends for miles along the shoreline, offering long and expansive views of the ocean. It is characterized by very high visual quality and very high visual sensitivity. Highly sensitive observers are exposed to views of the plant at distances ranging from 200 feet to 2 miles. KOP 1 is representative of foreground distance viewers at Huntington Beach State Park, across PCH from the project site looking east. Viewer sensitivity at the State Park is high. KOP 2 is representative of southbound motorists' views in the plant's visual foreground. Again, views directly to the site are strongly impaired and dominated by the plant. However, views overall at this location, particularly views down the highway scenic corridor including beach and sea, are high. Viewer sensitivity in this location and condition is high.

Key Observation Point 7 – Trailer Park

Visual Resources Figure 2 The trailer park adjoining the HBGS directly northwest across Newland Street is located roughly 100 feet from the western plant boundary. Views of the plant are highly dominant, though partially screened and filtered by the 10–15 foot tall hedge on the plant boundary, and palm trees along the north side of Newland Street. Visual quality in the trailer park is moderately low, dominated by the existing view of the HBGS, with limited views to the sea, and devoid of on-site landscaping or other visual amenities. Visual sensitivity is regarded as high due to its residential use.

Key Observation Point 3 & 3A – Neighborhood

Visual Resources Figure 3 A small residential area is located approximately 1/3 – ½ mile north of the HBGS, extending to the east and west of Newland Street. KOP 3, Edison Community Park, is located in this neighborhood (see **Visual Resources Figure 4**). Visual exposure to the existing HBGS is highly filtered by intervening structures and trees, but isolated prominent views of the plant are found throughout the area at foreground and near-middleground distances. Views of the SCR units themselves would be hidden by the existing facility from these locations. Visual quality is moderate, typical of residential areas. Visual sensitivity is regarded as high due to its residential use.

KOP 4. Residential neighborhood east of site. (Supplemental Information Figure 5.13-6). Another residential neighborhood east of Magnolia Avenue is located approximately 1/3 mile from the HBGS site. Visual quality is moderate, typical of residential areas. Visual sensitivity is regarded as high due to its residential use. Despite its proximity, visual exposure to the HBGS is generally limited in this area. KOP 4 illustrates a worst-case view from this area at its closest point, looking over the wetlands adjoining the HBGS. North of this point, views toward the plant are blocked by the tall landscaped berm bounding Magnolia Avenue on its west side. Views from within the community consist primarily of occasional, isolated views of the top of plant stacks, and of occasional vapor plumes (KOP 4B).

Key Observation Point 8 & 8A – Downtown Huntington Beach/Pacific Ocean

Visual Resources Figure 5. These KOPs, although also located in the coastal zone, are representative of key viewing locations downtown and from the water. Downtown Huntington Beach is located approximately 1-1/2 miles northeast of the project site. Visual quality is moderate to high in this area, with coherent architectural and streetscape design and outstanding ocean views. Visual sensitivity is regarded as very high at this primary visitor destination. Views of the HBGS, though visually subordinate at this distance, are visible, prominent, and tend to attract the eye due to the conspicuous height and location of the plant. Visitor-oriented commercial uses are concentrated in this part of town, notably the Huntington Beach Pier, KOP 8A. **Visual Resources Figure 6.**

Compliance with Laws, Ordinances, Regulations, and Standards

The City of Huntington Beach has stated in a letter to the Energy Commission dated December 21, 2000 that "without intensified landscaping and screening efforts, the existing [structure] and proposed retooling project does not comply with applicable land use policies established in the General Plan (City of Huntington Beach, 2001)."

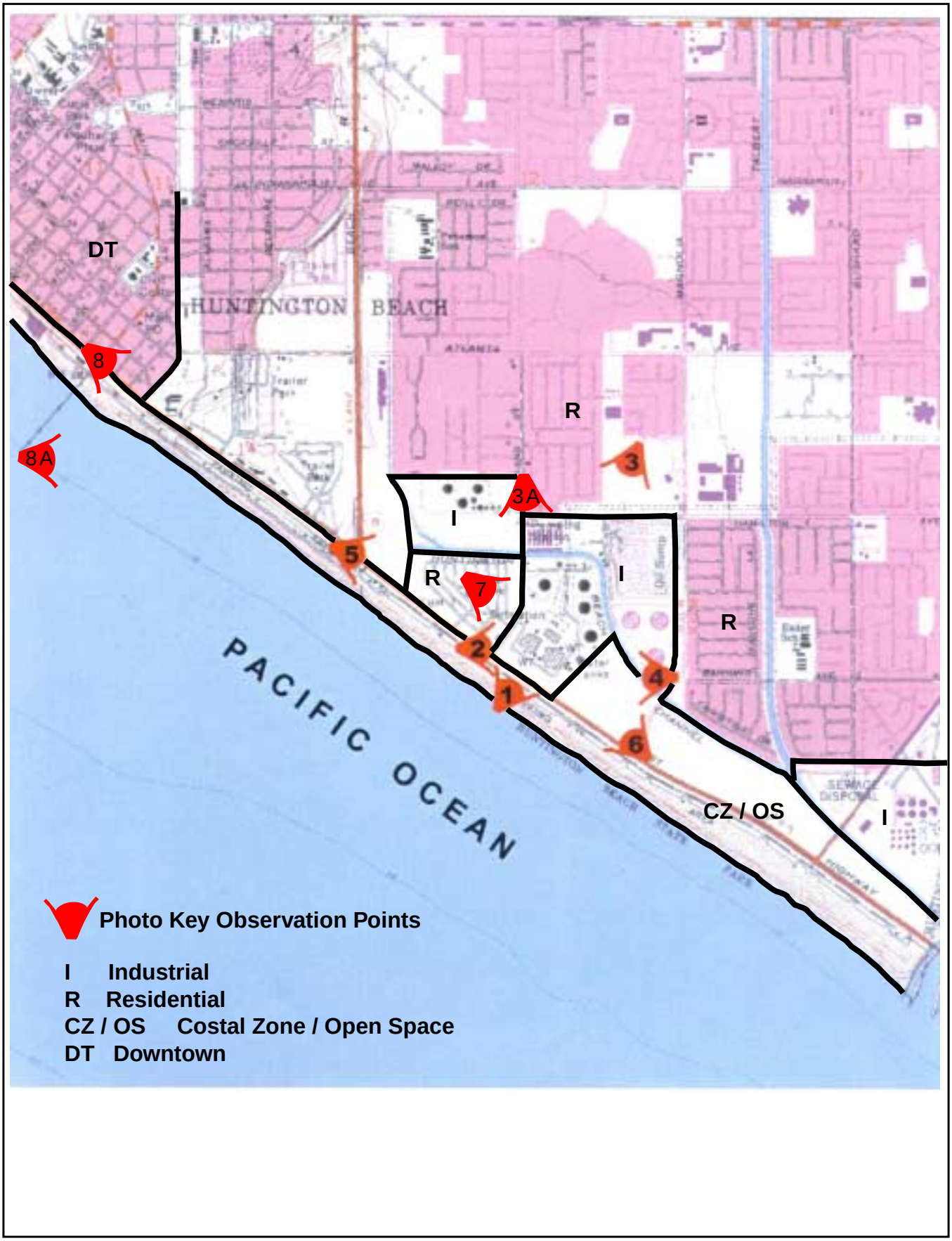
Staff determined that the HBGS Retool project as proposed does not comply with all applicable policies of the Coastal and Urban Design Elements of the City of Huntington Beach General Plan, as described above. Specifically, no concrete mitigation proposals to address the policies and goals cited above have been made by the applicant in connection with this (Units 3 and 4) project. Policy C 8.4.2 however, states that the City shall '(R)equire any power plant expansion or alteration proposals to include adequate buffer and screening measures.' Pursuant to Section 30251 of the Coastal Act, the basic goal of the Coastal Element Visual Resource policies is to "(P)reserve and, where feasible, enhance and restore the aesthetic resources of the City's coastal zone ."

The policies and related analysis presented above identify the HBGS as a 'visual weakness' of the City's coastal zone, and indicate a clear intent to lessen the adverse impacts of the existing facility on the visual resources of the coastal zone. Accordingly, the project would be required to apply feasible measures to enhance and restore the visual quality of the coastal zone in order to meet the intent of Policy C 8.4.2 and other similar policies and goals cited above.

With Conditions of Certification VIS-1 and VIS-2, Staff believes that the project would continue to have a degrading influence on the coastal viewshed and would remain substantially unscreened due to its height and bulk. However, these measures would implement landscape and/or architectural screens and buffers as called for in Urban Design Policy UD 2.2.1, and Land Use Policy LU 12.1.8, and constitute, in effect, a comprehensive screening plan as called for in Coastal Element Energy Policy 14c. These measures would enhance the existing visual quality of the plant to a limited, if not complete, extent. This combination of measures represents the extent of feasible, available mitigation; thus, the project, with these measures, would substantially comply with applicable policies of the General Plan and current Coastal Element.

MITIGATION: AES shall paint project structures and fences in neutral colors to reduce visual impacts, and prepare and implement a visual screening plan. Conditions **VIS-1 & VIS-2**.

VISUAL RESOURCES - Figure 1
Huntington Beach Repower - Key Observation Points and Landscape Units



CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, MARCH 2001
SOURCE: Figure 5.13.1.jpg

VISUAL RESOURCES - Figure 2
Huntington Beach Repower - KOP #7

SOURCE:Fig 2.jpg

VISUAL RESOURCES - Figure 3
Huntington Beach Repower - KOP #3a

CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, MARCH 2001
SOURCE:Fig 3-kop 3a.jpg

VISUAL RESOURCES - Figure 4
Huntington Beach Repower - KOP #3

SOURCE:Fig 4-kop 3.jpg

VISUAL RESOURCES - Figure 5
Huntington Beach Repower - KOP #8

SOURCE:Fig 5-kop 8.jpg

VISUAL RESOURCES - Figure 6
Huntington Beach Repower - KOP #8a

CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, MARCH 2001
SOURCE:Fig 6-kop 8a.jpg

Lighting

Construction: Nighttime construction lighting has the potential to disturb neighboring residents across Newland Street and viewers on PCH with disruptive glare, resulting in a potential significant adverse impact. Direct, unshielded construction lighting would impose dominant and obtrusive glare on high sensitivity residential receptors.

MITIGATION: All construction lighting will be completely shielded or screened so as not to be visible to residents of the adjacent trailer park across Newland Street, Pacific Coast Highway and Huntington State Beach. Condition: **VIS-4(e)**

Operation: The proposed project would require nighttime lighting for operational safety and security. To reduce the offsite impacts from this night lighting, AES has committed to directing the lights towards the middle of the property and away from the outer site boundaries to reduce light scatter and glare. Additionally, fixtures are to be of the non-glare type. These measures as part of a comprehensive lighting plan will mitigate any potentially significant adverse visual impacts from lighting.

MITIGATION: Consistent with worker safety requirements, AES shall install project lighting so that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized. Motion detectors will be used where feasible. Condition: **VIS–4.**

Visible Plumes

A water-vapor plume will result from the operation of the power plant and will be visible for a limited number of hours per year depending on meteorological conditions. Whether the plume would be visible also depends on whether the observation is made during daylight or nighttime hours. The height and width of the visible water-vapor plume will also depend on meteorological conditions.

Based on the results of the plume visibility model staff ran, views of maximum size plumes would be available from a relatively large geographic area, extending beyond the area from which the power plant structures are visible. Visible plume formation potentially exceeding staff's impact significance criteria (visually dominant plumes 10% of daytime no fog hours per season or more) were predicted in winter when the facility is operating at 50 percent load.

Due to the fact that highly sensitive receptors of plume impacts are located at near foreground distances from the plant, on PCH and at nearby portions of the beach (represented by KOPs 1 and 2), even relatively small dimension plumes are potentially visually dominant. Thus, predicted plumes were considered to have a high likelihood of resulting in significant impacts in the sensitive visual foreground if their predicted frequency exceeded the 10% daytime no fog seasonal criterion.

Thus, visible plumes of potentially significant size and frequency could occur under certain operating regimes during winter resulting in significant adverse impacts, although the plant would have to be in operation at reduced operating load levels for extensive periods of time to exceed the significant impact criteria.

Staff recommended a condition of certification that would limit operations during daytime winter hours so that exhaust temperatures from the stack would be sufficiently high to reduce or eliminate water vapor plume formation. AES testified that exhaust stack temperatures are raised by increasing gas flow when loads don't require it, thus using excess fuel, decreasing efficiency, and creating more air pollution. The Commission finds visible plumes will not be a significant visual impact since plumes occur during a limited number of cold winter morning hours during limited operational conditions.

Cumulative Impacts

Cumulative impacts to visual resources would occur where project facilities or activities (such as construction) occupy the same field of view as other built facilities or impacted landscapes. It is also possible that a cumulative impact could occur if a viewer's perception is that the general visual quality of an area is diminished by the proliferation of visible structures (or construction effects such as disturbed vegetation), even if the new structures are not within the same field of view as the existing structures. The significance of the cumulative impact would depend on the degree to which (1) the viewshed is altered; (2) visual access to scenic resources is impaired; (3) visual quality is diminished; or (4) the project's visual contrast is increased.

Potential past, present, and foreseeable future projects potentially affecting cumulative project visual impacts include the existing Units 1, 2 and 5 of the HBGS itself; the County sewage treatment facility one mile south of HBGS; and the proposed future Poseidon desalination project, which would introduce various industrial structures ranging from 15 to 60 feet in height on the HBGS site. Cumulative visual effects from project facilities were not significant due to the de minimis contribution the proposed SCR and ammonia injection units would represent.

Plumes from the proposed boiler exhaust stacks would occur infrequently and then mostly during nighttime and early morning hours in winter. At those times that the plumes would be visible, they would contribute to cumulative visual impacts on views from the project area. However, the low frequency of visibility would result in adverse but not significant cumulative visual impacts.

Finding

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to visual effects and all potential visual impacts will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

STRUCTURE COLOR PLAN

VIS-1: At the earliest feasible time after start of commercial operation, the project owner shall paint or treat Units 3 and 4 structures visible to the public in a harmonizing color or colors with a low to medium gloss finish to blend with the surroundings.

The project owner shall submit a treatment plan for the project to the City of Huntington Beach for review and comment, and to the California Energy Commission Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

1) specification, and 11" x 17" color simulations at life-size scale, of the treatment proposed for use on project structures, including structures treated during manufacture;
2) a detailed schedule for completion of the treatment; and,
3) a procedure to ensure proper treatment maintenance for the life of the project.

For any structures that are treated during manufacture, the project owner shall not specify the treatment of such structures to the vendors, and shall not perform the final treatment on any structures on site until the project owner receives notification of approval of the treatment plan by the CPM.

Verification: Not later than 30 days prior to ordering the first structures that are color treated during manufacture, the project owner shall submit the treatment plan to the CPM for review and approval. If the CPM notifies the project owner of any revisions that are needed before the CPM will approve the plan, within 15 days of receiving that notification the project owner shall submit to the CPM a revised plan.

Not later than 30 days after the start of commercial operation, the project owner shall notify the CPM that all treated structures are ready for inspection. The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VISUAL SCREENING PLAN

VIS-2: Prior to start of commercial operation the project owner shall prepare a visual screening plan. The project owner shall implement the screening plan at the earliest feasible time but no later than one year after operation.

The screening shall, at a minimum, include landscaping surrounding the site on the northwest and southwest boundaries of the project site and on the southeast boundary if acceptable to the California Department of Fish and Game. Final plant selection shall be made in consultation with the CPM and the City of Huntington Beach and be designed to provide the maximum amount of feasible screening in the shortest feasible period of time. Planting shall be installed at a minimum height of 24" box size at the time of planting, and designed to achieve at least 40 feet in height at maturity. Suitable irrigation shall be installed to ensure survival and desired rate of growth. The landscape screening and irrigation system shall be monitored for a period of five years to ensure survival. During this period all dead plant material shall be replaced. Prior to start of commercial operation, the project owner shall submit a landscape screening plan to the City of Huntington Beach and State Department of Fish and Game for review and comment, and to the CPM for review and approval.

The plan shall include, but not be limited to:

- A detailed landscape, grading, and irrigation plan, at a reasonable scale, which includes a list of proposed tree and shrub species and installation sizes, and a discussion of the suitability of the plants for the site conditions and mitigation objectives. A list of potential tree

species which would be viable in this location shall be prepared by a qualified professional arborist familiar with local growing conditions, with the objective of providing the widest possible range of species from which to choose. The plan shall demonstrate how the screening conditions called for above shall be met, including evidence provided by a qualified professional arborist that the species selected is both viable and available.

- Elevation views or visual simulations of the landscape screening at installation; at 5 years' growth after installation of the landscaping from the time of startup of operation of the facility; and at maturity, in order to show the extent of screening that the landscaping is expected to achieve in these time frames.

- Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal; and

- A procedure for monitoring for and replacement of unsuccessful plantings.

