Watson Cogeneration Steam and Electric Reliability Project

Presiding Member's Proposed Decision

CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown, Jr., Governor

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CALIFORNIA
ENERGY COMMISSION
1516 Ninth Street
Sacramento, CA 95814

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

COMMISSIONERS-

KAREN DOUGLAS, J.D.
Commissioner, Presiding Member

CARLA PETERMAN
Commissioner, Associate Member

RAOUL RENAUD
Hearing Officer

DISCLAIMER

This report was prepared by the California Energy Commission Watson Project AFC Committee as part of Watson Project, Docket No. 09-AFC-1. The views and recommendations contained in this document are not official policy of the Energy Commission until the report is adopted at an Energy Commission Business Meeting.

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

The Committee hereby submits its Presiding Member's Proposed Decision for the ***Watson Cogeneration Steam and Electric Reliability Project*** (Docket Number 09-AFC-1). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code Regs., §§ 1749-1752.5.)

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

Dated: February 15, 2012 at Sacramento, California.

Original Signed By:
CARLA PETERMAN
Commissioner and Presiding Member
Watson AFC Committee

Original Signed By:
KAREN DOUGLAS
Commissioner and Associate Member
Watson AFC Committee

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INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision sets forth the Commission's rationale in determining that the Watson Cogeneration Steam and Electric Reliability Project (Watson Project) will, as mitigated, have no significant impacts on the environment and complies with all applicable laws, ordinances, regulations, and standards (LORS). The project may therefore be licensed. This Decision is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the Watson Project is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The Watson Cogeneration Company (Watson) currently operates a 385 megawatt (MW) cogeneration power plant facility that is located in the British Petroleum (BP) Carson refinery in the city of Carson in Los Angeles County, California. The existing facility was licensed by the California Energy Commission in 1986 (85-AFC-1) and has been in operation since 1988.

On March 19, 2009, Watson filed an Application for Certification (AFC) with the California Energy Commission requesting approval to expand the facility. On July 29, 2009, the Energy Commission accepted the AFC, with the supplemental information, as complete. With the proposed modifications, the Watson Project is projected to increase the facility's electricity generation by 85 MW and provide additional process steam to the adjacent BP Carson Refinery.

The proposed project site consists of 2.5 acres located within the boundary of the existing 21.7-acre Watson Cogeneration facility. The project area is zoned Heavy Manufacturing and is surrounded by existing refineries and other industrial facilities. (Ex. 200, p. 3-1.)

The project site is located approximately 0.7 mile south of the 405 Freeway, roughly bounded by East 223rd Street to the north, Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 11/30/09 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix B** of this Decision.

east, in the city of Carson. The street address of the project site is located within the confines of the facility at 22850 South Wilmington Avenue. The construction laydown and parking area, owned by BP, is a paved 25-acre parcel located approximately one mile southeast of the proposed project site, at the northeast corner of East Sepulveda Boulevard and South Alameda Street. The street address is 2149 East Sepulveda Boulevard. (Ex. 200, p. 3-2.)

The project would include the addition of one General Electric (GE) 7EA combustion turbine generator (CTG) with an inlet fogging system, one duct-fired heat recovery steam generator (HRSG), two redundant natural gas compressors, one boiler feedwater (BFW) pump, one circulating water pump, two new cells added to an existing cooling tower, an electrical distribution system, and a new on-site 69-kV gas insulated substation. The steam produced by the fifth train would be delivered to the existing steam header shared by the four existing cogeneration trains. The proposed project would use the existing water supply pipeline, natural gas pipeline, wastewater pipeline, and electric transmission lines. (Ex. 200, pp 3-1 – 3-2.)

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

The project construction is expected to take approximately 26 months from site mobilization to commercial operation. There would be an average and peak construction workforce of approximately 41 and 80 persons, respectively, consisting of construction crafts, supervisory, support, and construction management personnel. Personnel requirements would peak from month six through month 16 of the construction period. No new operators or other staff would be hired for the proposed project as it would be operated and maintained by existing staff. The facility will be in operation 24 hours per day/seven days per week. (Ex. 200, p. 3-3.)

No significant adverse socioeconomics impacts would occur as result of the construction or operation of the Watson Project. The proposed project would benefit the study area in terms of an increase in local expenditures and payrolls during construction and operation of the facility and would have a positive effect on the local and regional economy. (Ex. 200, p. 4.8-13.)

B. SITE CERTIFICATION PROCESS

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

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

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

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

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining necessary technical information. During this time, the Commission staff sponsors public workshops at

which intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of the project in its Preliminary Staff Assessment (PSA), which is made available for a 30-day public comment period. Staff's responses to public comment on the PSA and its complete analyses and recommendations are published in the Final Staff Assessment (FSA, also Exhibit 200).

Following this, the Committee conducts a prehearing conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a hearing order to schedule formal evidentiary hearings. At the evidentiary hearings, all formal parties, including intervenors, may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public may offer oral or written comments at these hearings. Evidence submitted at the hearings provides the basis for the Committee's analysis and recommendations to the full Commission.

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

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

C. PROCEDURAL HISTORY

Public Resources Code, sections 25500 et seq. and Energy Commission regulations (Cal. Code Regs., tit. 20, § 1701, et seq.) mandate a public review

process and specify the occurrence of certain procedural events in which the public may participate. The key procedural events that occurred in the present case are summarized below.

On March 19, 2009, Watson filed an Application for Certification (AFC) with the California Energy Commission requesting approval to expand the existing Watson Cogeneration Project at the BP Carson Refinery. On July 29, 2009, the Energy Commission accepted the AFC as complete.

On July 29, 2009, the Energy Commission deemed the AFC data adequate (sufficient data to proceed) and assigned a Committee of two Commissioners to conduct proceedings.

The formal parties included the Applicant, the Energy Commission staff (Staff), and California Unions for Reliable Energy (CURE).

On April 10, 2009 and July 31, 2009, mailings were sent to the Gabrielino-Tongva Tribe, advising them of the proposed project and provided them with contact information. In addition, their names have been added to the Watson Project mail-out list and will therefore be receiving a copy of all Commission notices for events and reports related to this project.

On April 10, 2009 and July 31, 2009 the Energy Commission staff sent mailings regarding the project to the Native American Heritage Commission. In addition, this Commission was also added to the Watson Project mail-out list and will therefore be receiving a copy of all Commission notices for events and reports related to this project.

On August 3, 2009, the Committee issued a Notice of "Informational Hearing and Site Visit." The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the project. In addition to property owners and persons on the general project mail-out list, notification was provided to local, state and federal public interest and regulatory organizations with an expressed or anticipated interest in this project. Also, elected and certain appointed officials of Los Angeles County were similarly notified of the hearing and site visit.

On September 3, 2009, the Committee conducted a site visit to tour the proposed Watson Project site and then convened a public informational hearing at the

Carson Civic Center. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the Watson Project, described the Commission's review process, and explained opportunities for public participation. On September 17, 2009, the Committee issued the Scheduling Order for the proceedings.

The Energy Commission staff provided notification by letter of October 14, 2009 and January 20, 2010 Data Response and Issue Resolution Workshops. In addition to property owners and persons on the general project mail-out list, notification was provided to local, state and federal public interest and regulatory organizations with an expressed or anticipated interest in this project.

The Preliminary Staff Assessment (PSA) was published on December 17, 2010. The Staff provided notification by letter and held a PSA Workshop on January 25, 2010, in Carson. The Final Staff Assessment (FSA) was released on August 31, 2011.

On January 25, 2011, Staff conducted a PSA Workshop. This workshop was continued on February 3, 2011.

On September 12, 2011, the Committee issued a Notice of Prehearing Conference and Evidentiary Hearing. The prehearing conference was held on October 17, 2011, and the evidentiary hearing was held on November 1, 2011, both at Energy Commission headquarters in Sacramento.

The Committee published the PMPD on February 15, 2012. The 30-day comment period on the PMPD will expire on March 16, 2012. Written comments were scheduled to be submitted by _____,2012. An Errata was created and distributed to the parties and was adopted along with the PMPD at a full Commission Business Meeting held on _____,2012. The Final Commission Decision was published on _____,2012.

D. PUBLIC COMMENT

The record contains public comments from concerned individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing. Ms. Mia McNulty, representing the Carson-Torrance branch of the NAACP, was the only member of the public commenting at the evidentiary hearing. (11/1/2011 RT 66:21.)