If, upon review of elevation views or simulations of the landscape screening, landscaping measures alone are found infeasible or fail to achieve adequate visual screening, the CPM will direct the applicant to submit a new screening plan for review and approval. The new screening plan may include alternative landscape concepts or a combination of architectural screening and landscape improvements that would enhance the visual quality of the power station, such as light-weight mesh screening on the power block superstructure or other, similar measures consistent with structural, safety, and ventilation requirements. However, intensified landscaping would remain the preferred approach. The applicant shall consult with a qualified artist, designer, and/or architect to evaluate, recommend, and implement such screening measures.

Upon approval by the CPM, with input from the City of Huntington Beach, the project owner shall be required to implement the new screening plan. The project owner shall not implement the plan until the project owner receives approval of the plan from the CPM.

Verification: At least 60 days prior to start of commercial operation, the project owner shall submit the landscape plan to the City of Huntington Beach and the State Department of Fish and Game for comment, and the CPM for review and approval. If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal as described above.

The project owner shall notify the CPM within seven days after completing installation of landscaping that the planting and irrigation system are ready for inspection and, if architectural screening has been required, within seven days of completion of installation.

The project owner shall report landscape maintenance activities, including replacement of dead vegetation, for the previous year of operation in the Annual Compliance Report.

VIS-3: Twelve months prior to the end of term of this certification, the project owner shall submit a facility closure plan for dismantling of Units 3 and 4,if an AFC for continued operation has not been filed with the commission. At a minimum the facility closure plan shall include dismantling of the stack, power block, and any outdated technology. Upon approval of the facility closure plan, the project owner shall dismantle the plant according to the approved plan.

Verification: The project owner shall submit the facility closure plan to the CPM for review and approval at the time required above, if an application for continued operation of Units 3 and 4 has not been filed with the commission.

VIS-4: The project owner shall design and install all new, and modify existing, project lighting to minimize potential night lighting impacts, as follows:

a) All lighting shall be of minimum necessary brightness consistent with operational safety.
b) All lighting shall be shielded and directed downward to prevent all uplighting and all direct light trespass (direct lighting extending outside the boundaries of the facility).
c) Wherever feasible and safe, lighting shall be kept off when not in use and motion detectors employed.
d) A lighting complaint resolution form (following the general format of that in Attachment 1) shall be maintained by plant operations, to record all lighting complaints received and to document the resolution of that complaint.
e) Consistent with construction personnel safety, all construction lighting will be completely shielded or screened so as not to be visible to residents of the adjacent trailer park across Newland Street, and to viewers on Pacific Coast Highway and at Huntington State Beach.

2 The project owner shall develop a lighting plan for the project incorporating the above measures and submit it to the CPM for review and approval.

Verification: At least 60 days before ordering the exterior lighting, the project owner shall provide the lighting plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days of completing exterior lighting installation and modification that the lighting is ready for inspection.

The project owner shall report any lighting complaints and documentation of resolution in the Annual Compliance Report, accompanied by any lighting complaint resolution forms for that year.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

VISUAL

APPLICABLE LAW	DESCRIPTION
FEDERAL	
NA	There are no applicable Federal LORS for the section of visual.
STATE	
NA	There are no applicable State LORS for the section of visual.
LOCAL	
California Coastal Act	The project is subject to visual requirements of the California Coastal Act (Public Resources Code, Division 20) as implemented by a local coastal program certified by the State Coastal Commission and administered by the local jurisdiction. Scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance.
City of Huntington Beach, General Plan & Zoning Ordinance	Minimize the visual impact of utilities upon coastal, scenic surroundings; maximize use of landscape screening of mechanical equipment.

WASTE MANAGEMENT

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Excavation	**MITIGATION**	**None**	**None**	**Yes**
	Though unlikely, contaminated soil may be encountered during construction excavation. **MITIGATION:** Contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Condition: **WASTE-4.** *References: SA p. 105.*			
Construction Wastes	**MITIGATION**	**None**	**None**	**Yes**
	Power plant and pipeline construction will generate typical construction wastes, such as lumber, plastic, scrap metal, glass, excess concrete, empty containers, and packaging. These construction wastes are either recycled or disposed at a Class III landfill. **MITIGATION:** AES shall prepare a waste management plan to assure the appropriate handling of wastes. Condition: **WASTE– 2**. *References: SA p. 102.*			
Non-hazardous Wastes	**Insignificant**	**None**	**None**	**Yes**
	Typical non-hazardous operation wastes include a small volume of maintenance-related trash, office trash, empty containers, broken or used parts, used packaging materials, and used air filters. These non-hazardous wastes will be routinely collected by a licensed hauler and disposed at a Class III landfill. *Reference: AFC 5.14.2.1.*			
Hazardous Wastes	**MITIGATION**	**None**	**None**	**Yes**
	Hazardous wastes will include recyclable materials such as used oil, filters, rags, etc. Non-recyclable hazardous wastes include oil absorbents, welding materials, paints, used grit, weak acids, used batteries, and asbestos and are properly disposed at Class I landfills. There are no hazardous wastes associated with the operation of the pipeline. **MITIGATION:** A licensed hauler will transport non-recyclable hazardous wastes to a Class I landfill. AES shall prepare a waste management plan and report any potential enforcement action related to waste management. Conditions: **WASTE–1** and **WASTE-2**. *Reference: AFC 5.14.1.2.*			
Disposal Capacity	**None**	**None**	**None**	**Yes**
	The capacities of available Class I and Class III landfills far exceed the construction and operation wastes generated by this project. *Reference: AFC Tables5.14-1, 5.14-2.*			

CONSTRUCTION WASTE MANAGEMENT - GENERAL

Different types of wastes will 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. These wastes are designated as hazardous or non-hazardous according to the toxic nature of their respective constituents. This analysis assesses the adequacy of the waste

management plan with respect to handling, storage and disposal of these wastes in the amounts estimated for the project. The handling of project's wastewater, for which a National Pollutant Discharge Elimination System (NPDES) permit is required, is discussed in **WATER QUALITY.**

Excavation

If contaminated soil is encountered during construction, such contamination will be assessed using procedures that allow for identification of best disposal options. If the soil is classified as hazardous (according to RCRA and Cal. Code of Regs., title 22), the Huntington Beach Fire Department, Hazardous Materials Division, and Orange County Environmental Health Division, and Long Beach Substance Control will be notified for guidance and disposal. (SA pg. 106)

MITIGATION: Contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Condition: **WASTE-2 & WASTE-4.**

Construction Wastes

Construction and preparation of the power plant and pipelines will generate both hazardous and non-hazardous wastes. The non-hazardous component of the construction-related wastes will include waste paper, wood, glass, scrap metal, and plastics, from packing materials, waste lumber, excess concrete, insulation materials, and non-hazardous chemical containers. Management of these wastes will be the responsibility of the contractors. AES has provided estimates of the amounts to be generated along with the methods for their management. These wastes will be segregated, where practical, for recycling. Those that cannot be recycled will be placed in covered containers and removed on a regular basis by a certified waste handling contractor for disposal at a Class III facility.

The relatively small quantities of hazardous materials to be generated during this construction phase will mainly consist of used oil, waste paint, spent solvents, materials, used or batteries, and cleaning chemicals. These wastes will be recycled or disposed of at licensed hazardous waste treatment or disposal facilities. The construction contractor will be considered the generator of the hazardous waste produced during construction and will be responsible for compliance with applicable federal and state regulations regarding licensing, personnel training, accumulation limits, reporting requirements, and record keeping. (AFC 5.14.2.1.1.)

MITIGATION: AES shall prepare a waste management plan to assure the appropriate handling of wastes. Condition: **WASTE– 2**.

Non-Hazardous Wastes

Under normal operating conditions, the typical, solid non-hazardous wastes will include routine maintenance-related trash, office wastes, empty containers, broken or used parts, and used packaging materials and air filters. Some of the wastes will be recycled to minimize the quantity to be disposed of in a landfill. The non-recyclables will be disposed of at a non-hazardous waste disposal facility. The volume of non-hazardous wastes from the proposed and similar gas-fired facilities is typically small and readily accommodated within area disposal facilities. For the proposed facility for example, such

wastes are expected to be negligible compared to the capacity available Class III landfills. (AFC 5.14.2.1, Table 5.14.1)

Hazardous Wastes

The hazardous waste quantities generated by the project will be minimal. The facility likely will be classified as a small-quantity generator. The operations-related hazardous wastes will include spent air pollution control catalysts, used oil and air filters, used cleaning solvents, and used batteries. Some of these wastes will be recycled. These will include the spent air pollution control catalysts, used oil from equipment maintenance, and oil-contaminated materials such as rags or other cleanup materials. The non-recyclables will be disposed of in a Class I disposal facility. (AFC 5.14.1.2; SA p. 105)

MITIGATION: A licensed hauler will transport non-recyclable hazardous wastes to a Class I landfill. AES shall prepare a waste management plan, obtain a USEPA identification number, and report any potential enforcement action related to waste management. Conditions: **WASTE–1 through WASTE–4**.

Disposal Capacity

AFC Table 5.14-1 lists nonhazardous disposal facilities that can be used for wastes generated by the AES project. The two facilities listed that are located in Orange County have total remaining capacities of about 42 and 32 million tons and expected remaining lifetimes of 12 and 23 years, respectively. A third landfill in Orange County, Prima Deshecha has about 45 million tons of remaining capacity and is anticipated to remain open until about 2040 (Hull 2001). Landfills operated by the Sanitation Districts of Los Angeles County, such as Puente Hills, will not accept wastes from out of the county. Nontheless, the Orange County landfills have adequate remaining capacity such that wastes from the AES project will comprise less than one percent of their remaining capacity.

Three Class I landfills in California, at Kettleman Hills in King's County, Buttonwillow in Kern County, and Westmoreland in Imperial County, are permitted to accept hazardous waste (AES 2000a, AFC p. 5.14-2). There is a combined total in excess of twenty million cubic yards of remaining hazardous waste disposal capacity at these facilities with remaining lifetimes in excess of 50 years. The amount of hazardous waste being transported to these landfills has decreased in recent years due to source reduction efforts by generators, and the transport of waste out of state that is hazardous under California law, but not federal law.

Cumulative Impacts

Due to the minor amounts of wastes generated during project construction and operation, the insignificant impacts on individual disposal facilities, and the availability of additional regional landfills, cumulative impacts will be insignificant for both hazardous and nonhazardous wastes.

Finding

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to waste management and all potential adverse impacts related to waste management will be mitigated to insignificance.

CONDITIONS OF CERTIFICATION

WASTE MANAGEMENT ENFORCEMENT ACTION

WASTE-1: Whenever aware of any impending waste management-related enforcement action, the project owner shall notify the CPM of any such action whether it is to be taken against the project owner, the waste transporter under contract, or the disposal or treatment facility to be used.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action.

WASTE MANAGEMENT PLAN

WASTE-2: Prior to the start of both construction and operation, the project owner shall prepare and submit to the CPM, for review and comment, a waste management plan with respect to all wastes generated during construction and operation of the facility, respectively. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications;
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans; and
- Provisions for personnel training and emergency procedures in response to the accidental release of hazardous wastes.

Verification: No less than 20 days prior to the start of construction, the project owner shall submit the construction waste management plan to the CPM for review. The operations-related waste management plan shall be submitted no less than 20 days prior to the start of operation. The project owner shall submit any required revisions within 10 days of notification by the CPM (or on a mutually agreed upon date). In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to planned management methods.

ENVIRONMENTAL PROFESSIONAL

WASTE-3: The project owner shall have an environmental professional available for consultation during soil excavation and grading activities. The environmental professional shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil. The environmental professional shall meet the qualifications of such as defined by the American Society for Testing and Materials designation E 1527-97 Standard Practice for Phase I Environmental Site Assessments as evidenced by one of the following or similar credentials: (1) Certified Industrial Hygienist with experience in worker exposure monitoring, (2) Qualified Environmental Professional certification, (3) Registered Environmental Assessor II, or (4) Registered Professional Engineer or Geologist with experience in remedial investigation and feasibility studies.

Verification: At least 20 days prior to the start of construction, the project owner shall submit the qualifications and experience of the environmental professional to the CPM for approval.

CONTAMINATED SOIL

WASTE-4: If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the environmental professional shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action. Depending on the nature and extent of contamination, the environmental professional 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 environmental professional, significant remediation may be required, the project owner shall contact representatives of the Orange County Environmental Health Division and the Long Beach Regional Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the environmental professional to the CPM within 5 days of their receipt.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WASTE MANAGEMENT

APPLICABLE LAW	DESCRIPTION
FEDERAL	
42 U.S.C. §§6901-6992k, RCRA Subtitle C and D	Regulates non-hazardous and hazardous wastes. Laws implemented by the State.
40 CFR 260, et seq.	Implements regulations for RCRA Subtitle C and D. Implemented by the US EPA by delegating to the State.
Federal Clean Water Act, 33 U.S.C. §1251 et seq.	Regulates wastewater discharges to surface waters of the US. NPDES program administered at the State level.
STATE	
Public Resources Code §40000 et seq. (California Integrated Waste Management Act)	Implements RCRA regulations for non-hazardous waste.
Water Code §13000, et seq. (Porter-Cologne Water Quality Control Act	Regulates wastewater discharges to surface and groundwaters of California. NPDES program implemented by State Water Resources Control Board.
22 CCR §66262.34	Regulates accumulation periods for hazardous waste generators. Typically hazardous waste cannot be stored on-site for greater than 90 days.
Health & Safety Code §25100 et seq. (California Hazardous Waste Control Law)	Regulates hazardous waste handling/storing. Implemented by City of Huntington Beach Fire Department, Hazardous Materials Division.
LOCAL	
There are no applicable local LORS for Waste Management.	

WATER QUALITY & SOILS

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Erosion, Sedimentation & Drainage	**MITIGATION**	**Insignificant**	**None**	**Yes**
	Construction: The project will require no grading and limited excavation. Excavation and hauling activities potentially produce dust which can be transported off-site by wind. Excavation may also create the potential for transportation loosened soils by rainwater or on-site release of fluids. Existing permanent catchment basins and temporary containment barriers can control potential sedimentation impacts to waterways or sensitive habitat. **MITIGATION:** To control airborne fugitive dust, AES shall water disturbed areas and apply chemical dust suppressants, apply gravel or paving to traffic areas, wash wheels of vehicles of large trucks leaving the site. Condition: **AQ – C1.** Prior to site clearing and grading, AES shall update as necessary its erosion control and stormwater pollution prevention plans to contain and process runoff on-site and to prevent or contain any spill or leak of construction materials onto soils or into runoff waters. Conditions: **WATER QUALITY-1 and WATER QUALITY-5.** Operation: Stormwater drainage over compacted or graveled surfaces has the potential to impact off-site waterways or sensitive habitats by carrying contaminants deposited on the surface or by channeling volumes of fast moving water. AES proposes to collect surface run-off in a large catchment basin before being discharged. **MITIGATION:** Prior to site clearing and grading, AES shall prepare erosion control and stormwater pollution prevention plans to contain and process runoff on-site and to prevent or contain any spill or leak of materials onto soils or into runoff waters. Conditions: **WATER QUALITY-1** *References: SA p. 265.*			
Prior Soil Contamination	**MITIGATION**	**None**	**None**	**Yes**
	Though unlikely, soil contaminated by disposal practice or accidental spills or leaks may be encountered at the power plant site during construction excavation. **MITIGATION:** Contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Condition: **WASTE-1.** *References: SA p. 102.*			

Contamination of Surface Waters & Groundwaters	**MITIGATION**	**MITIGATION**	**None**	**Yes**
	Construction: AES will not release any substance onto the power plant site soils or into a nearby waterway which will degrade either surface water quality or groundwater quality. Operation: AES will not release any substance onto the power plant site soils or into a nearby waterway which will degrade either surface water quality nor groundwater quality. AES will store all hazardous and acutely hazardous materials in tanks with catchment basins to retain spills or ruptures. (See **HAZARDOUS MATERIALS, Storage & Use**). AES will store and, as appropriate, cover small quantities of hazardous materials to prevent contamination of soils or water quality, directly or by runoff. **MITIGATION:** The storage of urea for producing ammonia shall include a secondary containment basin. Condition: **WATER QUALITY-5.** AES shall prepare erosion control and stormwater pollution prevention plans to contain and process any spill or leak of hazardous materials onto soils or into runoff waters. Conditions: **WATER QUALITY-1.** Thermal Discharge: The HBGS discharge of heated water to the Pacific Ocean may or may not be contributing to the presence of bacteria in the surf zone causing the closure of public beaches. Studies hypothesize that thermal discharge from AES's outfall causes an up-welling which brings deeper waters bearing bacteria, possibly from the Sanitation District's sewage outfall, nearer to the surface, where tidal action and winds bring the bacteria to shore. **MITIGATION:** AES will fund a non-duplicative study focused on the HBGS's potential contribution to the surf zone water quality problems and implement solutions recommended by the study results. Condition: **WATER QUALITY-3**. *References: SA pp.263-268.*			
Wastewater	**Insignificant**	**None**	**None**	**Yes**
	Sanitary wastes will be directed to the existing sanitary sewage system. Wastewater will be generated at the plant in various systems, including boiler blowdown, condenser cooling water, metal cleaning wastes, storm water runoff, etc. AES plans to collect all plant wastewater streams and discharge them through the outfall to the ocean under the current NPDES permit from the Santa Ana Regional Water Quality Control Board. *References: SA p. 264*			

WATER QUALITY – GENERAL

This section analyzes potential effects on water quality and soil resources that could result from construction and operation of the project, specifically focusing on the potential for erosion and sedimentation and degradation of surface and groundwater quality.

Flooding is addressed in the **GEOLOGY** section of this decision. Solid waste and contaminated soil disposal is discussed in the **WASTE MANAGEMENT** section.

Erosion, Sedimentation & Drainage

The proposed project does not involve any major ground disturbance, such as grading or excavation (AES 2000, p. 5.4-3). Most access is limited to existing paved roads in the construction area to minimize site compaction.

Installation of the selective catalytic reduction (SCR) units will require the removal of asphalt near the generating units resulting in minor soil disturbance. In addition the construction of the urea reactor tank will also require removal of the existing asphalt cover where the foundation and loading area for this tank will be located. The surrounding asphalt will remain unaltered. Exposure of the soils can lead to their entrainment in surface water flows. AES proposes to institute measures to minimize soil erosion during construction.

MITIGATION: To control airborne fugitive dust, AES shall water disturbed areas and apply chemical dust suppressants, apply gravel or paving to traffic areas, wash wheels of vehicles of large trucks leaving the site. Condition: **AQ – C1.** Prior to site clearing and grading, AES shall update as necessary its erosion control and stormwater pollution prevention plans to contain and process runoff on-site and to prevent or contain any spill or leak of construction materials onto soils or into runoff waters. Conditions: **WATER QUALITY-1 and WATER QUALITY-5.**

Prior Soil Contamination

Excavation may unearth soils contaminated by prior disposal practices or accidental spills or leaks. If contaminated soil is encountered during construction, such contamination will be assessed using procedures that allow for identification of best disposal options. If the soil is classified as hazardous (according to RCRA and CCR Title 22), the soil will be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.

MITIGATION: Contaminated soils will be tested and, if appropriate, treated or disposed at a Class I landfill. Condition: **WASTE-1.**

Contamination of Surface Waters & Groundwaters

A site spill contingency plan may need to be updated for chemical spill control and management of the hazardous materials that will be stored and used on the site (refer to the **Hazardous Materials** section for more information). As described in the SWPPP, AES hazardous materials would be surrounded by secondary containment structures, protected from precipitation by covers, and stored in drums approved by the Department of Transportation. These drums would be placed on spill containment skids and housed at a storage area.

MITIGATION: AES shall update its erosion control and stormwater pollution prevention plans to contain and process any spill or leak of hazardous materials onto soils or into runoff waters. Conditions: **WATER QUALITY-1.** The storage of urea for producing ammonia shall include a secondary containment basin. Condition: **WATER QUALITY-3.**

Renewal of the HBGS' NPDES permit did not require an assessment of the potential environmental impacts on the current environment associated with the proposed increased operation. Concerns were raised by the City of Huntington Beach that increasing the water volume intake from and discharge to the ocean by HBGS may result in further surf zone water quality impairment and beach closures. Over the last two years Huntington Beaches (both state and city) have been closed because of the presence of indicator bacteria in the surrounding surf zone. Although sometimes naturally occurring, indicator bacteria can be a sign of fecal contamination. A study published in December 2000 suggests a possible link between the intake/discharge of the power plant and elevated surf zone levels of indicator bacteria (UCI et al, 2000). The report suggests that an upwelling of the bacteria by the power plant's wastewater discharge transports the bacteria to the near-shore region. Although not identified as a possible source of the bacteria, current available analysis is unclear as to the extent of this link.

Additional efforts are underway to further analyze conditions in the surf zone, the sources of the bacteria and mechanisms that may transport the indicator bacteria to the surf zone (including the power plant's outfall). AES is currently participating in a task force lead by the Orange County Sanitation District created to develop the next phase of analysis. It is not clear at this time if these studies will clarify whether or not HBGS' operation has an effect on the occurrence of the bacteria in the vicinity the beaches. Since efforts are already underway, staff believes that it is important for any analysis regarding the impacts associated with HBGS's intake/discharge be done in cooperation with and complementary to these other efforts. Therefore, staff is recommending a condition of certification that directs the project owner, under the direction of the Energy Commission, to provide for an analysis of the influence and interaction of the HBGS ocean intake and discharge on the indicator bacteria in the surf zone of Huntington Beaches.

MITIGATION: AES shall fund a non-duplicative study focused on the HBGS's potential contribution to the surf zone water quality problems and implement solutions recommended by the study results. Condition: **WATER QUALITY-3**.

The City of Huntington Beach has proposed a condition to create an up-front $14 million mitigation guaranty fund to assure payment of mitigation. The Commission believes that AES will have a sufficient income stream from project operation to pay for necessary mitigation on a pay-as-you-go basis. With respect to the surf zone study (**WATER QUALIY-3**), the Commission believes that the accompanying condition recommended by Staff for pre-payment of the study funds (**WATER QUALITY-4**)is appropriate to assure the accomplishment of the study.

Additionally, the City of Huntington Beach proposes a condition that to mitigate impacts to the local area, its residents and visitors, AES pay $ 500,000 to the City Park and Recreation fund to assist in improvement of the quality of life in the City. The Commission does not believe that the record supports with specificity the impacts asserted by the City nor the amount requested as mitigation.

Wastewater

Under existing operation, several waste streams are directed to the facility's ocean discharge as permitted by the Santa Ana RWQCB (SARWQCB 2000). These include the boiler blowdown, condenser cooling water, metal cleaning wastes and flows from the retention basin. Waste directed to

the retention basin include stormwater and low volume wastes (water softener regeneration brines, reverse osmosis/deionization unit brines, boiler condensate, drains, laboratory and sampling streams). The existing NPDES permit specifies wastewater thermal discharge is not to exceed 30 degrees F above the natural temperature of the receiving waters with allowance for the waste discharge to not exceed 125 degrees F during adjustment of the re-circulation gate (heat treatment for bio-fouling control). Thermal limits also include increases of no more than 4 degree F at the shoreline, the surface of any ocean substrate and the ocean surface beyond 1,000 feet from the discharge point maintained at least 50 percent of the duration of any complete tidal cycle. Several constituent concentration limits are established for the waste discharge to the outfall (Discharge Serial No. 001) and are contained in the NPDES permit. Residual chlorine concentrations in excess of 0.2 milligrams per liter are prohibited and measured pH levels must be within 6.0 and 9.0. Maximum wastewater flow is 516 mgd. Based on the Applicant's calculations, wastewater discharge from Discharge Serial No. 001 is not expected to exceed 513.5 mgd (AES, Data Response #52, February 23, 2001).

Cumulative Impacts

Although a proposed project may not result in any direct or indirect adverse impacts, it may contribute to cumulative adverse impacts when considered with other proposed development in an area. To the extent that such an impact is probable, a developer may be required to mitigate the increment of the impact attributable their proposed project. Staff is aware of one other development with the potential to cause a cumulative impact when considered in relationship with HBGS.

Poseidon Resources Corporation (Poseidon) has submitted an application to the City of Huntington Beach to construct and operate the Seawater Desalination Project at AES' Huntington Beach Generating Station. According to a brief description supplied to staff by City of Huntington Beach representative, this project will use wastewater discharge from the power plant as its source water and return its saltwater by-product to the power plants discharge conduit. Many of the other facilities at the HBGS will be utilized for operation of the desalination facility.

HBGS' current NPDES permit does not include this desalination facility. Changes to the physical or chemical characteristics of HBGS discharge resulting from the construction and operation of the desalination facility will require the existing permit be re-evaluated and may require the existing NPDES permit be modified, revoked or re-issued. Based on information available to staff there is the potential for a cumulative impact to occur; however, inadequate information is available to determine the extent of the impact.

Impacts associated with the Poseidon desalination facility will be evaluated by the City of Huntington Beach, the Santa Ana RWQCB and other appropriate agencies as part of their permitting processes and the City's CEQA analysis of the proposal. In order to approve the desalination facility, the City will address mitigation of any direct, indirect and cumulative environmental impacts from the development of the desalination facility at the HBGS site.

Findings

1. Although the project has a potential significant impact on the environment due to its possible contribution to the transportation of indicator bacteria to the surf zone, specific social and economic considerations—the immediate need to increase electric generating capacity in order to avoid the disruption of electric service and consequent threats to the health and safety of Californians—make infeasible any additional mitigation measures or project alternatives that would postpone or delay the proposed project. Until the study of the extent of the project's contribution to the transport of bacteria, if any, is conducted, the Commission lacks the information to design or evaluate further measures beyond the study itself. Alternative projects that would provide power for use in the summer of 2001 and beyond are needed in addition to the HBGS project in order to further close the gap between supply and upcoming summer's peak demands.

2. Further the benefits of the project—significant new generating capacity which helps meet the peak summer electricity needs—are overriding considerations in approving the project at this time and outweigh what may be a significant impact.

3. With respect to the potential environmental impacts of the proposed Poseidon desalination project, that project is within the authority of the City of Huntington Beach. Application for the appropriate permits has been made to the City and an environmental impact study is or will be undertaken. From the information provided by that study, the City can and should be adopt changes or mitigations in the project to mitigate any environmental impacts.

4. As to all other significant effects identified in this proceeding, changes or alterations have been required by conditions or incorporated into the project which mitigate or avoid each of those significant effects.

These findings regarding the potentially significant impact and the Commission's approval of the HBGS projects are consistent with the Governor's direction in Executive Order D-28-01 to "follow substantive requirements designed to achieve environmental protection and the protection of public health and safety to the maximum extent consistent with the prompt execution of those executive orders [requiring action to improve the supply of electricity].

CONDITIONS OF CERTIFICATION

WATER QUALITY-1: Prior to operation of Units 3 and 4, the project owner will update and implement the HBGS Stormwater Pollution Prevention Plan, and Spill Prevention Control and Counter Measure Plan based on recommendations by the City of Huntington Beach to comply with all requirements of federal, state and local agencies as specified in NPDES No. CA0001163, Order No. 00-5, including Municipal Code Title 14 requirements for the protection of water quality. The applicant will work in cooperation with the City of Huntington Beach to determine what changes are necessary to bring the facility in compliance with local requirements. No stormwater runoff or industrial waste discharge from HBGS is to be discharged to surrounding wetlands or sensitive habitat. All recommended improvements and maintenance specified by the City of Huntington Beach will be implemented by the

project owner prior to operation of Units 3 and 4 and during the units operation. All structural improvements and or modifications must be completed by the beginning of the rainy season, November 1, 2001.

Immediately following certification by the Energy Commission, the project owner will submit the HBGS Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasure Plan to the City of Huntington Beach for their review and determination of compliance with the City's Municipal Code Title 14.

Verification: No less than 30 days after certification the project owner will submit to the CEC CPM and City of Huntington Beach a copy of the revised plans and **Verification** from the City of Huntington Beach that the revised plans comply with all applicable local requirements and obtain CEC CPM approval for the revised plans prior to operation of Units 3 and 4. All structural improvements and or modifications specified in the revised plans must be completed by the beginning of the rainy season, November 1, 2001.

WATER QUALITY-2: Prior to commercial operation of Units 3 and 4, the project owner shall execute a water service agreement with the City of Huntington Beach's Water Department that reflects all terms and conditions of municipal water service. As required by the City, the project owner will conduct or cause to occur supply and reservoir studies required to verify or identify if any upgrades or modifications to the existing system are necessary to serve HBGS. The project owner will fund all capital and administrative costs associated with the planning, design and building of upgrades or improvements to the City's existing system necessary to service any increased demands of HBGS, including those incurred by the City. Prior to commercial operation of Units 3 and 4, all specified upgrades or modifications identified in this study will be implemented.

The project owner will submit a copy of the water service agreement to the CEC CPM and include details of the City's recommended upgrades or modifications required, costs, schedule for the implementation of these improvements, and any mitigation necessary to address impacts associated with these upgrades or modifications.

Verification: Within 30 days of Commission certification, the project owner will submit copies of the executed water service agreement, and the results of the approved supply and reservoir studies to the CEC CPM. Prior to commercial operation of Units 3 & 4, the project owner will submit verification from the City of Huntington Beach that all necessary upgrades or modifications have been completed as specified in the studies.

WATER QUALITY-3: The project owner will participate in the Stakeholder Group established to study HBGS's ocean water intake and waste water discharge impacts on the surf zone water quality, including effects on levels of indicator bacteria and beach closures. The project owner will fund all costs associated with the study(s) undertaken to determine if the HBGS is contributing to the surf zone water quality problems, and implement solutions recommended by study results, as determined by the Energy Commission staff in consultation with the Stakeholder Group. These mitigation measures will be implemented by the project owner within a schedule defined by the Energy Commission Staff, in consultation with the Stakeholders Group, no later than the HBGS NPDES permit renewal on June 30, 2005, or CEC re-certification (whichever comes sooner). This condition does not intend to require the

project owner to conduct duplicative studies. The project owner may cost-share on any study(ies) undertaken, as appropriate.

Verification: Within 30 days after the final approval of the final monitoring and study plan by the CEC Water Resources Technical Staff and CPM, the project owner will submit a recommended schedule for the completion of all required mitigation measures to the CEC CPM for review and approval. The project owner shall provide a letter of verification to the CEC CPM that these methods have been implemented or completed within 15 days after their implementation or completion but no later than the HBGS NPDES permit renewal on June 30, 2005, or CEC Re-certification whichever is sooner.

WATER QUALITY-4: The project owner will provide a check for $1 million to the Center For Natural Lands Management (contact: Ms. Sherry Teresa, Executive Director, 425 E. Alvarado Street, Suite H, Fallbrook, CA 92028-2960) to establish the HBGS Water Quality Trust Account to administer and conduct the approved study(s) specified in Soil & Water 3 above. All payments from the trust account must be authorized by the CEC CPM. The $1 million is for development of study need and protocol, Technical Advisory Group (TAG), and to conduct the study(s). Unspent funds and interest will be returned to the project owner or additional funds maybe required. Any required mitigation that is a result of the HBGS will be paid for by the project owner and be in addition to funds ($1 Million) discussed here.

Verification: No later than 30 days prior to commercial operation of Units 3 and 4, the project owner will provide written verification from the Center for Natural Lands Management to the CEC CPM that 1) a check for $1 Million was provided to the Center, and 2) the HBGS Water Quality Trust Account was established.

WATER QUALITY-5: Secondary containment will be designed and operated for the urea reactor tank to hold 110 percent of the capacity of the largest tank plus the freeboard precipitation of a 24 hour, 25-year storm event or other specified storm event standard appropriate for this site.

Verification: No more than two weeks after the installment of the urea tank reactor, the applicant will provide verification from the Santa Ana RWQCB that required secondary containment is installed and operational.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WATER QUALITY & SOILS

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Clean Water Act; 33 U.S.C. §1251 et seq.	Regulates discharges of wastewater and stormwater. Applies to wastewater discharged from cooling tower basins and stormwater runoff. These discharges are subject to NPDES permits obtained through the RWQCB at the state level.
STATE	
Porter Cologne Water Quality Control Act, Water Code §13000 et seq.	Established jurisdiction of nine RWQCBs to control pollutant discharges to surface and groundwater.
SWRCB Water Quality Order Nos. 91-13-DWQ and 92-08-DWQ	Regulates industrial stormwater discharges during construction and operation. These discharges subject to NPDES permits obtained through the RWQCB.
Safe Drinking Water and Toxic Enforcement Act (Prop. 65)	Prohibits the discharge of any substance known to cause cancer or birth defects to sources of drinking water.
LOCAL	

WATER RESOURCES

	POWER PLANT SITE	SURROUNDING SETTING	CUMULATIVE IMPACTS	LORS COMPLIANCE
Water Supply Policy	None	None	None	Yes
	Operation: As proposed, the HBGS will increase the demand for ocean and potable water to serve Units 3 and 4. Under normal operations, Units 3 and 4 will require 176,000 gpm (253.4 mgd) of ocean water for cooling. The use of ocean water conforms to the State Water Resources Board policy regarding power plant water sources. The Retool Project will require approximately 50 percent more potable water from the City of Huntington Beach for operational uses. City of Huntington Beach indicated that the applicant needs to contract with the City for water supply. *References: SA p. 263.*			

WATER RESOURCES – GENERAL

The proposed HBGS Retooling Project will use existing intake and outfall structures (constructed in the late 1950s) to supply Units 3 and 4 with cooling water from the Pacific Ocean. Designed to serve Units 1 through 4, the existing circulating cooling water system consists of a 14-foot diameter intake structure, intake and traveling screens, pumps, and a 21-foot diameter discharge pipe. Located approximately 1,650 feet offshore in roughly 27 feet of water (mean low low water), the intake structure rises 15.8 feet above the ocean floor and is equipped with a velocity cap. Maximum mean velocity specified in the NPDES permit at the intake is 2.0 feet per second. With Units 1 and 2 operating, the discharge velocity is 1.1 ft/s.