II. PROJECT DESCRIPTION AND PURPOSE

The Watson Cogeneration Company (Watson) currently operates a 385-megawatt (MW) cogeneration power plant facility that is located in the British Petroleum (BP) Carson refinery in the city of Carson in Los Angeles County, California. The existing facility was licensed by the California Energy Commission in 1986 (85-AFC-1) and has been in operation since 1988.

On March 19, 2009, Watson filed an Application for Certification (AFC) with the California Energy Commission requesting approval to expand the facility. On July 29, 2009, the Energy Commission accepted the AFC, with the supplemental information, as complete. With the proposed modifications, the Watson Cogeneration Steam and Electric Reliability Project (Watson Project) is projected to increase the facility's electricity generation by 85 MW and provide additional process steam to the adjacent BP Carson Refinery.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed project site consists of 2.5 acres located within the boundary of the existing 21.7-acre Watson Cogeneration facility, which is within the BP Carson Refinery. The project area is zoned Heavy Manufacturing and is surrounded by existing refineries and other industrial facilities. (Ex. 200, p. 3-1.)

The project site is located approximately 0.7 mile south of the 405 Freeway, roughly bounded by East 223rd Street to the north, Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east, in the city of Carson. The street address of the project site is located within the confines of the facility at 22850 South Wilmington Avenue. The construction laydown and parking area, owned by BP, is a paved 25-acre parcel located approximately one mile southeast of the proposed project site, at the northeast corner of East Sepulveda Boulevard and South Alameda Street. The street address is 2149 East Sepulveda Boulevard. (Ex. 200, p. 3-2.)

The project would include the addition of one General Electric (GE) 7EA combustion turbine generator (CTG) with an inlet fogging system, one duct-fired heat recovery steam generator (HRSG), two redundant natural gas compressors, one boiler feedwater (BFW) pump, one circulating water pump, two new cells added to an existing cooling tower, an electrical distribution system, and a new on-site 69-kV gas insulated substation. The steam produced by the fifth train

would be delivered to the existing steam header shared by the four existing cogeneration trains. The proposed project would use the existing water supply pipeline, natural gas pipeline, wastewater pipeline, and electric transmission lines. (Ex. 200, pp 3-1 – 3-2.)

1. Project Objectives

Watson's objective is to improve the reliability of steam supply and electric power at the BP Carson Refinery by adding a fifth train to the existing four trains at the facility, which would complete the original, five train design of the facility. This fifth train would add a nominal 85 MW, resulting in a total production of 470 MW, and deliver an additional long-term supply of steam to the BP Carson Refinery. The high reliability of the Watson Project would significantly reduce the possibility of refinery upsets due to loss of steam or power. (Ex. 200, p. 3-1.)

2. Project Features

Air Quality Control

Air emissions from the combustion of natural gas will be controlled using state of the art systems. Emissions of carbon monoxide (CO) and volatile organic compounds (VOC) will be reduced with the use of a CO catalyst system and a selective catalytic reduction (SCR) system that will use aqueous ammonia to control nitrogen (NO_X) emissions. Emissions of particulate matter and Sulfur oxide (SO_X) will be limited through the use of gaseous fuels. A Continuous Emissions Monitoring system will be installed to monitor emissions from the exhaust stacks. (Ex. 200, p. 3-2.)

Natural Gas Supply

The existing facility is serviced by Southern California Gas Company's natural gas pipeline which connects to a pipe rack at the refinery. The additional fifth train will obtain its gas from the existing refinery natural gas system at an interface point on the pipe rack. Natural gas for the fifth train will be compressed by two new redundant dedicated gas compressors and will be served via a six-inch connection with the refinery gas supply system, downstream of existing compressors. *(Id.)*

Water Supply

It is the goal of Watson to use reclaimed water. However, until it is available from the West Basin Municipal Water District, the Applicant plans to use the municipal and groundwater which is available to the existing Watson Cogeneration facility. (Ex. 200, p. 3-3.)

Storm Water and Wastewater Discharge

Industrial and storm water will be discharged to the existing oily water system at the BP Refinery. Storm water runoff from the project will also be directed to the oily water system. There will be no off-site discharges from the project. The existing sanitary system for the facility is served by a connection to the sewer operated by the Los Angeles County Sanitation District. (*Id.*)

Transmission System

Electric power generated at the facility that is not consumed for internal refinery use is transmitted from the existing switchyard to the Southern California Edison (SCE) Hinson Substation via a 230-kV double-circuit, single conductor line that is approximately 1.6 miles long. From the switchyard, a new on-site 69-kV gas insulated substation (GIS) will provide power to the refinery and connect the fifth train to the 230-kV line for delivery to the existing on-site 230-kV GIS. The 230-kV GIS is then connected to the SCE Hinson Substation via two 230-kV SCE transmission lines. From there, the generated power would be connected to the regional electric grid. Upgrades to the existing transmission lines are not required. (*Id.*)

3. Project Construction and Operation

The project construction is expected to take approximately 26 months from the site mobilization to commercial operation.

Construction Workforce

There would be an average and peak workforce of approximately 41 and 80 persons, respectively, consisting of construction crafts, supervisory, support, and construction management personnel on site during construction. Personnel

requirements would peak from month 6 through month 16 of the construction period. (Ex. 200, p. 3-3.)

Operation Workforce

No new operators or other staff would be hired for the proposed project as it would be operated and maintained by existing staff. The facility will be in operation 24 hours per day/seven days per week. (*Id.*)

4. Facility Closure

The anticipated life of a new cogeneration facility is at least 30 years. Continued operation of the facility beyond this time is likely to be viable, especially with good maintenance practices; however, at an appropriate point beyond that, the project would cease operation and close down. At that time it would be necessary to ensure that the closure occurs in such a way that the public health and safety and the environment are protected from adverse impacts. (Ex. 200, p. 3-4.)

Although the setting for this project does not presently appear to present any special or unusual closure problems, it is impossible to foresee what the situation would be in 30 years or more when the project ceases operation. Because the conditions that would affect the decommissioning decision are largely unknown at this time, these conditions would be presented to the Energy Commission when more information is available and the timing for decommissioning is more imminent. Facility closure would be consistent with laws, ordinances, regulations and standards in effect at the time of closure. (*Id.*)

FINDINGS OF FACT

Based upon the evidentiary record, we find as follows:

1. Watson Cogeneration Company will own and operate the project.

2. The Watson Project involves adding a fifth train to the existing Watson Cogeneration Project. This modification will result in an increase of 85 MW in generation capacity, and additional steam capacity to service the BP Carson Refinery.

3. The project site will occupy approximately 2.5 acres of land.

4. The project will utilize the existing transmission, gas supply, and water supply lines.

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

CONCLUSION OF LAW

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

III. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which represent the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.[3] (Cal. Code Regs., tit. 14, §§ 15126.6 (c) and (e); *see also*, tit. 20, § 1765.)

The range of alternatives, including the "no project" alternative, is governed by the "rule of reason" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. (Cal. Code Regs., tit. 14, § 15126.6(f).) Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project." (*Id*.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Watson proposes to expand the existing facility, a nominal 385-megawatt (MW) cogeneration power plant, by adding an 85 MW fifth train, culminating in a combined nominal generating capacity of 470 MW. The proposed project was a part of the original design of the facility but was not constructed; Watson proposes to complete the original design now. The existing facility has been in continuous operation for over 20 years. (Ex. 200, p. 6-2.)

The proposed project would produce steam for delivery to the immediately adjacent BP Carson Refinery. Steam is a necessary and integral component of refinery operations, and the production of steam for refinery operation derives maximum efficiencies and benefits by its proximity to those operations in order to provide heat, control over the steam state of water, and minimize the construction and length of lateral facilities. (Ex. 200, pp. 6-2 – 6-3.)

[3] Public Resources Code section 25540.6(b) requires an Applicant for a power plant to include information on the site selection criteria, alternative sites, and the reasons for choosing the proposed site. Section 1765 of the Commission's regulations further requires the parties to present evidence on alternative sites and facilities. Based on the totality of the record and as reflected in our findings for each of the technical topics, the Watson Project, as mitigated. will not result in any significant adverse effects on the environment. Nevertheless, this alternatives analysis is necessary to ensure compliance with CEQA Guidelines and Commission regulations. (Cal. Code Regs., tit. 14, § 15126.6 and tit. 20, § 1765.)

The proposed project would include one General Electric (GE) 7EA Combustion Turbine Generator (CTG) with an inlet fogging system, one duct-fired heat recovery steam generator (HRSG), two redundant natural gas compressors, one boiler feedwater (BFW) pump, one circulating water pump, two new cells added to an existing cooling tower, an electrical distribution system, a new on-site 69 kilovolt gas insulated substation, and a paved 25-acre construction laydown and parking area located one mile southeast of the project site.

CEQA Guidelines, section 15126.6 (f)(2)(A) states: “The key question and first step in [the Alternatives] analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the [Environmental Impact Report].”

In this case, the following factors must be taken into account when considering whether or not there are any possible alternative sites that would avoid or substantially lessen any of the significant effects of the project:

- The existing facility was built on a 21.7-acre brownfield parcel within the boundaries of the BP Carson Refinery, of which the proposed project site would occupy 2.5 acres. If an alternative site were used, then at least 2.5 acres in an area outside the existing facility would need to be developed for the placement of the project on that alternative site.
- If an alternative site were used, additional fuel gas supply, water supply, and electric transmission facilities would likely need to be provided to the new facility and to connect the new facility to the steam host (existing BP Carson Refinery).
- All of the work for the proposed project at the proposed site would be done at the current brownfield facility site, thereby minimizing impact to biological resources and land use.
- No new linear facilities would need to be constructed. The proposed project would use the existing water supply pipeline, natural gas pipeline, wastewater pipeline, and electric transmission lines.
  (Ex. 200, p. 6-3.)

If an alternative site were used for the proposed Watson Project, the 85 MW cogeneration facility would have to be built at a location likely not adjacent to the steam host (BP Carson Refinery) and would likely require the construction of a new natural gas pipeline, water supply pipeline, and electric transmission infrastructure. Any such site alternative would have potential impacts to air quality, biological resources, public health, land use, and water resources; all of which would require mitigation likely greater than at the proposed site.

Based on the facts and analysis above, we find that: 1) the proposed project makes substantial use of the existing infrastructure, which would greatly reduce significant impacts that would occur if the project is constructed at an alternative site, and 2) the proposed project would maximize efficiencies gained from constructing a more reliable steam supply and electric generation facility immediately adjacent to the steam host and electricity load.

We therefore find that a detailed reexamination of alternative sites is not required for the Watson Project. This is supported by the Warren-Alquist Act and CEQA.

Moreover, the Warren-Alquist Act provides that discussion of “any alternative sites that the applicant considered for the project, and the reasons why the applicant chose the proposed site…shall not be required for cogeneration projects at existing industrial sites.” (Pub. Res. Code, § 25540.6(b).) It also provides that the Commission may accept an AFC for a noncogeneration project at an existing industrial site “without requiring a discussion of site alternatives if the commission finds that the project has a strong relationship to the existing industrial site and that it is therefore reasonable not to analyze alternative sites for the project.” (*Id.*) Section 25540.6(b) of the Public Resources Code generally concerns the filing requirements and time period for processing AFCs for cogeneration facilities, modifications of existing facilities, and other facilities. Nevertheless, it recognizes the inherent value of siting cogeneration facilities at existing industrial sites and even noncogeneration facilities with a strong relationship to the existing industrial site, and its release of such facilities’ AFCs from the requirement of discussing the Applicant's site selection criteria, any alternative sites that the Applicant considered for the project, and the reasons why the Applicant chose the proposed site should guide the development of range of reasonable site alternatives for this project. The fact that the Watson Project is an addition to a cogeneration facility that has been on an existing industrial site for the past 20 years lends further support to our finding that a detailed alternative site analysis should not be required for this project.

Alternatives

Conservation and Demand Side Management

One alternative to meeting California's electricity demand with new generation is to reduce the demand for electricity. Such "demand side" measures include programs that increase energy efficiency, reduce electricity use, or shift electricity use away from "peak" hours of demand.

In California, there are many demand side programs already in effect. At the federal level, the Department of Energy adopts national standards for appliance efficiency and building standards to reduce the use of energy in federal buildings and at military bases. At the state level, the Energy Commission adopts comprehensive energy efficiency standards for most buildings, appliance standards for specific items not subject to federal appliance standards, and load management standards. The Energy Commission also provides grants for energy efficiency development through the Public Interest Energy Research (PIER) program.

The California Public Utilities Commission, along with the Energy Commission, oversees investor-owned utilities' demand side management programs financed by the utilities and its ratepayers. At the local level, many municipal utilities administer demand side management and energy conservation programs. These include subsidies for the replacement of older appliances through rebates, building weatherization programs, and peak load management programs. In addition, several local governments have adopted building standards that exceed the state standards for building efficiency or have by ordinance set retrofit energy efficiency requirements for older buildings. New buildings may combine the need for heat and power through a single fuel source, or a common source may supply heating and/or heating and cooling to a number of adjacent buildings, increasing overall efficiency.

Even with this great variety of federal, state, and local demand side management programs, the state's electricity use is still increasing as a result of population growth, the proliferation of electronic devices, and business expansion.

Therefore, although it is likely that federal, state, and local demand side programs will receive even greater emphasis in the future, both new generation and new transmission facilities will be needed in the immediate future and beyond in order to maintain adequate supplies.

Moreover, demand side technologies do not address the two leading project objectives: to increase steam and electric reliability for the adjacent BP Carson Refinery. We therefore find that conservation and demand side management does not constitute a practicable alternative to the project.

Alternative Fuels and Technologies

The Watson Project was designed to complete the existing facility of four General Electric (GE) 7EA combustion turbine generators (CTG), by adding a fifth CTG that has the same configuration as the other units. Any other type of combustion turbine would require a different configuration of the steam systems and would have a significant effect on the existing operation of the facility and its operational interaction with the adjacent refinery. (Ex. 200, p. 6-5.)

Alternative generation technologies such as solar, wind, and geothermal generation would not be able to meet the refinery's needs for a reliable steam supply within the constraints of the existing facility. Therefore, per the Warren Alquist Act, Public Resources Code, section 25540.6(b), we have considered but not analyzed in depth geothermal, hydroelectric, solar, wind, or biomass technologies. However, as stated in the Applicant's project objectives, one of the main objectives is to improve the reliability of steam supply at the refinery; therefore, Staff did analyze a steam-only alternative.

Steam Only Alternative

Although a steam only alternative is feasible, it would require nearly the same amount of water resources and produce nearly the same amount of pollutants without the benefit of adding 85 MW of electrical energy output. Furthermore, the steam only alternative would require additional space and additional linears, thereby causing possible significant environmental impacts. This proposed project completes the original design of the facility and, because it would use the existing linears, it would not cause any additional environmental impacts. We therefore find that the steam only alternative is not preferable to the project as proposed.

No Project Alternative

The "no project" alternative under CEQA assumes that the project is not constructed. In the CEQA analysis, the "no project" alternative is compared to the proposed project and determined to be superior, equivalent, or inferior to it. The CEQA Guidelines state that "the purpose of describing and analyzing a "no

project" alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (Cal. Code Regs., tit. 14, §15126.6(i)). Toward that end, the "no project" analysis considers "existing conditions" and "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" (*Id.,* §15126.6(e)(2)). CEQA Guidelines and Energy Commission regulations require consideration of the "no project" alternative. The no-action alternative provides a baseline against which the effects of the proposed action may be compared. In short, the site-specific and direct impacts associated with the power plant would not occur at this site if the project does not go forward.

If the "no project" alternative were selected, the construction and operational impacts of proposed upgrades to the existing facility would not occur. Without the proposed project, the existing facility would continue to run as a 385 MW cogeneration facility and the additional 85 MW of power and additional steam supply source in the project area would have to be met by another project.

While the "no project" alternative is feasible, if the project is not built, the region will not benefit from the relatively efficient source of 85 MW of power that this facility would provide. This new baseload generation would increase the amount of electrical energy available to the local grid. In addition, the "no project" alternative would eliminate the expected steam reliability benefits, as well as the economic benefits that the proposed project would bring to the area, including increased property taxes, employment during project construction, sales taxes, and sales of services, manufactured goods, and equipment. Therefore, we find that, the "no project" alternative is not the preferred alternative.