Eight circulator pumps can deliver up to 44,000 gpm (507 mgd) each for a total capacity of 352,000 gpm (4056 mgd). Currently, 176,000 gpm of circulating water and boiler component cooling water is required for Units 1 and 2. The water is carried through a concrete conduit from the intake point into a screening facility. The initial screen system is designed to remove marine life and debris, while the traveling screens remove smaller debris and marine organisms. The Discharge structure is located approximately 1,500 feet off shore in water 25 feet deep, about 350 feet from the intake structure. With a diameter of 21-feet, the discharge pipe rises approximately 15 feet above the ocean floor (SARWQCB 2000).

Water Supply Policy

State Water Resources Control Board Resolution 75-58, discourages the use of fresh inland water for power plant cooling and prioritizes the source water of power plant cooling water: (1) wastewater discharge to the ocean, (2) ocean water, (3) brackish water from natural sources or irrigation return flow, (4) inland waste waters of low TDS, and, lastly, (5) other inland waters.

As proposed, the HBGS will increase the demand for ocean and potable water to serve Units 3 and 4. Under normal operations, Units 3 and 4 will require 176,000 gpm (253.4 mgd) of ocean water for

cooling, doubling the current water demands for the power plant (AES 2000, p. 3.4-4; 3.4-6) to 352,000 gpm (506,000 mgd) on average and peak (AES 2000, Table 5.5-21). According to the applicant, Units 1 and 2 will serve intermediate loads and Unit 5 will primarily serve peaking loads (AES 2000, p. 3.1-1) once Units 3 & 4 are operational. The Applicant reported no water use for Unit 5.

In their revised total municipal water demand estimates, AES indicates that HBGS will require 0.367 to 0.637 mgd (AES, Data Response #52, February 23, 2001). This represents an increase of approximately 50 percent over current demand based on estimates given in February 23, 2001 Date Response #52 submittal of 0.285 mgd average and 0.445 mgd peak. Make-up water for the steam turbines must first be treated to produce high purity demineralized water. Treatment includes reverse osmosis and electrical deionization.

In their letter dated Dec. 21, 2000, the City of Huntington Beach indicated that the applicant needs to contract with the City for water supply and reservoir studies required to verify or identify if any upgrades or modifications to the existing system are necessary to serve HBGS. According to the City, these studies are required because of changes to and increased demands on the system that supplies City water to HBGS since Units 3 and 4 were retired in 1995. Staff concurs and recommends Soil & Water 2 (below) to address this needed analysis and the need to determine if any modifications are required to the existing system to serve Units 3 & 4

Cumulative Impacts

Although a proposed project may not result in any direct or indirect adverse impacts, it may contribute to cumulative adverse impacts when considered with other proposed development in an area. To the extent that such an impact is probable, a developer may be required to mitigate the increment of the impact attributable their proposed project. Staff is aware of one other development with the potential to cause a cumulative impact when considered in relationship with HBGS.

Poseidon Resources Corporation (Poseidon) has submitted an application to the City of Huntington Beach to construct and operate the Seawater Desalination Project at AES' Huntington Beach Generating Station. According to a brief description supplied to staff by City of Huntington Beach representative, this project will use wastewater discharge from the power plant as its source water and return its saltwater by-product to the power plants discharge conduit. Many of the other facilities at the HBGS will be utilized for operation of the desalination facility.

HBGS' current NPDES permit does not include this desalination facility. Changes to the physical or chemical characteristics of HBGS discharge resulting from the construction and operation of the desalination facility will require the existing permit be re-evaluated and may require the existing NPDES permit be modified, revoked or re-issued. Based on information available to staff there is the potential for a cumulative impact to occur; however, inadequate information is available to determine the extent of the impact.

Impacts associated with the Poseidon desalination facility will be evaluated by the City of Huntington Beach, the Santa Ana RWQCB and other appropriate agencies as part of their permitting processes and the city's CEQA analysis of the proposal. In order to approve the desalination facility, the City will address mitigation of any direct, indirect and cumulative environmental impacts from the development of the desalination facility at the HBGS site.

Findings

There are no significant water resources impacts.

CONDITIONS OF CERTIFICATION

None

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WATER RESOURCES

APPLICABLE LAW	DESCRIPTION
FEDERAL	
STATE	
State Water Resources Control Board Policy 75 – 78; California Water Code, Sections 461 and 13552, and by Water Commission Resolution 77-1	SWRCB Resolution 75-58, discourages the use of fresh inland water for power plant cooling and prioritizes the source water of power plant cooling water: (1) wastewater discharge to the ocean, (2) ocean water, (3) brackish water from natural sources or irrigation return flow, (4) inland waste waters of low TDS, and, lastly, (5) other inland waters.
APPLICABLE LAW WATER RESOURCES	**DESCRIPTION**
LOCAL	

ALTERNATIVES

	POWER PLANT SITE	LINEAR FACILITIES	SURROUNDING SETTING	CUMULATIVE IMPACTS
Alternative Sites	THE PRE-EXISTING POWER PLANT SITE IS PREFERABLE TO ANY ALTERNATIVE			
	No alternative site is preferable to the existing site because it maximizes use of existing transmission and other infrastructure. The proposed site creates no impacts that cannot be mitigated to a level of insignificance, except potentially nighttime construction noise that has been mitigated to the extent feasible. *References: SA pp. 331-337.*			
Alternative Design	NO ALTERNATIVE DESIGN IS PREFERABLE			
	AES is leaving the existing equipment in place, adding emission control technology so that Units 3 and 4 are far less polluting than their former configuration. For the objective of contributing generation to aid California's electricity supply emergency beginning in summer 2001, no alternative design is either feasible or preferable. *Reference: SA pp. 331-337.*			
Alternative Technology	NO ALTERNATIVE TECHNOLOGY IS PREFERABLE & FEASIBLE			
	AES is leaving the existing equipment in place, adding emission control technology so that Units 3 and 4 are far less polluting than their former configuration. For the objective of contributing generation to aid California's electricity supply emergency beginning in summer 2001, no alternative technology is either feasible or preferable. *References: AFC 5.3; SA p. 516-517.*			
"No Project" Alternative	THE "NO PROJECT" ALTERNATIVE IS INFERIOR TO PROPOSED PROJECT			
	The "no project" alternative and determined that it would make less efficient use of the region's infrastructure and energy resources. Without retooling of these existing units, AES would operate the existing power plant at times of peak demand particularly in the summer of 2001. Electricity demand, which is expected to grow in Southern California in general and in Orange Counties in particular, would be met either by increased use of existing facilities or the development of other new power plants. California's pressing need for new generating capacity would not be met by the "no project" alternative. The "no project" alternative would eliminate the expected economic benefits which the proposed project would bring to City of Huntington Beach and Orange County. *Reference: AFC 5.1; SA P. 514.*			

ALTERNATIVES – GENERAL

The Energy Commission's Power Plant Siting Regulatory Program is a "certified regulatory program" under CEQA. With regard to the "Alternatives" analysis required in a certified siting proceeding, the CEQA Guidelines (Cal. Code Regs., tit. 14, §15252) state that the environmental documentation shall include either:

- Alternatives to the activity and mitigation measures to avoid or reduce any significant or potentially significant effects that the project might have on the environment, or
- A statement that the agency's review of the project showed that the project would not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment. This statement shall be supported by a checklist or other documentation to show the possible effects that the agency examined in reaching this conclusion."

The Warren-Alquist Act specifies that an Application for Certification of a natural gas fired power plant "modification" (such as the AES project) is not required to provide any information *in its application* on alternative *sites* for the proposed facility. (Pub. Resources Code, §25540.6(a) and (b)). However, the Energy Commission's Siting Regulations (Cal. Code Regs., tit. 20, §1765) require that:

> "At the hearings . . . on an application exempt from the [Notice Of Intent] requirements pursuant to Public Resources Code section 25540.6, the parties shall present information on the feasibility of available site and facility alternatives to the applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment. . . .

In light of these provisions, AES presented in its AFC an alternatives analysis, excluding alternative sites. The Energy Commission staff presented information in its Staff Assessment on the "feasibility of available site and facility alternatives to the applicant's proposal that substantially lessen the significant adverse impacts of the proposal on the environment" (Cal. Code Regs., tit. 20, §1765). Staff also analyzed whether there are any feasible alternative designs or alternative technologies, including the "no project alternative," that may be capable of reducing or avoiding any potential impacts of the proposed project while achieving its major objectives.

Alternative Sites

Consistent with the CEQA Guidelines, the consideration of alternative sites was guided by whether most project objectives could be accomplished at alternative sites and whether locating the project at an alternative site would substantially lessen any identified potential impacts of the project (Cal. Code Regs., tit. 14 §15126.6(a)).

AES's basic objectives are to provide economically competitive electricity in Southern California while minimizing impacts and costs by making use of an existing power plant site and related infrastructure to the extent feasible. The project would make use of much of the infrastructure of the existing site, the

existing boilers and generating units, the existing water supply, and access to the adjacent SCE switchyard to connect to the transmission grid.

The Commission concludes that an alternative site would not be preferable to the proposed site, and a more detailed alternative site analysis is not needed.

Alternative Design /Alternative Technology

Demand Side Management

One alternative to a power generation project could be programs to reduce energy consumption. These programs are typically called “energy efficiency,” “conservation,” or “demand side management” programs. One goal of these programs is to reduce overall electricity use; some programs also attempt to shift such energy use to off-peak periods.

The Energy Commission is responsible for several such programs, the most notable of which are energy efficiency standards for new buildings and for major appliances. The California Public Utilities Commission supervises various demand side management programs administered by the regulated utilities, and many municipal electric utilities have their own demand side management programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation.

The Energy Commission is also responsible for determining what the state’s energy needs are in the future, using 5 and 12 year forecasts of both energy supply and demand. The Commission calculates the energy use reduction measures discussed above into these forecasts when determining what future electricity needs are, and how much additional generation will be necessary to satisfy the state’s needs.

The Warren-Alquist Act prohibits the agency, in its alternatives analysis, from considering such conservation programs to be alternatives to a proposed generation project (Pub. Resources Code, §25305(c)). This is due to the fact such programs have already been accounted for in the “integrated assessment of need,” and the programs would not in themselves be sufficient to substitute for the additional generation calculated to be needed.

The Warren-Alquist Act was amended in 1999 to delete the necessity of a Commission finding of “need” in power plant licensing cases. Nevertheless, the Commission’s most recent need determination, adopted in 1997, makes it abundantly clear that conservation programs alone can not displace the need for power generation for California’s growing economy. (SA p. 334)

Generation Technology Alternatives

Staff compared various alternative technologies with the proposed project, scaled to meet the project’s objectives and time frame. Technologies examined were those principal electricity generation technologies that do not burn fossil fuels such as geothermal, solar and wind. Each of these technologies could be attractive from an environmental perspective because of the absence or reduced level of air pollutant emissions.

Solar and wind resources require large land areas in order to generate 50 megawatts of electricity. Specifically, utility-scale solar thermal projects require between four and ten acres per megawatt depending on the type of system (parabolic trough, parabolic dish, or central receiver) (CEC 1996, pp. B.15.1-2). A project comparable to the proposed 450 megawatt retooling project would require a minimum of 1,800 acres, or more than 35 times the amount of space occupied by the 53-acre parcel, of which the project is a part. Wind generation "farms" generally require about 17 acres per megawatt, and 450 megawatts would require in excess of 7,600 acres, more than 150 times the amount of space occupied by the 53-acre parcel (CEC 1996, pp. B.16.1).

Solar and wind technologies have the potential for significant land use impacts due to the large land areas required. Limited land is available for immediate solar or wind energy development along the southern California coast. Nor has it been demonstrated that solar or wind generation capacity would be feasible in the project vicinity. Such projects involve land use issues, moreover, that could limit the size and feasibility of such alternative generation sources, and could affect the timing of such facilities becoming available if they were proposed. In addition, a key objective of this project is to supply electricity during the Summer 2001 peak demand period. Development of solar or wind facilities would not be feasible within such a short time period. Therefore, such facilities do not provide an alternative to the proposed project.

Geothermal resources are available in limited areas of California, including the Geysers area northern California (CEC 2000). No significant geothermal resources are available in the Huntington Beach area. While development of additional geothermal resources in California is possible, geothermal power is not a feasible alternative to the proposed project.

"No Project" Alternative

One of the project objectives is to complete the project on schedule to meet Summer 2001 peak load demands. The process of identifying an alternative site, preparing and processing an application, and construction of a facility would involve substantial time periods that would preclude the applicant from satisfying this objective. Nor would the development of an undeveloped site satisfy another objective, which is to utilize existing infrastructure in terms of gas supply, electrical transmission, water supply and wastewater streams.

This analysis of alternatives is governed by the "rule of reason" as stated in the CEQA Guidelines, which requires that project alternatives satisfy most of the basic objectives of the project. Identification of new undeveloped sites as alternatives to the HBGS site could not feasibly accomplish this result. No project identified as an alternative site, and not already planned, could feasibly be licensed and constructed to be on-line in the summer of 2001.

Findings

The Commission has analyzed in alternatives to the project design and related facilities, alternative technologies, and the "no project" alternative. Developing the project at an alternative site would not

allow AES to make use of infrastructure at the existing site, one of the objectives of the project, and would not substantially lessen the potential impacts of the project which are mitigated to insignificance by the Conditions of Certification. Plus, the facility could not come on line in the summer of 2001 as critically needed. The Commission does not believe that energy efficiency measures and alternative technologies (geothermal, solar, and wind) present feasible alternatives to the proposed project. The "no project" alternative will not meet urgent California electricity demand in a timely manner and will cause the lose of local economic benefits. Therefore, the "no project" alternative is inferior to the proposed project.

EFFICIENCY

Local/Regional Energy Supplies	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Natural gas fuel will be supplied to the project by SoCalGas pipeline (AES 2000a, AFC §§ 1.3.3, 3.4.6, 3.7.1, 3.9.2.6.3). This line has proven to be of sufficient size to serve the HBGS, and should provide adequate access to natural gas fuel. There is no real likelihood that the Retool Project will require the development of additional energy supply capacity. *References: SA pp. 314-315*
Energy Consumption Rate	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Energy Commission predictions are that natural gas supplies will be adequate for many years into the future. It is therefore highly unlikely that the Retool Project could pose a substantial increase in demand for natural gas in California. *Reference: SA pp. 314-315.*

EFFICIENCY - GENERAL

CEQA Guidelines state that the environmental analysis "…shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy" (Cal. Code Regs., tit. 14, § 15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project's energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code regs., tit. 14, § 15000 et seq., Appendix F).

AES Huntington Beach LLC (AES) proposes to retool and return to service the existing Huntington Beach Units 3 and 4 power plants to generate load following and peaking power and provide ancillary services, selling directly to customers via contract and on the spot market (AES 2000a, AFC §§ 2.2, 3.4.1, 3.9.2.1, 3.9.2.1.1, 3.9.2.1.2, 3.9.2.6). (Note that the project's nominal rating of 450 MW, or 225 MW per unit, is based upon past experience operating these units. The project's actual maximum generating capacity may differ from this figure.) The Retool Project will involve refurbishing and upgrading the boilers and steam turbines, adding selective catalytic reduction (SCR) to control air emissions, and returning the units to service by the summer of 2001 (AES 2000a, AFC §§ 1.1, 1.2, 1.3.2, 3.4.1, 3.4.2, 3.4.3, 3.4.5).

Local/Regional Energy Supplies

Natural gas fuel will be supplied to the project by the existing 18-inch diameter pipeline that supplies the HBGS from an existing 30-inch diameter SoCalGas pipeline (AES 2000a, AFC §§ 1.3.3, 3.4.6, 3.7.1, 3.9.2.6.3). This line has proven to be of sufficient size to serve the HBGS, and should provide

adequate access to natural gas fuel. There is no real likelihood that the Retool Project will require the development of additional energy supply capacity.

Energy Consumption Rate

Any power plant large enough to fall under Energy Commission siting jurisdiction will consume large amounts of energy. The Retool Project will burn natural gas at a nominal rate up to 6.3 billion Btu per year HHV (higher heating value)(AES 2000a, AFC § 3.4.1). This is a substantial rate of energy consumption, and holds the potential to impact energy supplies.

Under expected project conditions, electricity will be generated at a full load efficiency of 36 to 37 percent HHV (AES 2000a, AFC §§ 1.3.2, 3.4.1; Appendix A). This compares favorably to the average fuel efficiency of many typical, older California utility company steam power plants, commonly used today for peaking power, at approximately 32 percent HHV.