FINDINGS OF FACT

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

1. Analysis of alternative sites is not required in this case because the proposed project is an addition to an existing cogeneration project at an industrial facility.
2. The evidentiary record contains an adequate discussion of alternative fuels, technologies, and the "no project" alternative.
3. Alternative fuels and technologies are not capable of meeting project objectives.

4. No site alternative is capable of meeting the stated project objectives.

5. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts.

6. The “no project” alternative would not provide electrical system benefits.

7. The “no project” alternative could result in reduced reliability for the BP Carson Refinery’s steam supply.

8. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the Watson Project will not create any significant direct, indirect, or cumulative adverse environmental impacts.

CONCLUSION OF LAW

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

IV. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

The record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the Watson Cogeneration Steam and Electric Reliability Project is constructed and operated according to the conditions of certification. It essentially describes the respective duties and expectations of the Project Owner and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.

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

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

- set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- set forth procedures for settling disputes and making post-certification changes;
- set forth the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed Conditions; and
- set forth requirements for facility closure.

The second general element of the Plan contains the specific “Conditions of Certification.” These are found following the summary and discussion of each individual

topic area in this Decision. The individual conditions contain the measures required to mitigate potentially adverse project impacts associated with construction, operation, and closure to levels of insignificance. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied.

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

FINDINGS OF FACT

The record establishes:

1. Requirements contained in the Compliance Plan and in the specific conditions of certification are intended to be implemented in conjunction with one another.

2. The following Compliance Plan will be implemented pursuant to this Decision.

CONCLUSIONS OF LAW

1. The compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532.

2. The Compliance Plan and the specific conditions of certification contained in this Decision assure that the Watson Cogeneration Steam and Electric Reliability Project will be designed, constructed, operated, and closed in conformity with applicable law.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

The following terms and definitions are used to establish when conditions of certification are implemented.

PRE-CONSTRUCTION SITE MOBILIZATION

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

CONSTRUCTION

On-site work to install permanent equipment or structures for any facility.

Ground Disturbance

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

Grading, Boring, and Trenching

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

Notwithstanding the definitions of ground disturbance, grading, boring, and trenching above, construction does **not** include the following:

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

START OF COMMERCIAL OPERATION

For compliance monitoring purposes, “commercial operation” begins after the completion of start-up and commissioning, when the power plant has reached reliable steady-state production of electricity at the rated capacity. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

The Compliance Project Manager (CPM) shall oversee the compliance monitoring and is responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;
2. resolving complaints;
3. processing post-certification changes to the conditions of certification, project description (petition to amend), and ownership or operational control (petition for change of ownership) (See instructions for filing petitions);
4. documenting and tracking compliance filings; and
5. ensuring that compliance files are maintained and accessible.

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate Energy Commission staff and management. All submittals must include searchable electronic versions (pdf or MS Word files).

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

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

ENERGY COMMISSION RECORD

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

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

PROJECT OWNER RESPONSIBILITIES

The project owner is responsible for ensuring that the compliance conditions of certification and all other conditions of certification that appear in the Commission Decision are satisfied. The compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, conditions of certification, or ownership. Failure to comply with any of the conditions of certification or the compliance conditions may result in reopening of the case and revocation of Energy Commission certification; an administrative fine; or other action as appropriate. A summary of the Compliance Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section of the Decision.

COMPLIANCE CONDITIONS OF CERTIFICATION

Unrestricted Access (COMPLIANCE-1)

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

Compliance Record (COMPLIANCE-2)

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

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

Compliance Verification Submittals (COMPLIANCE-3)

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM.

Verification of compliance with the conditions of certification can be accomplished by the following:

1. monthly and/or annual compliance reports, filed by the project owner or authorized agent, reporting on work done and providing pertinent documentation, as required by the specific conditions of certification;
2. appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of work, or other evidence that the requirements are satisfied.

Verification lead times 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 project by AFC number, the appropriate condition(s) of certification by condition number(s), and 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 and CEC submittal number.

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 hardcopy submittals shall be addressed as follows:

Compliance Project Manager
(09-AFC-1C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

Those submittals shall be accompanied by a searchable electronic copy, on a CD or by e-mail, as agreed upon by the CPM.

If the project owner desires Energy Commission staff action by a specific date, that request shall be made in the submittal cover letter and shall include a detailed explanation of the effects on the project if that date is not met.

Pre-Construction Matrix and Tasks Prior to Start of Construction (COMPLIANCE-4)

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

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times for submittal of compliance verification documents to the CPM for conditions of certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

Failure to submit compliance documents within the specified lead-time may result in delays in authorization to commence various stages of project development.

If the project owner anticipates commencing project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. Compliance submittals should be completed in advance where the necessary lead time for a required compliance event extends beyond the date anticipated for start of construction. The project owner must understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change, based upon the Commission Decision.

Compliance Reporting

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

Compliance Matrix (COMPLIANCE-5)

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

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

Satisfied conditions shall be placed at the end of the matrix.

Monthly Compliance Report (COMPLIANCE-6)

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and an electronic searchable version 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, as well as the conditions they satisfy and submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix showing the status of all conditions of certification;

4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to conditions of certification;
7. a listing of any filings submitted to, or permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;
9. a listing of the month's additions to the on-site compliance file; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolution of the resolved actions, and the status of any unresolved actions.

All sections, exhibits, or addendums shall be separated by tabbed dividers or as acceptable by the CPM.

Annual Compliance Report (COMPLIANCE-7)

After construction is complete, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. Annual Compliance Reports shall be submitted over the life of the project, unless otherwise specified by the CPM. Each Annual Compliance Report shall include the AFC number, identify the reporting period, and shall contain the following:

1. an updated compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter with the condition it satisfies, and submitted as attachments to the Annual Compliance Report;
4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings submitted to, or permits issued by, other governmental agencies during the year;

7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date (see Compliance Conditions for Facility Closure addressed later in this section); and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

Confidential Information (COMPLIANCE-8)

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

Annual Energy Facility Compliance Fee (COMPLIANCE-9)

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual compliance fee, which is adjusted annually. Current Compliance fee information is available on the Energy Commission's website http://www.energy.ca.gov/siting/filing_fees.html. You may also contact the CPM for the current fee information. The initial payment is due on the date of the Business Meeting at which the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9th St., Sacramento, CA, 95814.

Reporting of Complaints, Notices, and Citations (COMPLIANCE-10)

Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints, or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with a date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at http://www.energy.ca.gov/sitingcases/power_plants_contacts.html.
Any changes to the telephone number shall be submitted immediately to the CPM, who will update the web page.

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines,

official warnings, and citations within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **NOISE** Conditions of Certification. All other complaints shall be recorded on the complaint form (Attachment A).

FACILITY CLOSURE

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

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan. It can also include unplanned closure where the project owner fails to implement the contingency plan, and the project is essentially abandoned.

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

Planned Closure (COMPLIANCE-11)

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and

applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to the commencement of closure activities. The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

Prior to submittal of the proposed facility closure plan, a meeting shall be held between the project owner and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.

In the event that there are significant issues associated with the proposed facility closure plan's approval, or if the desires of local officials or interested parties are inconsistent with the plan, the CPM shall hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until the Energy Commission approves the facility closure plan.

Unplanned Temporary Closure/On-Site Contingency Plan (COMPLIANCE-12)

In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less than 60 days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be

in place prior to commercial operation of the facility and shall be kept at the site at all times.

The project owner, in consultation with the CPM, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific conditions of certification for the technical areas of **Hazardous Materials Management** and **Waste Management**)

In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

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

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

Unplanned Permanent Closure/On-Site Contingency Plan (COMPLIANCE-13)

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

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

In the event of an unplanned permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail within 24 hours and

shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the status of all closure activities.

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

Post Certification Changes to the Energy Commission Decision: Amendments, Ownership Changes, Staff Approved Project Modifications and Verification Changes (COMPLIANCE-14)

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. **It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.** Implementation of a project modification without first securing Energy Commission, or Energy Commission staff approval, may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **staff-approved project modifications** as specified below. Both shall be filed as a "Petition to Amend." Staff will determine if the change is significant or insignificant. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of approval and the process that applies are explained below. They reflect the provisions of Section 1769 at the time this condition was drafted. If the Commission's rules regarding amendments are amended, the rules in effect at the time an amendment is requested shall apply.