The applicant has described its sources of supply of natural gas for the Retool Project (AES 2000a, AFC §§ 1.3.3, 3.4.6, 3.7.1, 3.9.2.6.3, 3.9.4, 3.11.5, 4.3.3). The project will burn natural gas from the existing Southern California Gas Company (SoCalGas) pipeline that has served (and continues to serve) the existing HBGS. The SoCalGas gas supply infrastructure is extensive, offering access to vast reserves of gas from California, the Rocky Mountains, Canada and the Southwest. This source represents far more gas than would be required for a project of this size. Energy Commission predictions are that natural gas supplies will be adequate for many years into the future. It is therefore highly unlikely that the Retool Project could pose a substantial increase in demand for natural gas in California. (SA pp. 314-315)

No standards apply to the efficiency of the Huntington Beach Units 3 & 4 Retool Project or other non-cogeneration projects. (SA p. 315)

Cumulative Impacts

Nearby power plant projects include the Nueva Azalea Project in South Gate (00-AFC-3), the planned Long Beach District Energy Facility, a planned expansion or modernization of the Redondo Beach Generating Station, and the El Segundo Power Redevelopment Project (00-AFC-14). The Applicant also refers to other non-power plant projects in the Los Angeles basin (AES 2000a, AFC § 5.18.2). The applicants of these power plant projects will be required to address fuel supply impacts when those projects are presented to the Energy Commission. None of the non-power plant projects are known to pose any threats of impacts on the electric system or the natural gas supply system. Construction and operation of the Retool Project will not bring about cumulative impacts, in the form of additional fuel consumption, that would not have occurred but for the Retool Project. Any peaking power brought on-line by the summer of 2001 would not be more efficient. Thus, no indirect impacts are likely. (SA p. 316.)

Finding

Without Conditions of Certification, the project conforms to applicable laws related to efficiency; and all potential adverse impacts regarding the efficient consumption of energy will be mitigated to insignificance by other Conditions of Certification of this Decision.

CONDITIONS OF CERTIFICATION

None.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

EFFICIENCY

APPLICABLE LAW	DESCRIPTION
STATE	
Title 14, California Code of Regulations, § 15126.4(a)(1)	CEQA Guidelines state that the environmental analysis "…shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy" (Cal. Code Regs., tit. 14, § 15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project's energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code Regs., tit. 14, § 15000 et seq., Appendix F).

FACILITY DESIGN

Engineering - General	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** To protect public health and safety as well as the viability of the project, the new applicable power plant equipment, pipelines, and other non-transmission line structures shall be designed and constructed in accordance with the 1998 California Building Code, or its successor. The Energy Commission's delegate Chief Building Official shall review and approve the relevant design criteria and plans submitted by AES and conduct all necessary inspections. **CONDITIONS:** AES shall construct the project using the most recent California Building Code with the oversight and approval of the local Chief Building Official; shall assign California registered engineers to the project; and shall pay necessary in-lieu permit fees. Conditions: **GEN–1** through **GEN–8**. *Reference: SA pp. 285.*
Engineering Geology	**COMLIES WITH APPLICABLE LAWS & REGULATIONS** Since no major grading is proposed for the project, no conditions are required. A Foundation Investigation Report for the SCR will be required by CBC section 1804. See **GEN-5**. *Reference: SA p. 281.*
Civil Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** To ensure proper conditions for foundations and other features, any adverse soil or geologic conditions shall be reported and corrected during site grading. **CONDITIONS:** AES shall submit grading plans and erosion/sedimentation control plans, perform inspections and submit as-built plans for approval. Conditions: **CIVIL-1, CIVIL-3, CIVIL-4**. If appropriate, the resident engineer shall stop construction if unknown, adverse geologic conditions are encountered. Condition: **CIVIL-2.** *Reference: SA p.285.*

Structural Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Major structures and equipment are those necessary for power production, costly or time-consuming to repair, or those used for the storage of hazardous materials. The AFC lists the design essential to ensuring that the project is designed in a manner that protects the environment and public health and safety. **CONDITIONS:** For earthquake safety of major structures, foundations, supports, anchorages, and tanks, AES will submit appropriate lateral force calculations, designs and plans to the Chief Building Official for approval. In addition, to ensure the safety of storage tanks, some of which contain hazardous materials, AES will submit plans and specifications to the Chief Building Official for approval. Conditions: **STRUC–1** through **STRUC–4**. *Reference: SA p.285.*
Mechanical Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The mechanical systems include not only the power train with its major components but also water and wastewater treatment facilities, pressure vessels, piping systems and pumps, storage tanks, air compressors, fire protection systems, heating and ventilation, and water and sewage. **CONDITIONS:** To ensure the safety of piping and pressure vessels, some of which transport or store hazardous materials, AES will submit plans and specifications to the Chief Building Official for approval. Heating and air conditioning equipment, as well as plumbing, will be reviewed and inspected by the Chief Building Official. Conditions: **MECH–1** through **MECH–4**. *Reference: SA p. 286.*
Electrical Engineering	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Major electrical features of the project, other than transmission, include generators, power control wiring, protective relays, grounding systems, and site lighting. **CONDITIONS:** For new electric systems or components of 480 volts or higher, AES shall submit plans to the Chief Building Official for approval. Conditions: **ELEC–1, ELEC–2.** *Reference: SA p. 286.*

FACILITY DESIGN – GENERAL

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to facility design and related engineering fields.

CONDITIONS OF CERTIFICATION

CALIFORNIA BUILDING CODE

GEN-1: *With respect to new construction*, the project owner shall design, construct and inspect the project in accordance with the 1998 California Building Code (CBC) and all other applicable LORS in effect at the time initial design plans are submitted to the CBO for review and approval. The CBC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**.

Protocol: In the event that the AES is submitted to the CBO when a successor to the 1998 CBC is in effect, the 1998 CBC provisions identified herein shall be replaced with the applicable successor provisions. *Where, in any specific case, different sections of the code specify different materials, methods of construction, or other requirements, the most restrictive shall govern.* Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

Verification: Within 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) after receipt of the Certificate of Occupancy, the project owner shall submit to the California Energy Commission Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM copy of the Certificate of Occupancy within 30 days of receipt from the CBO [1998 CBC, Section 109 – Certificate of Occupancy.]

DESIGN SCHEDULE

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

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

IN-LIEU PERMIT FEES

GEN-3: The project owner shall make payments to the CBO for design review, plan check and construction inspection, equivalent to the fees listed in the 1998 CBC, Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees. If the CBO has adjusted the CBC fees for design review, plan check and construction inspection, the project owner shall pay the adjusted fees.

Verification: The project owner shall make the required payments to the CBO at the time of submittal of the plans, design calculations, specifications, or soil reports. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

ASSIGNED CALIFORNIA RESIDENT ENGINEER

GEN-4: Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities).]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1**, **TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**. The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

- Monitor construction progress to ensure compliance with LORS;
- Ensure that construction of all the facilities conforms in every material respect to the applicable LORS, these Conditions of Certification, approved plans, and specifications;
- Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;.
- Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;
- 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
- Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

The RE shall have the authority to halt construction and to require changes or remedial work, if the work does not conform to applicable requirements. If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the name, qualifications and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval. If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for

review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

OTHER PROJECT ENGINEERS

GEN-5: Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of powerplant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**.

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, powerplant 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 engineers assigned to the project. [1998 CBC, Section 104.2, Powers and Duties of Building Official.]

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

A: The civil engineer shall:

- Design, or be responsible for design, stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities. 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
- Provide consultation to the RE during the construction phase of the project, and recommend changes in the design of the civil works facilities and changes in the construction procedures.

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

- Review all the engineering geology reports, and prepare final soils grading report;
- Prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;
- Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, section 3317, Grading Inspections;

- Recommend field changes to the civil engineer and RE;
- Review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load; and,
- Prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18 section 1804, Foundation Investigations.

This engineer shall be authorized to halt earthwork and to require changes; if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations. [1998 CBC, section 104.2.4, Stop orders.]

C: The design engineer shall:

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

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

E: The electrical engineer shall:

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

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval. If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

ASSIGNED INSPECTOR

GEN-6: Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 1998 CBC, Chapter 17, Section 1701, Special Inspections, Section, 1701.5 Type of Work (requiring special inspection), and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**.

The special inspector shall:

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

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

Verification: At least 10 days prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

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

STATUS REPORT

GEN-7: The project owner shall keep the CBO informed regarding the status of engineering and construction. If any discrepancy in design and/or construction is discovered, the project owner shall document the discrepancy and recommend the corrective action required. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy 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.

AS-BUILT APPROVAL

GEN-8: The project owner shall obtain the CBO's final approval of all completed work. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the "as-built" and "as graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings [1998 CBC, Section 108, Inspections.]

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, (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.

GRADING PLAN- EROSION CONTROL PLAN

CIVIL-1: Prior to the start of site grading, the project owner shall submit to the CBO for review and approval the following:

- Design of the proposed drainage structures and the grading plan;
- An erosion and sedimentation control plan;
- Related calculations and specifications, signed and stamped by the responsible civil engineer; and
- Soils report as required by the 1998 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report and Section 3309.6, Engineering Geology Report.

Verification: At least 15 days prior to the start of site grading, the project owner shall submit the documents described above to the CBO for 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.

UNFORESEEN GEOLOGIC CONDITION

CIVIL-2: The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible geotechnical engineer or civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area. [1998 CBC, Section 104.2.4, Stop orders.]

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

GRADING INSPECTION

CIVIL-3: The project owner shall perform inspections in accordance with the 1998 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations shall be subject to inspection by the CBO and the CPM. If, in the course of inspection, it is discovered that the work is not being done in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

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

AS-BUILT GRADING PLAN & EROISION CONTROL PLAN APPROVAL

CIVIL-4: After completion of finished grading and erosion and sedimentation control and drainage facilities, the project owner shall obtain the CBO's approval of the final "as-graded" grading plans, and final "as-built" plans for the erosion and sedimentation control facilities [1998 CBC, Section 109, Certificate of Occupancy.]

Verification: Within 30 days of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of this report to the CPM in the next Monthly Compliance Report.

LATERAL FORCE PROCEDURE APPROVAL

STRUC-1: Prior to the start of any increment of construction, the project owner shall submit to the CBO for review and approval the proposed dynamic and static lateral force procedures for new project structures and the applicable designs, plans and drawings for the new project structures. [1998 CBC, Section 3401 and Section 3403] Proposed lateral force procedures, designs, plans and drawings shall be those for:

- Dynamic analysis of the lateral force resisting system;
- Major project structures;
- Major foundations, equipment supports and anchorage;
- Large field fabricated tanks; and
- Turbine/generator pedestal.

Protocol: In addition, the project owner shall, prior to the start of any increment of construction, get approval from the CBO of the dynamic and static lateral force procedures proposed for the new project structures to comply with the lateral force provisions of the 1998 CBC. The project owner shall:

- Obtain approval from the CBO of dynamic and static lateral force procedures proposed for the new project structures;
- Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support the new structures shall be filed concurrently with the structure plans, calculations, and specifications [1998 CBC, Section 108.4, Approval Required];
- Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the new structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2, Retention of plans and Section 106.3.2, Submittal documents.]; and
- 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 [1998 CBC, Section 106.3.4, Architect or Engineer of Record.]

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of construction, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission's Decision.

If the CBO discovers non-conformance with the stated requirements, the project owner shall resubmit the corrected plans to the CBO within 20 days of receipt of the nonconforming submittal with a copy of the transmittal letter to the CPM. The project owner shall submit to the CPM a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and are in conformance with the requirements set forth in the applicable LORS.

SPECIAL INSPECTION REPORTS

STRUC-2: The project owner shall submit to the CBO the required number of sets of the following:

- 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);
- Concrete pour sign-off sheets;
- Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
- Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

- Reports covering other structure activities requiring special inspections shall be in accordance with the 1998 CBC, Chapter 17, Section 1701, Special Inspections, Section 1701.5, Type of Work (requiring special inspection), Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

Verification: 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.

FINAL DESIGN CHANGES

STRUC-3: The project owner shall submit to the CBO design changes to the final plans required by the 1998 CBC, Chapter 1, Section 106.3.2, Submittal documents, and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give the CBO prior notice of the intended filing.

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

HAZARDOUS MATERIALS TANK DESIGN

STRUC-4: Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 1998 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC. Chapter 16, Table 16–K of the 1998 CBC requires use of the following seismic design criteria: I = 1.25, I p = 1.5 and I w = 1.15.

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous substances, the project owner shall submit to the CBO for 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.

PIPING PLANS

MECH-1: Prior to the start of any increment of piping construction, the project owner shall submit, for CBO review and approval, the proposed final design drawings, specifications and calculations for each plant piping system (exclude domestic water, refrigeration systems, and small bore piping, i.e., piping and tubing with a diameter less than two and one-half inches). The submittal shall also include the applicable QA/QC procedures. The project owner shall design and install all piping, other than domestic water, refrigeration, and small bore piping to the applicable edition of the CBC. Upon completion of construction of any piping system, the project owner shall request the CBO's inspection approval of said construction [1998 CBC, Section 106.3.2, Submittal documents, Section 108.3, Inspection Requests.] The responsible mechanical engineer shall submit a signed and stamped statement to the CBO when:

- The proposed final design plans, specifications and calculations conform with all of the piping requirements set forth in the Energy Commission's Decision; and

- All of the other piping systems, except domestic water, refrigeration systems and small bore piping have been designed, fabricated and installed in accordance with all applicable ordinances, regulations, laws and industry standards, including, as applicable:

    - 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); and
    - Specific City/County code.

The CBO may require the project owner to employ special inspectors to report directly to the CBO to monitor shop fabrication or equipment installation [1998 CBC, Section 104.2.2, Deputies.]

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of piping construction, the project owner shall submit to the CBO for approval, with a copy of the transmittal letter to the CPM, the above listed documents for that increment of construction of piping systems, including a copy of the signed and stamped engineer's certification of conformance with the Energy Commission's Decision. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

PRESSURE VESSEL CERTIFICATION

MECH-2: For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [1998 CBC, Section 108.3 – Inspection Requests.]

The project owner shall:

- Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
- 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 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for review and approval, final design plans, specifications and calculations, 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 send copies of the CBO plan check approvals to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO's and/or Cal-OSHA inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

HVAC PLANS

MECH-3: Prior to the start of construction of any heating, ventilating, air conditioning (HVAC) or refrigeration system, the project owner shall submit to the CBO for review and approval the design plans, specifications, calculations and quality control procedures for that system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets. The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the applicable edition of the CBC. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications and calculations shall include approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS [1998 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record.]

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, with a copy of the transmittal letter to the CPM. The project owner shall send copies of CBO comments and approvals to the CPM in the next Monthly Compliance Report. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

PLUMBING PLANS

MECH-4: Prior to the start of each increment of plumbing construction, the project owner shall submit for CBO's approval the final design plans, specifications, calculations, and QA/QC procedures for all plumbing systems, potable water systems, drainage systems (including sanitary drain and waste), toilet rooms, building energy conservation systems, and temperature control and ventilation systems, including water and sewer connection permits issued by the local agency. Upon completion of any increment of construction, the project owner shall request the CBO's inspection approval of said construction [1998 CBC, Section 108.3, Inspection Requests, Section 108.4, Approval Required.] The project owner shall design, fabricate and install:

- Plumbing, potable water, all drainage systems, and toilet rooms in accordance with Title 24, California Code of Regulations, Division 5, Part 5 and the California Plumbing Code (or other relevant section(s) of the currently adopted California Plumbing Code and Title 24, California Code of Regulations); and
- Building energy conservation systems and temperature control and ventilation systems in accordance with Title 24, California Code of Regulations, Division 5, Chapter 2-53, Part 2.

The final plans, specifications and calculations shall clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall stamp and sign all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission's Decision.

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any of the above systems, the project owner shall submit to the CBO the final design plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the next Monthly Compliance Report following completion of that increment of construction.

ELECTRICAL EQUIPMENT & SYSTEMS PLANS

ELEC-1: For the 480 volts and higher systems, the project owner shall not begin any increment of electrical construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [1998 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests.] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**. The following activities shall be reported in the Monthly Compliance Report:

- Receipt or delay of major electrical equipment;
- Testing or energization of major electrical equipment; and
- The number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: At least 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for electrical equipment and systems 480 volts and greater, including a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

ELECTRICAL PLANS

ELEC-2: The project owner shall submit to the CBO the required number of copies of items A and B for review and approval and one copy of item C [CBC 1998, Section 106.3.2, Submittal documents.] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1, TSE-2** and **TSE-3** in **TRANSMISSION SYSTEM ENGINEERING**.

A. Final plant design plans to include:

- one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems;
- system grounding drawings;
- general arrangement or conduit drawings; and
- other plans as required by the CBO.

B. Final plant calculations to establish:

- short-circuit ratings of plant equipment;
- ampacity of feeder cables;
- voltage drop in feeder cables
- system grounding requirements;
- coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
- system grounding requirements;
- lighting energy calculations; and
- other reasonable calculations as customarily required by the CBO.

C. 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 15 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical equipment installation, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations, for electrical equipment and systems 480 volts and greater enumerated above, including a copy of the signed and stamped statement from the responsible electrical engineer certifying compliance with the applicable LORS. The project owner shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

FACILITY DESIGN

APPLICABLE LAW	DESCRIPTION
Title 24, California Code of Regulations, which adopts the current edition of the California Building Code (CBC); the 1998 CBC for design of structures; American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code; and National Electrical Manufacturers Association (NEMA) standards.	The applicable LORS for each engineering discipline, civil, structural, mechanical and electrical, are included in the application as part of the engineering appendices, Appendix D and summarized in Section 7, Applicable LORS for construction and design (AES 2000a).

RELIABILITY

Plant Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** AES expects to operate at an overall availability of 90 to 95 percent, well within industry standards. The Huntington Beach Units 3 & 4 Retool Project provides inherent reliability that will be enhanced by redundancy of critical equipment. *References: SA pp. 309.*
Maintainability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Adherence to industry standard inspection and maintenance procedures as part of an overall plant maintenance program will cause predictable levels of availability from year to year. *Reference: SA pp. 307.*
Fuel Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Natural gas will be purchased from Southern California Gas Company, which has vast supplies and a reliable infrastructure to provide fuel to the project. *Reference: SA p. 308.*
Water Availability	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Water for cooling and other plant uses will be obtained from a combination of reliable and adequate sources: ocean water and municipal water.. *Reference: SA p. 308.*
Natural Disasters	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The project site is not within a flood zone. Although located within seismic zone 4, the plant will perform as well as others in the electric power system by complying with the latest seismic design criteria of the California Building Code on new components. See **FACILITY DESIGN.** *Reference: SA pp. 308-309*

RELIABILITY - GENERAL

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Energy Commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation (Cal. Code Regs., tit. 20, § 1752(c)). In past proceedings, the Commission has taken the approach that a project is acceptable if it does not degrade the reliability of the utility system to which it is to be connected. Thus, a project should exhibit reliability at least equal to that of other power plants on that system.

In the regulated monopoly electric industry of past decades, the utility companies assured overall system reliability, in part, by maintaining a "reserve margin." This amounted to having on call, at all times, sufficient generating capacity, in the form of standby power plants, to quickly handle unexpected outages of generating or transmission facilities. The utilities generally maintained a seven- to ten-percent reserve margin.

Now, in the newly restructured competitive electric power industry, the responsibility for maintaining system reliability falls largely to the California Independent System Operator (Cal-ISO) to purchase, dispatch and sell electric power throughout the state. How Cal-ISO will ensure system reliability is currently being determined; protocols are being developed and put in place that will, it is anticipated, allow sufficient reliability to be maintained under the competitive market system. Until the restructured competitive electric power system has undergone a shakeout period, and the effects of varying power plant reliability are understood and compensated for, the Commission believes it prudent to require new power plant owners to continue to build and operate their projects to the level of reliability to which all in the industry have become accustomed. (SA pp. 473 – 474.)

Finding

Without Conditions of Certification, the project conforms to industry standard levels of reliability.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

RELIABILITY

APPLICABLE LAW	DESCRIPTION
None	

TRANSMISSION LINE SAFETY & NUISANCE

Electric & Magnetic Fields	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** Since electric or magnetic field health effects have neither been established nor ruled out for lines such as those proposed for this project, the public health significance of any project-related field exposure cannot be characterized with certainty. The short-term exposures associated with the proposed and the other lines in its field impact area are typical of similar SCE lines. The long-term residential magnetic exposure primarily at the root of the present health concern will be insignificant in the case of the proposed project since the lines will be located entirely within the project site. **CONDITION:** AES shall operate the transmission line in accordance with the CPUC's G0 – 95 and SCE's EMF-reduction measures. Condition: **TSLN-1.**
Aviation Safety	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** The project will not adversely impact aviation safety since the existing transmission lines at the switchyard have not historically caused an impact to aviation.
Radio & TV Interference	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** The proposed transmission lines will have a low corona effect, thus not causing radio and TV signal interference. **CONDITION:** AES shall make a reasonable effort to identify and correct complaints of radio and TV interference. Condition: **TLSN-2**
Audible Noise	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** The proposed transmission lines will not add to audible noise due to their low corona design and materials.
Fire Hazard	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** Since the proposed transmission lines are located entirely within the site and away from combustible materials, there is no significant fire risk from the transmission lines.
Shocks	**COMPLIES WITH APPLICABLE LAW & REGULATIONS** By designing and operating the transmission lines with the clearance and grounding requirements of CPUC General Order 95 (GO-95) and SCE's standards, there will not be a significant risk of hazardous or nuisance shocks.

TRANSMISSION LINE SAFETY & NUISANCE – GENERAL

The Warren Alquist Act requires the Commission to "prepare a written decision … which includes:

(a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety, [and]

(d)(1) Findings regarding the conformity of the proposed site and related facilities…with public safety standards…and with other relevant local, regional, state and federal standards, ordinances, or laws…" (Pub. Resources Code, § 25523).

The Retool Project will consist of two out of service 225 megawatt (MW) nominal output units (units 3 & 4) for a total nominal output of 450 MW. At present each unit is connected to an existing, 246 MVA, 13.8 kV to 230 kV step-up transformer bank (consisting of three single phase, 82 MVA, 13.8/132.8 kV transformers). The high voltage terminals of the transformer bank are connected to the existing Huntington Beach 230 kV switchyard of SCE located within the boundary of the Huntington Beach Generating Station (HBGS) by overhead conductors and through a 1200 ampere motor operated disconnect switch (AESHB 2000a, AFC page 3.4-5). The SCE HB 230 kV switchyard consists of double bus construction (north & south), each bus sectionalized by a circuit breaker and connected to two gang disconnect switches into A & B sections with each section normally carrying a generating unit and two outgoing 230 kV transmission lines to SCE's 230 kV Ellis substation. The disconnect switch for Unit 3 transformer terminals is connected to section B of the north bus and the disconnect switch for Unit 4 transformer terminals is connected to section B of the south bus (AESHB 2000a, AFC page 3.6-1). This configuration for the interconnection and switchyard is in accordance with good utility practices and is acceptable.

Electric & Magnetic Fields

The possibility of health effects from exposure to electric and magnetic fields has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of considering exposure to both as EMF exposure. The available evidence, as evaluated by California Public Utilities Commission (CPUC) and other regulatory agencies, has not established that such fields pose a significant health hazard to exposed humans. However, the Energy Commission considers it important, as does the CPUC, to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Therefore, in light of present uncertainty, it is appropriate to reduce such fields where feasible, until the issue is better understood. The challenge has been to establish when and how far to reduce them.

While there is considerable uncertainty about the EMF/health effects issue, the following facts have been established from the available information and have been used to establish existing policies:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns relate to the magnetic field.

- The measures employed for such field reduction can affect line safety, reliability, efficiency and maintainability, depending on the type and extent of such measures.

No federal regulations have been established specifying environmental limits on the strengths of fields from power lines. However, the federal government continues to conduct and encourage research necessary for an appropriate policy on the EMF issue.

In the face of the present uncertainty, several states have opted for design-driven regulations ensuring that fields from new lines are generally similar to those from existing lines. Some states (Minnesota, Florida, New York, Montana, and New Jersey) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects. All regulatory agencies believe that health-based limits are inappropriate at this time. They also believe that the present knowledge of the issue does not justify any retrofit of existing lines.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component, whose effects can manifest as radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate building materials to potentially produce the types of health impacts at the root of the present concern. As interest has focused on magnetic fields from high-voltage power lines, it important to note that use of some common household appliances creates short-term exposure to much stronger fields. (National Institute of Environmental Health Services and the U.S Department of Energy 1995.) Scientists have not established which of these types of exposures would be more biologically meaningful in the individual.

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. It required each utility within its jurisdiction to establish EMF-reducing design guidelines for all new or upgraded power lines and related facilities within their respective service areas. The CPUC further established specific limits on the resources to be used in each case for field reduction. Such limitations were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Utilities not within the jurisdiction of the CPUC voluntarily comply with these CPUC requirements. This CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013 of 1989.

In keeping with this CPUC policy, the Energy Commission requires a showing that each proposed line will be designed according to the EMF-reducing design guidelines applicable to the utility service area involved. Since each new line in California is currently required to be designed according to the EMF-reducing guidelines of the utility in the service area involved, their fields are required under existing CPUC policies to be similar to fields from similar lines in that service area.

Since electric fields depend only on applied voltage that will remain the same on the SCE lines to be used, there will be no change in the strengths of the electric fields.

The added power from the proposed units would increase the system's magnetic fields along the rights-of-way since magnetic fields (unlike electric fields) vary with current flow. These higher field strengths are similar to SCE lines of the same voltage and current-carrying capacity. These higher magnetic field strengths are less than the regulatory limits of some states for fields at the edge of the right-of-way.

Since electric or magnetic field health effects have neither been established nor ruled out for lines such as those proposed for this project, the public health significance of any project-related field exposure cannot be characterized with certainty. The short-term exposures associated with the proposed and the other lines in its field impact area are typical of similar SCE lines. The long-term residential magnetic exposure primarily at the root of the present health concern will be insignificant in the case of the proposed project since the lines will be located entirely within the project site. (AFC 2.14.4.1; 2.14.4.2; SA pp. 123-124.)

CONDITION: AES shall operate the transmission line in accordance with the CPUC's G0 – 95 and SCE's EMF-reduction measures. Condition: **TSLN-1.**

Aviation Safety

The existing transmission lines at the HBGS have not historically been a hazard to aviation,

Radio & TV Interference

Radio and TV interference is most commonly caused by irregularities (such as nicks and scrapes on the conductor surface), sharp edges on suspension hardware and other irregularities around the conductor surface. Such interference is usually of concern only for lines of 345 kV or greater. AES's 220 kV transmission line would use a low-corona conductor design, construction, and maintenance methods that should minimize the potential for such interference.

No significant communications interference is expected, as with the existing SCE 220 kV lines designed according to SCE guidelines. Since the lines are to be located entirely onsite, away from area residences, no communication interference is expected from the project. Nonetheless, FCC regulations require each project owner to ensure mitigation of any such communication interference, if it occurs, to the satisfaction of the affected individual.

CONDITION: AES shall make a reasonable effort to identify and correct complaints of radio and TV interference. Condition: **TLSN-2.**

Audible Noise

As with radio and TV interference, the low-corona conductor proposed for The Huntington Beach Units 3 & 4 Retool Project line and currently used in the SCE 220 kV lines will minimize the potential for audible noise. Thus, the transmission lines will not add significantly to existing background noise levels in the project area.

Fire Hazard

Since the transmission lines will be located entirely within the project site and operated according to SCE's fire prevention guidelines, Huntington Beach Units 3 & 4 Retool Project transmission lines do not pose a fire hazard during operation.

Shocks

As with all SCE transmission lines, the connection lines will be designed according to GO-95 requirements against hazardous shocks from direct or indirect human contact with the overhead energized line. Since the transmission lines will be grounded according to SCE requirements, they do not pose a significant risk of on-site nuisance shock. Ensuring GO-95-required ground clearance, as with all SCE lines, will minimize the potential for the electrical charging for which such grounding would be necessary. Therefore, the transmission lines do not pose a hazardous or nuisance shock risk on site.

Cumulative Impacts

The strengths of electric and magnetic fields from the proposed line were calculated (and will be required) to be measured to factor the interactive effects of all area lines. These calculated field strength values, therefore, reflect the cumulative exposure of an individual to fields from all lines within the impact area of the proposed lines. They reflect the implementation of the field-reducing guidelines incorporated in SCE field designs as currently required by the CPUC. There are no significant cumulative impacts.

Finding

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to transmission line safety.

CONDITIONS OF CERTIFICATION

ELECTRIC & MAGNETIC FIELDS MITIGATION

TLSN-1: The project owner shall construct the proposed transmission line according to the requirements of GO-95, GO-52, Title 8, Group 2, Sections 2700 through 2974 of the California Code of Regulations and SCE's EMF-reduction measures arising from CPUC Decision 93-11-013.

Verification: Fifteen days before the start of operation, the project owner shall submit to the Commission's Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the transmission line meets the requirements of GO-95, GO-50, Title 8, Group 2, Sections 2700 through 2974 of the California Code of Regulations, and SCE's EMF reduction guidelines arising from CPUC Decision 93-11-013.

RADIO & TV INTERFERENCE

TLSN-2: The project owner shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the line and related facilities. In addition to any transmission repairs, the relevant corrective actions should include, but shall not be limited to, adjusting or modifying receivers, adjusting or repairing, replacing or adding antennas, antenna signal amplifiers, filters, or lead-in cables.

The project owner shall maintain written records for a period of five years, of all complaints of radio or television interference attributable to operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained. The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

Verification: All reports of line-related complaints shall be summarized and included in the Annual Compliance Report to the CPM.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

TRANSMISSION LINE SAFETY AND NUISANCE

APPLICABLE LAW	DESCRIPTION
FEDERAL	
14 CFR Part 77 – Objects Affecting the Navigation Space	Provides regulates that specify the criteria used by the FAA for determining whether a Notice of Proposed Construction or Alteration is required for potential obstruction hazards.
Title 47 CFR §15.25	Prohibits operation of any devices producing force fields that interfere with radio communications, even if such devices are not intentionally designed to produce radio-frequency energy.
STATE	
CPUC General Order 52	Governs the construction and operation of power and communications lines
CPUC General Order 95	Specifies tree-trimming criteria
Title 14 CCR §1250	Specifies utility-related measures for fire protection.
Title 8 CCR, §2700 et seq.	Establishes requirements and standards for safely installing, operating and maintaining electrical installations and equipment.
LOCAL	
There are no applicable Local LORS for this area.	

TRANSMISSION SYSTEM ENGINEERING

System Reliability	COMPLIES WITH APPLICABLE LAWS & REGULATIONS
	No significant additional new facilities will be required for interconnection of the Retool Project to meet NERC, WSCC, and Cal-ISO reliability criteria. The issuance of the Cal-ISO's final interconnection approval will assure conformance with NERC, WSCC and Cal-ISO reliability criteria. A condition of certification TSE-1h provides for Energy Commission review of the Cal-ISO final interconnection approval letter and the project owner Generator Special Facility Agreement (GSFA). **CONDITION:** AES shall ensure that the design, construction and operation of the proposed transmission facilities will conform to applicable requirements. In addition the AES shall construct its transmission lines in accordance with CPUC GO – 95 and utility industry standards. Conditions: **TSE-1; TSE-2; TSE-3.** **Reference: SA pp. 322-324**

TRANSMISSION SYSTEM ENGINEERING – GENERAL

The Retool Project will consist of two out of service 225 megawatt (MW) nominal output units (units 3 & 4) for a total nominal output of 450 MW. At present each unit is connected to an existing, 246 MVA, 13.8 kV to 230 kV step-up transformer bank (consisting of three single phase, 82 MVA, 13.8/132.8 kV transformers). The high voltage terminals of the transformer bank are connected to the existing Huntington Beach (HB) 230 kV switchyard of SCE located within the boundary of the Huntington Beach Generating Station (HBGS) by overhead conductors and through a 1200 ampere motor operated disconnect switch (AESHB 2000a, AFC page 3.4-5). The SCE HB 230 kV switchyard consists of double bus construction (north & south), each bus sectionalized by a circuit breaker and connected to two gang disconnect switches into A & B sections with each section normally carrying a generating unit and two outgoing 230 kV transmission lines to SCE's 230 kV Ellis substation. The disconnect switch for Unit 3 transformer terminals is connected to section B of the north bus and the disconnect switch for Unit 4 transformer terminals is connected to section B of the south bus (AESHB 2000a, AFC page 3.6-1). This configuration for the interconnection and switchyard is in accordance with good utility practices and is acceptable.

System Reliability

An Operational Interconnection Study (AESHB 2001a, AFC supplemental I, Appendix H, pages i-iii & 1-9) was performed by SCE to identify the system impacts of reconnecting the HBGS Units 3 & 4 to the existing electric grid in the summer of 2001 with no system upgrades and to identify any system upgrades when needed before or after the summer of 2001. The study was performed for two system conditions: (a) 2001 heavy summer load forecast and (b) 2001 light spring load forecast. Under both conditions, the generation in the basin area including all other proposed generation projects in queue up to AES HBGS units 3 & 4 is maximized to identify any potential congestion in the transmission system. The study which included Load Flow study, Transient Stability study, Post-transient Voltage study and Short Circuit study, focused on thermal overloads, voltage deviations, system stability and short circuit duties (with 230 kV buses at the SCE HB switchyard operated in parallel or as split) by applying the applicable reliability criteria.

The study report concludes that Returning AES HBGS units 3 & 4 to service can be accommodated in 2001 without the need for congestion management provided no additional market generators come on line in 2001**.** SCE will allow AES HBGS units 3 & 4 to interconnect by May 1, 2001, to their system provided the project owner pays for all 9 breakers (4 breakers in the Hinson 230 kV substation and 5 breakers in the Villa Park 230 kV substation) with appropriate cost sharing and all engineering requirements made to operate the units in a split bus configuration of the HB 230 kV switchyard along with the 9 breaker replacements. In case the project owner decides to operate the HB 230 kV switchyard buses in parallel, then it will be necessary to replace all 9 breakers and to install TRV capacitors in all ten breakers of the HB 230 kV switchyard prior to energizing units 3 & 4. The fault Duty on the breakers at the Hinson and Villa Park 230 kV substations will be allowed to be violated only on a temporary basis until the breakers can be replaced as soon as practicable, the reason being marginal overload risk during maximum generation conditions.(SA pp. 320-321)

The Operational Interconnection Study for the Retool Project in conjunction with the Cal-ISO's preliminary approval letter indicate there will be no significant transmission facilities, beyond those previously described in the Retool Project AFC, which are within the existing fence lines of the HB 230 kV switchyard, Hinson and Villa Park 230 kV substations.