Amendment

The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769(a), when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a condition of certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards the petition will be processed as a formal amendment to the final decision, which requires public notice and review of the Energy Commission staff analysis and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(a). Upon request, the CPM will provide a sample petition to use as a template.

Change of Ownership

Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769 (b). This process requires public notice and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(b). Upon request, the CPM will provide a sample petition to use as a template.

Staff Approved Project Modification

Modifications that do not result in deletions or changes to conditions of certification, that are compliant with laws, ordinances, regulations and standards and will not have significant environmental impacts may be authorized by the CPM as a staff-approved project modification pursuant to Section 1769(a) (2). Once Staff files an intention to approve the proposed project modifications, any person may file an objection to Staff's determination within 14 days of service on the grounds that the modification does not meet the criteria of Section 1769 (a)(2). If a person objects to Staff's determination, the petition must be processed as a formal amendment to the decision and must be approved by the full commission at a noticed business meeting or hearing.

Verification Change

A verification may be modified by the CPM without requesting an amendment to the decision if the change does not conflict with the conditions of certification and provides an effective alternate means of verification.

Notification to CPM of a Situation Requiring an Unplanned Response from an Emergency Services Agency (COMPLIANCE 15)

The project owner shall notify the CPM within one hour by telephone of the circumstances, current status, and expected duration of all accidents, emergencies, and other abnormal incidents at the facility or appurtenant facilities, that have resulted or could result in any of the following situations:

1. Reduction in the facility's ability to respond to dispatch (excluding forced outages caused by protective equipment or other typically encountered shut down events);
2. Health and safety impacts on the surrounding population;
3. Property damage off-site;
4. Response by off-site emergency response agencies;
5. Serious on-site injury;
6. Serious environmental damage;
7. Filing of bankruptcy; and/or
8. Emergency reporting to any federal, state, or local agency.

The owner shall also provide a detailed incident report describing the incident and any impacts as described above within 30 days that shall include, as appropriate to the incident, the following information:

1. A brief description of the incident including its date, time and location;
2. A description of cause of the incident, or likely causes if it is still under investigation;
3. The location of any offsite impacts;
4. A description of emergency response actions associated with the incident;
5. Identification of responding agencies;
6. Identification of emergency notifications made to other federal, state, and/or local agencies;
7. Identification of any hazardous materials released and an estimate of the quantity released;
8. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;
9. Fines or violations assessed or being processed;
10. Name, phone number, and email address of the appropriate facility contact person having knowledge of the event; and/or
11. Corrective actions or repairs necessary, a proposed schedule, and potential cost to restore the facility to acceptable performance and availability.

Verification: The owner shall document in the annual compliance report any incidents described in the condition above and provide the time of the incident, the time of CEC CPM notification, and the date of the follow up report.

CBO DELEGATION AND AGENCY COOPERATION

In performing construction and operation monitoring of the project, Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Energy Commission staff may delegate CBO responsibility to either an independent third party contractor or the local building official. Energy Commission staff retains CBO authority when selecting a delegate CBO, including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

Energy Commission staff may also seek the cooperation of state, regional, and local agencies that have an interest in environmental protection when conducting project monitoring.

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision. The specific action and amount of any fines the Energy Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1237, but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by future law or regulations.

Informal Dispute Resolution Process

The following procedure is designed to informally resolve disputes concerning the interpretation of compliance with the requirements of this compliance plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate an informal dispute resolution process. Disputes may pertain to actions or decisions made by any party, including the Energy Commission's delegate agents.

This process may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1237, but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and conditions of certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The process encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be brought before the full Energy Commission for consideration via the complaint and investigation procedure.

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 an 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. Within seven working days of the CPM's request, the project owner shall provide a written report to the CPM of the results of the investigation, including corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to also provide an initial verbal report, within 48 hours.

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner;
4. After the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any understandings 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

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

KEY EVENTS LIST

PROJECT: WATSON COGENERATION (WATSON)

DOCKET #: 09-AFC-1

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Grading	
Start Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Gas Turbine	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
Synchronization with Grid and Interconnection	
Complete T/L Construction	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

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

CONDITION NUMBER	SUBJECT	DESCRIPTION
		identified on the Key Events List.
COMPLIANCE-7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COMPLIANCE-8	Confidential Information	Any information the project owner deems confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality.
COMPLIANCE-9	Annual fees	Payment of Annual Energy Facility Compliance Fee
COMPLIANCE-10	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COMPLIANCE-11	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure.
COMPLIANCE-12	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COMPLIANCE-13	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.

CONDITION NUMBER	SUBJECT	DESCRIPTION
COMPLIANCE-14	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.
COMPLIANCE-15	Notification to CPM of response from Emergency Services	The project owner shall notify the CPM of a response from Emergency Services.

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ATTACHMENT A: COMPLAINT REPORT/RESOLUTION FORM

COMPLAINT LOG NUMBER:_____ DOCKET NUMBER:_____

PROJECT NAME:_____

COMPLAINANT INFORMATION

NAME:_____ PHONE NUMBER:_____

ADDRESS:_____

COMPLAINT

DATE COMPLAINT RECEIVED:_____ TIME COMPLAINT RECEIVED:_____

COMPLAINT RECEIVED BY: ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE:_____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION):_____

_____

_____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:_____

_____

_____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS:_____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:_____

_____

_____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN:_____

_____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED:_____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

OTHER RELEVANT INFORMATION:_____

_____

_____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE:_____ DATE:_____

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING DOCUMENTATION, AS REQUIRED)

V. ENGINEERING ASSESSMENT

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

A. FACILITY DESIGN

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Application for Certification (AFC) describes the preliminary facility design. In considering the adequacy of the plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes, as appropriate, the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 200, pp. 5.1-1 - 5.1-2.)

Staff proposed several conditions of certification that establish a design review and construction inspection process to verify compliance with applicable standards and special requirements. (Ex. 200, p. 5.1-2.)

The Watson Project will be designed and constructed to the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and other applicable codes and standards in effect when the design and construction of the project actually begin. If the initial designs are submitted to the chief building official (CBO) for review and approval after the update to the 2007 CBSC takes effect, the 2007 CBSC provisions shall be replaced with the updated provisions. (Ex. 200, p. 5.1-3.)

In order to ensure that structures are analyzed according to their appropriate lateral force procedure, Condition of Certification **STRUC-1**, below, requires the project CBO's review and approval of the owner's proposed lateral force procedures before construction begins.

Under Section 104.2 of the CBC, the CBO is authorized and directed to enforce all provisions of the CBC. The Energy Commission itself serves as the building official, and has the responsibility to enforce the code, for all of the energy facilities it certifies. In addition, the Energy Commission has the power to interpret the CBC and adopt and enforce both rules and supplemental regulations that clarify application of the CBC's provisions.

The Energy Commission's design review and construction inspection process conforms to CBC requirements and ensures that all **Facility Design** Conditions of Certification are met. As provided by Section 104.2.2 of the CBC, the Energy Commission appoints experts to perform design review and construction inspections and act as delegate CBOs on behalf of the Energy Commission. These delegates typically include the local building official and/or independent consultants hired to provide technical expertise that is not provided by the local official alone. The Applicant, through permit fees provided by the CBC, pays the cost of these reviews and inspections. While building permits in addition to Energy Commission certification are not required for this project, the Applicant pays in lieu of CBC permit fees to cover the costs of these reviews and inspections.

Engineering and compliance staff will invite the city of Carson or a third-party engineering consultant to act as CBO for this project. When an entity has been assigned CBO duties, Energy Commission staff will complete a memorandum of understanding (MOU) with that entity to outline both its roles and responsibilities and those of its subcontractors and delegates. (Ex. 200, p. 5.1-4.)

Implementation of staff-proposed conditions of certification will ensure public health and safety and compliance with engineering design LORS. Some of these conditions address the roles, responsibilities, and qualifications of the engineers who will design and build the proposed project (Conditions of Certification **GEN-1** through **GEN-8**). These engineers must be registered in California and sign and stamp every submittal of design plans, calculations, and specifications submitted to the CBO. These conditions require that every element of the project's construction (subject to CBO review and approval) be approved by the CBO before it is performed. Items exempt from this requirement are listed in Section

105.2 of Appendix Chapter 1 of the CBC. The conditions also require that qualified special inspectors perform or oversee special inspections required by all applicable LORS.