CUMULATIVE IMPACTS

The Retool Project is located in a major load center, the Huntington Beach basin area, which will minimize potential cumulative impacts on the existing transmission system.

FINDINGS

No significant additional new facilities will be required for interconnection of the Retool Project to meet NERC, WSCC, and Cal-ISO reliability criteria. The power plant switchyard, outlet lines, and termination are acceptable and will comply with LORS assuming the recommended conditions of certification are implemented". The issuance of the Cal-ISO's final interconnection approval will assure conformance with NERC, WSCC and Cal-ISO reliability criteria. A condition of certification, TSE-1h, provides for Energy Commission review of the Cal-ISO final interconnection approval letter and the project owner Generator Special Facility Agreement (GSFA).

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to requirements listed below. The substitution of Compliance Project Manager (CPM) approved "equivalent" equipment and equivalent switchyard configurations is acceptable.

(a) power plant switchyard, outlet line and termination shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95, CPUC Rule 21, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", National Electric Code (NEC), and related Industry Standards.

(b) Beakers and buses in the power plant switchyard (i.e. SCE's existing 230 kV Huntington Beach switchyard) and other switchyards/substations, where applicable, shall be sized to comply with the SCE short circuit study.

(c) The existing Huntington Beach 230 kV switchyard has a double sectionalized bus which shall be operated as either as a split bus or in parallel.

(d) The outlet line will use conductors sufficient to carry full load currents of the generator.

(e) Termination facilities at the interconnection shall comply with applicable Cal-ISO and SCE interconnection standards (SCE Interconnection Handbook and CPUC Rule 21).

(f) 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.

(g) The project owner shall provide a Detailed Facilities Study including a description of remedial action scheme sequencing and timing and an executed Generator Special Facilities Agreement (GSFA) for the transmission interconnection with SCE. The Detailed Facilities Study and GSFA shall be coordinated with and approved by the Cal-ISO.

Verification: At least 30 days prior to start of construction of transmission facilities, the project owner shall submit for approval to the CBO:

(a) Design drawings, specifications and calculations conforming with CPUC General Order 95 and related industry standards, where applicable, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.

(b) For each element of the transmission facilities as identified above, the submittal package to the CPM or CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions" and a statement by the registered engineer in responsible charge (signed and sealed) that the transmission element(s) will conform with CPUC General Order 95, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", the NEC, SCE Interconnection Handbook, CPUC Rule 21 and related industry standards.

(c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements a through h above. The Detailed Facilities Study and GSFA shall concurrently be provided. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CPM approval.

TSE-2 The project owner shall inform the CPM of any impending changes, which may not conform to the requirements 1a through 1h of TSE-1, and have not received CPM approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction

involving changed equipment, transmission facilities or switchyard configurations shall not begin without prior written approval of the changes by the CPM and CBO.

Verification: At least 15 daysf prior to construction of transmission facilities, the project owner shall inform the CPM and CBO of any impending changes which may not conform to requirements of TSE-1 and request approval to implement such changes.

TSE-3 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction and any subsequent CPM approved changes thereto, to ensure conformance with CPUC General Order 95, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", the NEC, SCE Interconnection Handbook, CPUC Rule 21 and related industry standards. In case of non-conformance, the project owner shall inform the CPM 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:

(a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC General Order 95, Title 8, CCR, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", the NEC, SCE Interconnection Handbook, CPUC Rule 21 and related industry standards, and these conditions shall be concurrently provided.

(b) An "as built" engineering description focused on safety provisions of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge.

(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 responsible charge.

LAWS, ORDINANCES, REGULATIONS & STANDARDS

TRANSMISSION SYSTEM ENGINEERING

APPLICABLE LAW	DESCRIPTION
FEDERAL	There are no applicable Federal LORS
STATE	Provides the performance standards used in assessing reliability of the interconnected system.
CPUC General Order 95, Rules for Overhead Electric Line Construction.	Formulates uniform requirements for construction of overhead lines.
CPUC Rule 21	Provides standards for the reliable connection of parallel generating stations connected to participating transmission owners.
Western Systems Coordinating Council (WSCC)	Provides the performance standards used in assessing reliability of the interconnected system.
North American Electric Reliability Council (NERC)	Provides policies, standards, principles and guides to assure the adequacy and security of the electric transmission system.
Cal-ISO	Provides the performance standards used in assessing reliability of the interconnected system.
LOCAL	There are no applicable Local LORS for this area.

WORKER SAFETY

Fire Protection	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** The proposed fire protection system at the site will include fire alarms, detection systems, fire hydrants, water storage, and both primary electric and backup diesel water pumps and hose stations throughout the facility. The system will be designed and operated in accordance with National Fire Protection Association (NFPA) standards and recommendations. Prior to construction and operation of the project, the Huntington Beach Fire Department shall confirm the adequacy of the proposed fire protection systems and plans **CONDITION:** AES shall submit fire protection plans for the construction and operation of the project. Conditions: **WORKER SAFETY-1**, **WORKER SAFETY-2** *References: SA pp. 73-86*
Safety & Injury Prevention	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Construction: During the construction phase of the project, workers will be exposed to hazards typical of construction of a gas-fired combined cycle facility. Construction Safety Orders are promulgated by Cal/OSHA and are applicable to the construction phase of the project **CONDITION:** AES shall prepare a Construction Safety and Health Program for the review and approval of Cal/OSHA and, as appropriate, the City of Huntington Beach Fire Department. Condition: **WORKER SAFETY-1.** Operation: prior to operation, AES shall prepare the Operations Safety and Health Program, which will include an Injury and Illness Prevention Program, an Emergency Action Program/Plan, a Fire Protection and Prevention Program; and a Personal Protective Equipment Program. **CONDITION:** AES shall prepare an Operations Safety and Health Program for the review and approval of Cal/OSHA and, as appropriate, the Huntington Beach Fire Department. Condition: **WORKER SAFETY-1.** *References: SA pp. 73-86.*
Noise	**COMPLIES WITH APPLICABLE LAWS & REGULATIONS** Cal-OSHA regulations provide the maximum noise level over an 8-hour work period is 90 dBA. Areas above 85 dBA need to be posted as high noise level areas and appropriate hearing protection will be provided. AES will also adopt a hearing conservation program in accordance with Cal-OSHA regulations. **CONDITION:** AES shall institute an occupational noise control program to reduce exposure to high levels of construction noise. Condition: **WORKER SAFETY-3**. AES shall conduct an occupational noise survey to identify noise hazardous areas and, if necessary, prepare mitigation in consultation with Cal/OSHA to reduce noise to prescribed limits. Condition: **WORKER SAFETY-4.** *Reference: SA p. 152.*

WORKER SAFETY - GENERAL

The requirements for worker and fire protection are enforced through Federal, State, and local regulations. The State of California Department of Industrial Relations is charged with the responsibility for administering the Cal/OSHA plan. Effective implementation of worker safety programs at a facility is essential to the protection of workers from workplace hazards. These programs are documented through project-specific worker safety plans. Industrial workers at the proposed facility will operate equipment, handle hazardous materials, and face other workplace hazards that may result in accidents or serious injury. The worker safety and fire protection measures proposed for this project are designed to either eliminate or minimize such hazards through special training, use of protective equipment or implementation of procedural controls. (SA pp.73-76)

Fire Protection

The Energy Commission staff reviewed the information provided in the AFC regarding on-site fire protection, which will be adequate for fighting incipient fires. The proposed fire protection system at the site will include fire alarms, detection systems, fire hydrants, water storage, and both primary electric and backup diesel water pumps and hose stations throughout the facility. Fixed fire suppression systems will be installed at pre-determined fire risk areas, such as the transformers, turbine lubrication oil equipment, and cooling tower. The system will be designed and operated in accordance with National Fire Protection Association (NFPA) standards and recommendations. Sprinkler systems will be installed in the Control/Administration Building and Fire Pump Building, as required by NFPA requirements. Hand-held fire extinguishers will be located in accordance with NFPA 10 throughout the facility.

AES will also be required to provide final diagrams and plans of fire protection systems to the Energy Commission and to the Huntington Beach Fire Department, prior to construction and operation of the project, to confirm the adequacy of the proposed fire protection systems and plans. All Fire Department access roads, water mains, and fire hydrants shall be installed and operational during construction in accordance with Article 87 of the Fire Code. A final inspection by the Fire Department will be required to confirm that the facility meets all the Fire and Building Code requirements. These measures are sufficient to ensure adequate protection of workers and the public from impacts associated with fire hazards posed by the proposed facility. (SA p.76)

MITIGATION: AES shall submit fire protection plans for the construction and operation of the project. Conditions: **WORKER SAFETY-1, WORKER SAFETY-2.**

Safety & Injury Prevention

Industrial environments are potentially dangerous. Workers could be exposed to chemical spills, hazardous waste, fires, moving equipment, and confined space entry and egress problems. It is important to have well-defined facility-specific policies and procedures, training, and hazard recognition and control to minimize work place hazards and to protect workers from unavoidable hazards. Energy Commission staff has reviewed AES's proposed measures for protection of workers during construction and operation of the proposed project. These measures are described below. These measures are adequate to protect workers from work place hazards associated with the proposed project and to comply with applicable laws.

Construction: During the construction phase of the project, workers will be exposed to hazards typical of construction of a gas-fired combined cycle facility. Construction Safety Orders are published at Title 8 of the California Code of Regulations beginning with section 1502 (8 CCR § 1502, et seq.). These requirements are promulgated by Cal/OSHA and are applicable to the construction phase of the project. The Construction Safety and Health Program will include the following:

Construction Injury and Illness Prevention Program (8 CCR § 1509)

Construction Fire Protection and Prevention Plan (8 CCR § 1920)

Personal Protective Equipment Program (8 CCR § 1514-1522)

Additional programs include General Industry Safety Orders (8 CCR § 3200-6184), Electrical Safety Orders (8 CCR §2299-2974) and Unfired Pressure Vessel Safety Orders (8 CCR § 450-544). The AFC includes adequate outlines of each of the above programs. Prior to construction of the Huntington Beach Units 3 & 4 Retool Project, detailed programs and plans will be provided pursuant to the Condition of Certification **WORKER SAFETY-1**. (SA p. 86.)

CONDITION: AES shall prepare a Construction Safety and Health Program for the review and approval of Cal/OSHA and, as appropriate, the City of Huntington Beach Fire Department. Condition: **WORKER SAFETY-1.**

Operation: Upon completion of construction and prior to operation, AES shall prepare the Operations Safety and Health Program pursuant to regulatory requirements of Title 8 of the California Code of Regulations, which will include the following programs and plans:

Injury and Illness Prevention Program (8 CCR § 3203)

Emergency Action Program/Plan (8 CCR § 3220);

Fire Protection and Prevention Program (8 CCR § 3221); and;

Personal Protective Equipment Program (8 CCR § 3401-3411)

Additional programs also include General Industry Safety Orders (8 CCR § 3200-6184), Electrical Safety Orders (8 CCR §2299-2974) and Unfired Pressure Vessel Safety Orders (8 CCR § 450-544). The AFC includes adequate outlines of each of the above programs. Cal/OSHA will review AES's program and provide comments as a result of a consultation request. A Cal/OSHA representative will complete a physical survey of the site, analyze work practices, and assess those practices that may likely result in illness or injury. (AFC 6.11.3.2; SA pp. 103-104.)

CONDITION: AES shall prepare an Operations Safety and Health Program for the review and approval of Cal/OSHA and, as appropriate, the City of Huntington Beach Fire Department. Condition: **WORKER SAFETY-2.**

Noise

Construction: The applicant acknowledges the need to protect construction workers from noise hazards, and states that a noise evaluation will be conducted after retooling is complete to ensure that employees are adequately protected in accordance with OSHA/Cal-OSHA requirements (AES 2000a, AFC § 5.12.2.3). To ensure that construction workers are, in fact, adequately protected, Energy

Commission staff has proposed a Condition of Certification (**NOISE-3** renamed **WORKER SAFETY-3**). (SA p. 154.)

CONDITION: AES shall institute an occupational noise control program to reduce exposure to high levels of construction noise. Condition: **WORKER SAFETY-3.**

Operation: The applicant recognizes the need to protect plant operating and maintenance personnel from noise hazards, and has committed to comply with applicable LORS (AES 2000a, AFC § 5.12.2.3). Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection would be required. The applicant would implement a comprehensive hearing conservation program. To ensure that construction workers are, in fact, adequately protected, Energy Commission staff has proposed a Condition of Certification (**NOISE-7** renamed **WORKER SAFETY-4**).

CONDITION: AES shall institute an occupational noise control program to reduce exposure to high levels of operational noise. Condition: **WORKER SAFETY-4.**

Finding

With the implementation of the Conditions of Certification, below, the project conforms to applicable laws related to worker safety.

CONDITIONS OF CERTIFICATION

CONSTRUCTION SAFETY & HEALTH PROGRAM

WORKER SAFETY-1: The project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program, containing the following:

A construction Injury and Illness Prevention Program

A construction Fire Protection and Prevention Plan

A personal Protective Equipment Program

Protocol: The Construction Injury and Illness Prevention Program and the Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders. The Construction Fire Protection and Prevention Plan shall be submitted to the City's of Huntington Beach Fire Department for review and acceptance.

Verification: At least 15 days prior to the start of construction, or a date agreed to by the CPM, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program and the Personal Protective Equipment Program, with a copy of the cover letter transmittal of the programs to Cal/OSHA Consultation Service. The project owner shall provide a letter from the City of Huntington Beach Fire Department stating that they have reviewed and accepted the Construction Fire Protection and Prevention Plan.

OPERATION SAFETY & HEALTH PROGRAM

WORKER SAFETY-2: The project owner shall submit to the CPM a copy of the Project Operation Safety and Health Program containing the following:

An Operation Injury and Illness Prevention Plan

An Emergency Action Plan

On Operation Fire Protection Plan

A Personal Protective Equipment Program

Protocol: The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service for review and comment concerning compliance of the program with all applicable Safety Orders. The operation's Emergency Action Plan and Fire Protection Plan shall be submitted to the City of Huntington Beach Fire Department for review and acceptance. The final versions of the operation Injury and Illness Prevention Plan, Emergency Action Plan, Fire Protection Plan and Personal Protective Equipment Program shall incorporate Cal/OSHA and City of Huntington Beach Fire Department comments.

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM a copy of the final version of the Project Operation Safety & Health Program with a copy of the cover letter to Cal/OSHA''s Consultation Service, and City of Huntington Beach Fire Department comments stating that they have reviewed and accepted the specified elements of the proposed Operation Safety and Health Plan. The project owner shall notify the CPM that the Project Operation Safety and Health Program (Injury and Illness Prevention Plan, Fire Protection Plan, the Emergency Action Plan, and Personal Protective Equipment requirements), including all records and files on accidents and incidents, is present on-site and available for inspection.

WORKER NOISE CONTROL PROGRAM

WORKER SAFETY-3: Prior to the start of project-related ground disturbing activities, the project owner shall submit to the CPM for review a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 15 days prior to the start of project-related ground disturbing activities, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

WORKER NOISE SURVEY

WORKER SAFETY-4: The project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted within 30 days after the facility is in full operation, and shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if

necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

The following conditions were proposed by the City of Huntington Beach and are adopted by the Commission.

FIRE PROTECTION-1:
Fire Protection Systems – Water storage, supply and movement

1. Provide the size(s) of any onsite water storage tank(s), if any, dedicated exclusively for fire service. With respect to any such storage tank, indicate whether the tank is always maintained at its maximum fill capacity. If it is not always maintained at its maximum fill capacity, provide operating information specifying how and when the tank is filled and depleted.

2. If there is currently an onsite water storage tank dedicated exclusively for fire service, indicate whether a multi-purpose water storage tank is integrated into the fire service system that would be available for use during emergencies. If so, indicate whether the storage tank is maintained at its maximum fill capacity. If not, provide detailed operating information specifying how and when the tank is filled and depleted.

3. Provide current detailed information on the fire-system pumps and their associated drivers, i.e., manufacturer data sheets, pump curves, and other performance data. Indicate whether pumps and drivers work in series or parallel.

4. Provide the current fire-flow capacity on a gallon per minute basis that AES maintains onsite and the duration over which that capacity can be sustained before a demand sure is placed on the City's water system.