In order to ensure that structures are analyzed according to their appropriate lateral force procedure, Condition of Certification **STRUC-1** requires the project CBO's review and approval of the owner's proposed lateral force procedures before construction begins.

Similarly, adherence to correct practice in the disciplines of civil engineering, electrical engineering, and mechanical engineering is required by Conditions of Certification **CIVIL-1** through **CIVIL-4**, **ELEC-1**, and **MECH-1** through **MECH-3**.

The Energy Commission and delegate CBO have the authority to allow some flexibility in scheduling construction activities on a case by case basis. The Energy Commission and the CBO also have the authority to interpret and accept alternate methods of construction and alternate materials.

The evidentiary record also addresses project closure, which may range from "mothballing" the facility to removing all equipment and restoring the site. (Ex. 200, p. 5.1-5.) Future conditions that could affect decommissioning are largely unknown at this time.

In order to ensure that decommissioning will be completed in a manner that is environmentally sound, safe, and protects the public health and safety, the Applicant shall submit a decommissioning plan to the Energy Commission for review and approval before the project's decommissioning begins. The plan shall include a discussion of:

- Proposed decommissioning activities for the project and all appurtenant facilities that were constructed as part of the project;
- All applicable LORS, local/regional plans, and proof of adherence to those applicable LORS and local/regional plans;
- The activities necessary to restore the site if the plan requires removal of all equipment and appurtenant facilities; and
- Decommissioning alternatives other than complete site restoration.

Satisfying the above requirements should serve as adequate protection, even in the unlikely event that the project is abandoned. Staff has proposed general

conditions (see **General Conditions**) to ensure that these measures are included in the Facility Closure Plan.

The evidentiary record conclusively establishes that the project will be designed and constructed in compliance with all applicable LORS, and that these activities will not negatively impact public health and safety.

FINDINGS OF FACT

Based on the uncontroverted evidence, the Commission makes the following findings:

1. The proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision.

2. The conditions of certification set forth below provide, in part, that qualified personnel will perform design review, plan checking, and field inspections of the project.

3. The conditions of certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality as well as public health and safety.

4. The **GENERAL CONDITIONS,** included in the **COMPLIANCE AND CLOSURE** section of this Decision, establish requirements to be followed in the event of facility closure.

CONCLUSION OF LAW

We therefore conclude that implementation of the conditions of certification listed below ensure that the Watson Cogeneration Steam and Electric Reliability Project will be designed and constructed in conformance with the applicable LORS pertinent to the engineering aspects summarized in this section of the Decision.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2007 (or the latest edition in effect when initial project engineering designs are submitted for review) California Building

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

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBSC is in effect, the 2007 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

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

The project owner shall submit plans, calculations and other related documents that have been specifically developed for the Watson Project.

Verification: Five days prior to requesting the issuance of the certificate of occupancy, the project owner shall submit to the CPM and the CBO a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.

Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the planned date of each submittal to the CBO. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request. In addition to the design submittals referenced above, plans and calculations for all construction work shall be submitted to the CBO for approval.

Verification: At least 60 days (or a project owner- and CBO-approved alternative time frame) prior to the start of the demolition of the existing structures, the project owner shall submit to the CBO and to the CPM the schedule, and the master drawings and master specifications list of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be based on hourly rates or the valuation of the facilities reviewed, or may be otherwise agreed upon by the project owner and the CBO. A copy of the contract between the owner and the CBO shall be submitted to the CPM for review and approval by Staff.

Verification: The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid. The CBO shall inform the CPM if the project owner has not met its obligations as specified in the agreement between the project owner and the CBO for payments related to CBO services.

GEN-4 Prior to the start of demolition, the project owner shall assign a California-registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are

addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The RE shall be aware of construction activities at the project site at all times. However, he/she is not required to be physically present at the job site as long as the construction work is being performed as delegated below. 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, plumbing, and electrical portions of the project, respectively. A registered civil engineer may be delegated responsibility for civil engineering aspects of the project such as grading, storm water pollution prevention practices (SWPPP), storm water management practices (SWMP), drainage, erosion, sedimentation control programs (DESCP) and similar aspects of civil engineering. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE or his/her delegate shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to CBO-approved plans and specifications.

The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

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

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

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

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

GEN-5 Prior to the start of demolition, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California.) All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

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

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;
2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems;
3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures;
4. Review, implement and monitor storm water pollution prevention practices (SWPPP);
5. Review, implement and monitor storm water management practices (SWMP);
6. Review, implement and monitor drainage, erosion, sedimentation control programs (DESCP); and
7. Review, implement and monitor all other civil engineering (earthwork) aspects of the project.

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

1. Review all the engineering geology reports;
2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load;

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

C. The engineering geologist shall:
   1. Review all the engineering geology reports and prepare a final soils grading report; and
   2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:
   1. Be directly responsible for the design of the proposed structures and equipment supports;
   2. Provide consultation to the RE during design and construction of the project;
   3. Monitor construction progress to ensure compliance with engineering LORS;
   4. Evaluate and recommend necessary changes in design; and
   5. Prepare and sign all major building plans, specifications, and calculations.

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

F. The electrical engineer shall:
   1. Be responsible for the electrical design of the project; and
   2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of demolition, the project owner shall

submit to the CBO for review and approval resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer and engineering geologist assigned to the project.

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

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

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

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the applicable edition of the CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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

The special inspector shall:

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

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

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

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

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

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next monthly compliance report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter

stating both that the above documents have been stored and the storage location of those documents.

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

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A storm water pollution prevention plan (SWPPP);
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the CBC.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

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

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

CIVIL-3 The project owner shall perform inspections in accordance with the CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies

shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

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

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

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

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit plans, calculations and other supporting documentation to the CBO for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more

stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;

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

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

The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the CBC.

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

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

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

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

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

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in the CBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC procedures. Upon completion of

construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

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

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

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

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

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner

shall request the appropriate CBO and/or Cal-OSHA inspection of that installation.

The project owner shall:

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

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

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

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

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

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required

HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 480 Volts or higher (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A. Final plant design plans shall include:

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

B. Final plant calculations must establish:

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

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

1. receipt or delay of major electrical equipment;
2. testing or energization of major electrical equipment; and
3. a signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications

conform to requirements set forth in the Energy Commission Decision.

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

B. POWER PLANT EFFICIENCY

The California Energy Commission must determine whether energy use by the Watson Project would result in significant adverse impacts on the environment, as defined in the California Environmental Quality Act (CEQA). If the Energy Commission finds that the Watson Project's consumption of energy creates a significant adverse impact, it must determine whether there are any feasible mitigation measures that could eliminate or minimize the impact. (Cal. Code Regs., tit. 14, § 15126.4(a)(1), Appendix F.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Watson Cogeneration Company proposes to expand the existing Watson Cogeneration Facility, located in the city of Carson, by 85 MW plus an additional 659,000 pounds per hour of process steam generation. The Watson Project would consist of one GE 7EA combustor turbine generator (CTG) and one duct fired heat recovery steam generator (HRSG) operating in parallel with four existing CTGs/HRSGs, and an expansion of an existing mechanical draft cooling tower (two additional cells). For air emissions control, the CTG would be equipped with dry low-NOx combustors and the HRSG with a selective catalytic reduction (SCR) system. (Ex. 1, §§ 3.1, 3.4.1.)

The project would be fueled by a blend of natural gas and refinery gas with the CTG running primarily on natural gas and the refinery gas being used for duct burning, and thus steam production, in the HRSG. Refinery gas would be provided by the adjacent BP Carson refinery. Natural gas would be delivered to the project site through an existing Southern California Gas Company (SoCal Gas) pipeline that currently serves the Watson Cogeneration Facility. (Exs 1, §§ 3.4.2, 3.11.6.1; 200, p. 5.3-2.)

During base load operation at average ambient conditions and with no duct firing, the Watson Project is expected to burn natural gas at a rate of 926 million British thermal units (MMBtu) per hour, LHV. The estimated fuel consumption (a blend of natural gas and refinery gas) with duct firing at the same conditions would be 1,310 MMBtu per hour. (Ex. 200, p. 5.3-3.)

The electric generation heat rate of a cogeneration plant can be expressed as "heat rate chargeable to power." This is calculated by subtracting the fuel used to serve the cogeneration load from total fuel consumption; the remainder is fuel chargeable

to power generation. Electrical power would be generated by Watson (calculated as "heat rate charged to power") at an efficiency of about 52 percent LHV. (*Id*.)

The Applicant proposes to use evaporative inlet air cooling, a HRSG duct burner (re-heaters), and a single pressure natural circulation HRSG. (Ex. 1, §§ 3.1, 3.4.5, 3.4.5.2.) These features contribute to the efficiency of the project. The project would also be operating as one of the five trains of the Watson Cogeneration Facility, which allows for high efficiency for the combined projects during unit turndown; one CTG can operate at a more efficient full load while others are shut down.

The GE Frame 7EA gas turbine to be employed in the project is one of the most modern and efficient such machines now available. It would operate in simple cycle configuration with waste heat being captured to produce steam for cogeneration. This cogeneration configuration would thus have a capacity similar to the turbine running in simple cycle, but would have a thermal efficiency similar to a combined cycle configuration. In a one-on-one combined cycle configuration, the GE 7EA is nominally rated at 130 MW and 50.2 percent maximum full load efficiency LHV at International Standards Organization (ISO) conditions[1] (GTW 2009). By comparison, the project would be expected to reach at least 51.7 percent maximum full load efficiency LHV. The cogeneration configuration allows the project to meet a lower capacity demand at a slightly higher efficiency. (Ex. 200, p. 5.3-4.)

Alternative generating technologies for the Watson Project are considered elsewhere in this Decision, and in the AFC (Ex. 1, § 4.4). Fossil fuels, nuclear, solar, biomass, hydroelectric, wind, and geothermal technologies are all considered. Given the project objectives, location, air pollution control requirements, and commercial availability of the above technologies, we find that only gas-burning technologies are feasible.

Fuel typically accounts for over two-thirds of the total operating costs of a fossil-fuel-fired power plant. Under a competitive power market system, where operating costs are critical in determining the competitiveness and profitability of a power plant, the plant owner is thus strongly motivated to purchase fuel-efficient machinery. Modern gas turbines embody the most fuel-efficient electric

[1] ISO standard conditions are 15°C (59°F), 60% relative humidity, and one atmosphere of pressure (equivalent to sea level).

generating technology available today. Their higher firing temperatures offer increased efficiency over conventional turbines. The technology has been proven reliable through numerous installations and extensive run time in commercial operation. Emission levels are also proven, and guaranteed emission levels have been reduced based on operational experience and design optimization by the manufacturers. (Ex. 200, p. 5.3-5.)

One possible alternative to the chosen project configuration would be to use the same 7EA turbine in a one-on-one combined cycle configuration, which would incorporate an additional steam turbine generator (STG). In combined cycle, the GE 7EA would produce upwards of 130 MW at approximately 50 percent efficiency. However, the steam turbine would only be usable when steam is not needed by the BP Carson Refinery. The purpose of the project, as stated in the project objectives, is first to provide added steam supply reliability to the refinery; the Applicant estimates that the Watson Project would be operated 95 percent of the year to meet steam supply requirements (Ex. 1, § 3.4.5.3). Thus, an STG would likely be underused, making this configuration unattractive. (*Id*.)

Aeroderivative gas turbines could also have been considered for this project. A pair of GE LM6000 simple cycle gas turbines with HRSGs would produce nearly as much electric power and steam as a simple cycle Frame 7EA, approximately 87 MW at 40.1 percent efficiency. This is not a viable option, however, given the space constraints of the project site. (Ex. 200, p. 5.3-6.)

The proposed project configuration of one GE Frame 7EA simple cycle gas turbine in cogeneration mode appears to be the most efficient option for the Watson Project.

A further choice of alternatives involves the selection of gas turbine inlet air cooling methods. The two commonly used techniques are the evaporative cooler, or fogger, and the chiller. Both devices increase power output by cooling the gas turbine inlet air. A mechanical chiller can offer greater power output than the evaporative cooler on hot, humid days, but it consumes electric power to operate its refrigeration process, thus slightly reducing overall net power output and, thus, overall efficiency. An absorption chiller uses less electric power but necessitates the use of a substantial inventory of ammonia. An evaporative cooler or a fogger

boosts power output best on dry days; it uses less electric power than a mechanical chiller, possibly yielding slightly higher operating efficiency. The difference in efficiency among these techniques is relatively insignificant. (Ex. 200, p. 5.3-6.)

Given the climate at the project site and the relative lack of clear superiority of one system over the other, we find that the Applicant's choice of an evaporative cooler for gas turbine inlet air cooling would yield no significant adverse energy impacts.

There are no nearby power plant projects that hold the potential for cumulative energy consumption impacts when aggregated with the project. The evidence shows that construction and operation of the project would not bring about indirect impacts, in the form of additional fuel consumption, that would not have occurred but for the project. The older, less efficient power plants consume more natural gas to operate than the new, more efficient plants such as the Watson Project. Since natural gas would be burned by the power plants that are most competitive on the spot market, the most efficient plants would likely run the most. The high efficiency of the proposed project should allow it to compete very favorably, running at a high capacity factor, replacing less efficient power generating plants in the market, and therefore not impacting or even reducing the cumulative amount of natural gas consumed for power generation.

We therefore find that the Watson Project would not constitute a significant adverse impact on energy resources.

In conclusion, the uncontradicted evidence of record shows that the Watson Project will provide steam and electricity in the most fuel efficient manner practicable, without creating adverse effects on energy supplies or resources. The project will not require additional sources of energy supply or consume energy in a wasteful or inefficient manner. (Ex. 200, pp. 5.3-5 - 5.3-7.)

FINDINGS OF FACT

Based on the uncontroverted evidence of record, we make the following findings:

1. The Watson Project will produce approximately 85 MW of electrical power, operate in simple cycle mode, utilizing one GE Frame 7EA gas turbine.

2. Under average annual ambient conditions, the project will generate electricity at an overall fuel efficiency of approximately 51.7 percent, LHV, with duct burning.

3. The project's configuration incorporates HRSG duct burners and an evaporative cooler. This configuration is well suited to the operation of a base load plant such as the project.

4. Use of the GE Frame 7EA is appropriate for the Watson Project.

5. The project will not require the development of new fuel supply resources.

6. The project will consume natural gas in as efficient a manner as practicable.

7. The evidence of record contains a comparative analysis of alternative fuel sources and generation technologies, none of which is superior to the proposed project at meeting project objectives in an efficient manner.

8. No Federal, State, or local laws, ordinances, regulations, or standards apply to the efficiency of this project.

CONCLUSION OF LAW

The Watson Project will not create adverse effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner. No Conditions of Certification are required for this topic area.

C. POWER PLANT RELIABILITY

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

The responsibility for maintaining system reliability falls largely to control area operators such as the California Independent System Operator (California ISO) that purchase, dispatch, and sell electric power throughout the state. (Ex. 200, p. 5.4-1.) Protocols to ensure sufficient electrical system reliability are still being developed. For example, “must run” power purchase agreements and “participating generator” agreements are two mechanisms that contribute to an adequate supply of reliable power.

The Public Utilities Code requires the California Public Utilities Commission to consult with the California ISO to establish resource adequacy requirements for all load-serving entities (basically, public and privately owned utility companies). These requirements include maintaining a minimum reserve margin (extra generating capacity to serve in times of equipment failure or unexpected demand) and maintaining sufficient local generating resources to satisfy the load-serving entity’s peak demand and operating reserve requirements.

In order to fulfill this mandate, the California ISO has begun to establish specific criteria for each load-serving entity under its jurisdiction. These criteria guide each load-serving entity in deciding how much generating capacity and ancillary services to build or purchase, after which the load-serving entity issues power purchase agreements to satisfy these needs.

According to the evidence, summarized below, these criteria have been developed on the assumption that individual power plants in the current competitive market will continue to exhibit historical reliability levels. (Ex. 200, p. 5.4-2.) However, it is possible that, if numerous power plants operated at reliability levels sufficiently lower than historical levels, this assumption would prove invalid. Therefore, to ensure adequate system reliability, we examine whether individual power plants will be built and operated to the traditional level of reliability reflected in the power generation industry because, where a power plant compares favorably to industry norms, it is not likely to degrade the overall reliability of the electric system it serves.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Applicant proposes to operate the 85-megawatt (MW) (nominal net output) Watson Project, a cogeneration power plant, to meet a need for process steam for the adjacent BP Carson Refinery and capacity and voltage support in the region of the city of Carson (Ex. 1, § 2.0). The project is expected to achieve a service factor, similar to an equivalent availability factor (EAF), in the range of 90 to 100 percent (Ex. 1, §§ 3.11.3, 3.11.4). The Applicant expects to operate the plant at a capacity factor of 95 percent during each year of its projected 30-plus years of operation. (Exs. 1, § 3.4.5.3; 200, pp. 3-3; 5.4-2 - 5.4-3).