5. Provide an independent third party consultant, selected by the Huntington Beach Fire Department, to review, comment, evaluate and certify AES fire protection systems. The review, evaluation, certification and all associated costs are to be paid by AES. Provide copies of any reports provided by that consultant service and the certification. Additionally, provide all available reports describing the performance of the fire protection systems, hydrants, tanks, pumps and fixed systems for adequate fulfillment of fire-flow requirements for worst case scenarios.

6. Provide a current detailed plan of the fire water protection fixtures, line sizes and any other appurtenances that are connected to or otherwise integrated into the fire protection system.

7. Provide other fire prevention and protection staples as required by Huntington Beach and Uniform Fire Codes to include but no be limited to:
    - Portable fire extinguishers
    - Designated and posted fire lanes
    - Fire alarm systems with manual pull stations, water flow valve tamper and trouble detection
    - 24 hour supervision
    - Automatic sprinkler systems
    - Barriers to protect key elements of fire protection equipment

FIRE PROTECTION-2
Other Systems, Policies, Plans Programs & Procedures

1. Provide detail of fire protections systems (non-water) to include drawings of those systems with detection, pull stations, panel locations, alarm bells, strobe lights and all other appurtenances associated with detection or suppression systems.

2. Provide, in writing, a “Spill/Release Policy and Procedures Program” and onsite spill mitigation and disposal plans to the City Fire Chief for approval and include a policy with procedures requiring and certifying the immediate reporting of any hazardous material spill or leak to the Huntington Beach Fire Department with follow-up procedures.

3. Provide a written submittal of an “Emergency Response Plan” that includes detailed in-house response actions and associated employee training programs to support qualified employee response to any and all possible emergencies to the Fire Chief for approval and publish when approved.

4. Provide a “Hazardous Waste Contingency Plan” with documentation and drawings to show the location of the hazardous waste storage area, ownership of land that houses the hazardous waste storage area, emergency equipment available, procedures for handling and storing hazardous waste, training and certification provided to employees assigned to handle hazardous waste, labeling requirements of hazardous waste and manifesting procedures for arranging for disposal of hazardous waste.

5. Provide public health and safety plans and programs where required by (LORS) local ordinances and regulations to include all changes related to the retooling to include but not limited to:

    - Hazardous Communication Programs to include Employee Training Plans
    - Spill Prevention Control & Countermeasure Plan (SPCC) if required
    - Personal Protective Equipment Survey and Plan (PPE)
    - Earthquake and Emergency Flood Contingency Plans

- Injury & Illness Prevention Programs as required by Federal and State Regulations and any other plans mentioned in this document
- Chemical Hygiene Plans
- Facility Closure Plans as specified by City specifications
- Solid and Liquid Waste Disposal Control Plans
- Construction Safety and Training Programs

LAWS, ORDINANCES, REGULATIONS & STANDARDS

WORKER SAFETY AND FIRE PROTECTION

APPLICABLE LAW	DESCRIPTION
FEDERAL	
Title 29 CFR §651 et seq.	Established the Occupational Safety and Health Act of 1970 to protect the health and safety of workers
Title 29 CFR §1910 et seq.	Contains the minimum occupational health and safety standards for general industry in the U.S.
Title 29 CFR §1926 et seq.	Contains the minimum occupational health and safety standards for construction industry in the U.S.
Title 29 CFR §1952.170-1952-175 et seq.	Gives California full enforcement responsibility for relevant federal occupational health and safety standards.
Title 49 CFR §192	U.S. Department of Transportation Pipeline Safety Regulations. Adopted by the California Public Utility Commission. Governs the California utilities on design, construction, testing, maintenance, and operation of piping systems.
STATE	
Title 8 CCR §5144	Requirements for respiratory protection programs for construction workers.
Title 8 CCR §1920 et seq.	Regulations for fire prevention during construction.
Title 8 CCR §450-560 et seq.	Applicable requirements of the Division of Industrial Safety, including Unfired Pressure Vessel Safety Orders, Construction Safety Orders, Electrical Safety Orders, and General Industry Safety Orders.
Title 8 CCR §1509, 1514-1522, 3203, 3220-3221, 3380-3390, 3401-3411	Outlines employer requirements for preparation of Illness and Injury Prevention Program, Emergency Action Plan, Fire Prevention Plan, and Personal Protective Equipment Program for construction and operations workers.
Health & Safety Code §25915-25919.7	Outlines requirements for Asbestos Management Plan including employee notification and handling procedures. Applies to presence of asbestos in the existing Units 1 & 2.
Labor Code §142.3	Authorizes the Occupational and Safety Health Board to establish safety standards.
Labor Code §6300 et seq.	Establishes the responsibilities of the Divisions of Occupational Health and Safety.
24 CCR §501 et seq.	Building code established to provide minimum standards to safeguard human life, health, property, and public welfare by controlling design, construction, and quality of materials of building.
California Public Utility Commission General Order No. 112-E	Additional restrictions to govern the California utilities on pipeline safety.

APPLICABLE LAW	DESCRIPTION
INDUSTRY STANDARDS	
Uniform Fire Code Standards	Contains provisions necessary for fire prevention and information about fire safety, special occupancy uses, special processes, and explosive, flammable, combustible and hazardous materials.

GENERAL ORDER NO. 1 - GENERALCONDITIONS INCLUDING COMPLIANCE MONITORING AND CLOSURE PLAN

Introduction

The project General Conditions Including Compliance Monitoring and Closure Plan (Compliance Plan) have been established as required by Public Resources Code section 25532. The plan provides a means for assuring that the facility is constructed, operated and closed in conjunction with air and water quality, public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the California Energy Commission (Energy Commission) and specified in the written decision on the Application for Certification or otherwise required by law.

The Compliance Plan is composed of the following elements:

1. General conditions that:

   a) set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;

   b) set forth the requirements for handling confidential records and maintaining the compliance record;

   c) state procedures for settling disputes and making post-certification changes;

   d) state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all Energy Commission approved conditions; and

   e) establish requirements for facility closure plans.

2. Specific conditions of certification:

   Specific conditions of certification that follow each technical area contain the measures required to mitigate any and all potential adverse project impacts associated with construction, operation and closure to an insignificant level. Each specific condition of certification also includes a verification provision that describes the method of verifying that the condition has been satisfied.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

To ensure consistency, continuity and efficiency, the following terms, as defined, apply to all technical areas, including Conditions of Certification:

> **SITE MOBILIZATION**: Moving trailers and related equipment onto the site, usually accompanied by minor ground disturbance, grading for the trailers and limited vehicle parking, trenching for utilities, installing utilities, grading for an access corridor, and other related activities. Ground disturbance, grading, etc., for site mobilization are limited to the portion of the site necessary for placing the trailers and providing access and parking for the occupants. Site mobilization is for temporary facilities and is, therefore, not considered construction.

GROUND DISTURBANCE: Onsite activity that results in the removal of soil or vegetation, boring, trenching or alteration of the site surface. This does not include driving or parking a passenger vehicle, pickup truck, or other light vehicle, or walking on site.

GRADING: Onsite activity conducted with earth-moving equipment that results in alteration of the topographical features of the site such a leveling, removal of hills or high spots, or moving of soil from one area to another.

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

a) The installation of environmental monitoring equipment.
b) A soil or geological investigation.
c) A topographical survey.
d) Any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility.
e) Any work to provide access to the site for any of the purposes specified in a, b, c, or d, above.

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

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

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

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, it should be understood that the approval would involve all appropriate staff and management.

The Commission has established a toll free compliance telephone number of **1-800-858-0784** for the public to contact the Commission about power plant construction or operation-related questions, complaints or concerns.

Pre-Construction and Pre-Operation Compliance Meeting

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

Energy Commission Record

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

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

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the conditions of certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate.

Access

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

Compliance Record

The project owner shall maintain project files on-site or at an alternative site approved by the CPM, for the life of the project. The files shall contain copies of all "as-built" drawings, all documents submitted

as verification for conditions, and all other project-related documents for the life of the project, unless a lesser period is specified by the conditions of certification.

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

Compliance Verifications

Each condition of certification is followed by a means of "verification". The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified, as necessary by the CPM, and in most cases without full Energy Commission approval.

Verification of compliance with the conditions of certification can be accomplished by:

- reporting on the work done and providing the pertinent documentation in monthly and/or annual compliance reports filed by the project owner or authorized agent as required by the specific conditions of certification;
- appropriate letters from delegate agencies verifying compliance;
- Energy Commission staff audits of project records; and/or
- Energy Commission staff inspections of mitigation and/or other evidence of mitigation.

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

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

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

All submittals shall be addressed as follows:

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

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

Compliance Reporting

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

Compliance Matrix

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

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

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

Pre-Construction Matrix

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

Tasks Prior to Start of Construction

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing

construction. Project owners frequently anticipate starting project construction as soon as the project is certified. In some cases it may be necessary for the project owner to file submittals prior to certification if the required lead-time for a required compliance event extends beyond the date anticipated for start of construction. It is also important that the project owner understand that pre-construction activities that are initiated prior to certification are performed at the owner's own risk. Failure to allow specified lead-time may cause delays in start of construction.

Various lead times for verification submittals to the CPM for conditions of certification are established to allow sufficient staff time to review and comment, and if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

Monthly Compliance Report

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

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

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;

2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;

3. an initial, and thereafter updated, compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

4. a list of conditions which have been satisfied during the reporting period, and a description or reference to the actions which satisfied the condition;

5. a list of any submittal deadlines that were missed accompanied by an explanation and an estimate of when the information will be provided;

6. a cumulative listing of any approved changes to conditions of certification;

7. a listing of any filings with, or permits issued by, other governmental agencies during the month;

8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;

9. a listing of the month's additions to the on-site compliance file; and

10. any requests to dispose of items that are required to be maintained in the project owner's compliance file.

11. a listing of complaints, notices of violation, official warnings, and citations received during the month; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

Annual Compliance Report

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

1. an updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;

4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;

5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;

6. a listing of filings made to, or permits issued by, other governmental agencies during the year;

7. a projection of project compliance activities scheduled during the next year;

8. a listing of the year's additions to the on-site compliance file, and

9. an evaluation of the on-site contingency plan for unexpected facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section].

10. a listing of complaints, notices of violation, official warnings, and citations received during the year; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

Confidential Information

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

Department of Fish and Game Filing Fee

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of eight hundred and fifty dollars ($850). The payment instrument shall be provided to the Commission's Project Manager at the time of project certification and shall be made payable to the California Department of Fish and Game. The Commission's Project Manager will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

Reporting of Complaints, Notices, and Citations

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

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

COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: **AFC Number:**
COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date and time complaint received: Indicate if by telephone or in writing (attach copy if written): Date of first occurrence:
Description of complaint (including dates, frequency, and duration):
Findings of investigation by plant personnel: Indicate if complaint relates to violation of a CEC requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct. Plant Manager's Signature: _____ Date:

(Attach additional pages and supporting documentation, as required.)

FACILITY CLOSURE

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

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

Planned Closure

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

Unexpected Temporary Closure

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

Unexpected Permanent Closure

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

General Conditions for Facility Closure

Planned Closure

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least twelve months prior to commencement of closure activities (or other period of time agreed to by the CPM). The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site.

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

3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and

4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

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

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

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

Unexpected Temporary Closure

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

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less that 60 days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facility and shall be kept at the site at all times.

The project owner, in consultation with the CPM, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days (unless other arrangements are agreed to by the CPM), the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment and the safe shutdown of all equipment (also see specific conditions of certification for the technical areas of Hazardous Materials Management and Waste Management).

In addition, consistent with requirements under unexpected permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the

on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

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

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

Unexpected Permanent Closure

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

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

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

A closure plan consistent with that for a planned closure shall be developed and submitted to the CPM within 90 days of the permanent closure (or other period of time agreed to by the CPM).

DELEGATE AGENCIES

To the extent permitted by law, the Energy Commission may delegate authority for compliance verification and enforcement to various state and local agencies that have expertise in subject areas where specific requirements have been established as a condition of certification. If a delegate agency does not participate in this program, the Energy Commission staff will establish an alternative method of verification and enforcement. Energy Commission staff reserves the right to independently verify compliance.

In performing construction and operation monitoring of the project, the Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). The Commission staff retains this authority when delegating to a local CBO. Delegation of authority for compliance verification includes the authority for enforcing codes, the responsibility for code interpretation where required, and the authority to use discretion, as necessary, in implementing the various codes and standards.

Whenever an agency's responsibility for a particular area is transferred by law to another entity, all references to the original agency shall be interpreted to apply to the successor entity.

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Commission Decision. The specific action and amount of any fines the Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, inadvertence, unforeseeable events, and other factors the Commission may consider.

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

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et. seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by current law or regulations.

Informal Dispute Resolution Procedure

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

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et. seq., but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and conditions of certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

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

Request for Informal Investigation

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and within seven (7) working days of the CPM's request, provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report, within forty-eight (48) hours, followed by a written report filed within seven (7) days.

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;

2. secure the attendance of appropriate Energy Commission staff and staff of any other agency with expertise in the subject area of concern as necessary;

3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and,

4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et. seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

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

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Title 20, California Code of Regulations, sections 1232 - 1236).

POST CERTIFICATION CHANGES TO THE COMMISSION DECISION: AMENDMENTS, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES

The project owner must petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to 1) delete or change a condition of certification; 2) modify the project design or operational requirements; and 3) transfer ownership or operational control of the facility.

A petition is required for **amendments** and for **insignificant project changes**. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the Commission's Docket in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of change process applies are explained below.

Amendment (1769(A)(3))

A proposed project modification will be processed as an amendment if it alters the intent or purpose of a condition of certification, has potential for significant adverse environmental impact, may violate applicable laws, ordinances, regulations or standards, or involves an ownership change.

Insignificant Project Change (1769(A)(2))

If a proposed modification does not alter the intent or purpose of a condition of certification, have potential for significant adverse environmental impact, violate applicable laws, ordinances, regulations, or standards, or result in an ownership change, it will be processed in accordance with Section 1769(a)(2). In this regard, as specified in Section 1769(a)(2), Commission approval is not required.

Verification Change

The proposed change will be processed as a verification change if it involves only the language in the verification portion of the condition of certification. This procedure can only be used to change verification requirements that are of an administrative nature, usually the timing of a required action. In the unlikely event that verification language contains technical requirements, the proposed change must be processed as an amendment.

KEY EVENT LIST

PROJECT _____ DATE ENTERED

DOCKET # _____ PROJECT MANAGER

EVENT DESCRIPTION	***DATE ASSIGNED***
Date of Certification	
Start of Construction	
Completion of Construction	
Start of Operation (1st Turbine Roll)	
Start of Rainy Season	
End of Rainy Season	
Start T/L Construction	
Complete T/L Construction	
Start Fuel Supply Line Construction	
Complete Fuel Supply Line Construction	
Start Rough Grading	
Complete Rough Grading	
Start of Water Supply Line Construction	
Completion of Water Supply Line Construction	
Start Implementation of Erosion Control Measures	
Complete Implementation of Erosion Control Measures	

ADOPTION ORDER

The Commission adopts this Decision on the AES Huntington Beach Power Plant and incorporates the amended Presiding Member's Proposed Decision. This Decision is based upon the record of the proceeding (Docket No. 00-AFC-013).

The Commission hereby adopts the following findings in addition to those contained in the accompanying text:

1. The Conditions of Certification contained in this Decision, if implemented by the project owner, ensure that, to the extent stated herein, the whole of the project will be designed, sited and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards. Otherwise, the benefits of the project – significant new generating capacity which helps meet the peak summer electricity needs – are overriding considerations in approving the project through September 30, 2006, (or as extended) and outweigh what may be a significant impact.

2. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative adverse environmental impacts.

3. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.

4. The record does not establish the existence of any environmentally superior alternative site.

5. The analysis of record assesses all potential environmental impacts associated with the 450 MW configuration.

6. This Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.

7. The proceedings leading to this Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an Application for Certification and thereby meet the requirements of Public Resources Code, sections 21000 et seq., and 25500 et seq.

Therefore, the Commission ORDERS the following:

1. The Application for Certification of the AES Huntington Beach Power Company, LLC, as described in this Decision is hereby approved and a certificate to construct and operate the project to September 30, 2011, is hereby granted.

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

3. For purposes of reconsideration pursuant to Public Resources Code section 25530, this Decision is deemed adopted when filed with the Commission's Docket Unit.

4. For purposes of judicial review pursuant to Public Resources Code section 25531, this Decision is final thirty (30) days after its filing in the absence of the filing of a petition for reconsideration or, if a petition for reconsideration is filed within thirty (30) days, upon the adoption and filing of an Order upon reconsideration with the Commission's Docket Unit.

5. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures as part of this Decision in order to implement the compliance monitoring program required by Public Resources Code section 25532. All conditions in this Decision take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.

6. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents as provided by Public Resources Code section 25537 and California Code of Regulations, title 20, section 1768.

Dated: May 10, 2001

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

WILLIAM J. KEESE
Chairman

ROBERT A. LAURIE
Commissioner

ROBERT PERNELL
Commissioner

ARTHUR H. ROSENFELD
Commissioner

Commissioner Michal Moore was absent.