1. Equipment Availability

Equipment availability will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The project owner will use a QA/QC program typical in the power industry. Equipment will be purchased from qualified suppliers and the project owner will perform receipt inspections, test components, and administer independent testing contracts. To ensure these measures are taken, we have incorporated appropriate conditions of certification in the **Facility Design** section of this Decision. (Ex. 200, p. 5.4-3.)

2. Plant Maintainability

The Applicant plans to provide appropriate redundancy of function for the project (Ex. 1, § 3.11.4). The Watson Project is an expansion of the Watson Cogeneration Facility and would be operating in parallel with the facility's four existing trains. Thus the project acts to enhance the operational reliability of the Watson Cogeneration Facility. If the project were to experience an equipment failure, the four trains at the original plant would still be able to operate, so the combined facilities would still generate power (at reduced output). Further, all plant ancillary systems are also designed with adequate redundancy to ensure continued operation in the face of equipment failure. We therefore find that equipment redundancy would be sufficient for a project such as this. (Ex. 200, p. 5.4-4.)

3. Fuel and Water Availability

The Watson Project would burn natural gas supplied by Southern California Gas Company (SoCal Gas) and refinery gas supplied by the adjacent BP Carson Refinery. Natural gas fuel would be supplied to the project via the existing pipeline connection that currently serves the Watson Cogeneration Facility (Ex. 1, §§ 3.4.7, 3.7.1, 3.11.6.1). This natural gas system represents a resource of considerable capacity and offers access to adequate supplies of gas from the Rocky Mountains, Canada, and the Southwest. The evidence establishes that there would be adequate natural gas supply and pipeline capacity to meet the project's needs. (Ex. 200, p. 5.4-4.)

The Applicant plans to use the municipal water supply and groundwater which is available to the existing Watson Cogeneration Facility. Water would be used for utility, fire system, and inlet air fogger consumption, boiler feedwater makeup, and heat recovery steam generator (HRSG) blowdown quenching (Ex. 1, §§ 3.4.8, 3.11.6.2). We find that these sources constitute a reliable supply of water. (For further discussion of water supply, see the **Soil and Water Resources** section of this Decision.)

4. Natural Hazards

The site lies within the seismically active Southern California region. However, no active or potentially active faults have been identified near the project site (Ex. 1, §§ 3.11.1.1, 5.3.1.2). The project will be designed and constructed to the latest applicable LORS. Compliance with current seismic design LORS represents an upgrading of performance during seismic shaking compared to older facilities since these LORS have been continually upgraded. Because it would be built to the latest seismic design LORS, this project would likely perform at least as well as, and perhaps better than, existing plants in the electric power system. The conditions of certification we have imposed herein ensure this; see the section of this Decision entitled **Facility Design**. In light of the general historical performance of California power plants and the electrical system in seismic events, we find that the power plant's functional reliability during earthquakes should meet or exceed current standards. (Ex. 200, p. 5.4-5.)

The site is not within a 100-year flood zone (Ex. 1, § 3.11.1.2). No evidence in the record shows cause for concern with power plant functional reliability due to

flooding. For further discussion, see **Soil and Water Resources** and **Geology and Paleontology**.

5. Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors and other related reliability data. NERC currently reports summary generating unit statistics for the years 2002 through 2006 which demonstrate an availability factor of about 86.5 percent for combined cycle units of all megawatt sizes. The model of gas turbine that would be employed in the Watson Project has been on the market for many years now and can be expected to exhibit typically high availability. Further, since the plant would be operating in parallel with the four units at the Watson Cogeneration Facility, maintenance can be scheduled during those times of year when plant output is not required to meet BP Carson Refinery's steam requirements or market demand, typical of industry standard maintenance procedures. The middle range of the Applicant's prediction of an annual availability factor of 90 to 100 percent (Ex. 1, §§ 3.11.3, 3.11.4) appears reasonable. The stated procedures for assuring design, procurement, and construction of a reliable power plant appear to be in keeping with industry norms, and we find they are likely to yield an adequately reliable plant.

We are thus persuaded by the evidence that the project will likely reach its predicted annual availability factor of 90 to 100 percent. (Ex. 200, pp. 5.4-5 - 5.4-6.)

FINDINGS OF FACT

Based on the uncontested evidence, we make the following findings:

1. No federal, state, or local/county LORS apply to the reliability of the Watson Project.

2. A project's reliability is acceptable if it does not degrade the reliability of the utility system to which it is connected.

3. The North American Electric Reliability Corporation (NERC) reports that, for the years 2002 through 2006, combined cycle units of all sizes (in megawatts) exhibited an availability factor of about 86.5 percent.

4. An availability factor of 90 to 100 percent is achievable by the Watson Project.

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

6. Appropriate conditions of certification included in the **Facility Design** portion of this Decision ensure implementation of the QA/QC programs and conformance with seismic design criteria.

7. The project's fuel and water supplies will be reliable.

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

9. The project will incorporate an appropriate redundancy of function for its equipment.

CONCLUSION OF LAW

1. We therefore conclude that the Watson Project will meet industry norms and not degrade the overall reliability of the electrical system. There are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation. No conditions of certification are required for this topic area.

D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant …to a point of junction with an interconnected transmission system." (Pub. Res. Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The record indicates that the Applicant in this case accurately identified all necessary interconnection facilities.

The California Independent System Operator (California ISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. The Commission works in conjunction with the California ISO in assessing a project. The proposed Watson Project would connect to SCE's existing 230-kV Hinson Substation and would require both analysis by SCE and the approval of the California ISO.

This Transmission System Engineering (TSE) analysis examines whether this project's proposed interconnection conforms to all laws, ordinances, regulations, and standards (LORS) required for safe and reliable electric power transmission. Additionally, under the California Environmental Quality Act (CEQA), the Energy Commission must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the Energy Commission. (14 Cal. Code Regs., § 15378.) The Commission must, therefore, identify the system impacts and necessary new or modified transmission facilities downstream of the proposed interconnection that are required for interconnection and that, when included with the other project features, represent the whole of the action.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed Watson Cogeneration Steam and Electric Reliability Project is an expansion of a cogeneration facility that is located in the city of Carson in the County of Los Angeles. The existing cogeneration facility is owned by Watson Cogeneration Company and operated by BP West Coast Products, LLC-BP Carson Refinery. The project consists of adding a fifth combustion turbine generator/ heat recovery steam generator (CTG/HRSG) to the existing configuration, hence it is also referred to as the "fifth train". (Ex. 200, p. 5.5-4.)

The existing facility has a net output of 385 MW and consists of four GE 7EA CTG's, four HRSGs and two Steam turbine generators (STG). The proposed plant will add a nominal 85 megawatt (MW) CTG with a single-pressure HRSG to provide additional process steam to the BP Carson refinery. The proposed generating unit (CTG) would be connected to the low side of its dedicated 13.8/69-kV generator step-up (GSU) transformer through 13.8-kV, 2000 Amps SF6 Circuit Breaker (CB). The GSU transformer would be rated at 13.8/69-kV and 67/89/112 Megavolt Ampere (MVA) at 55 centigrade. The high side of the transformer would be connected to the proposed on site 69-kV Gas Insulated Substation (GIS) via underground short segment of dielectric cables. (*Id.; Ex. 23, p. 2*) Also included would be a new, underground line of insulated copper cables connecting the project's power generator to the new substation. (Ex. 200, p. 5.5-4.)

Electric power generated at the Watson Cogeneration facility, which is not consumed for internal refinery use, is transmitted from the existing switchyard to the SCE Hinson substation. The existing transmission line is a double circuit, single conductor per phase at 230-kV. All conductors are 1033 Kcmil ACSR and each circuit is rated to carry the full output of the project. The existing 1.6 mile-long double circuit generator tie lines are supported by lattice steel towers. (*Id.*)

For the interconnection of this proposed project to the grid, the interconnecting utility (SCE) and the control area operator (California ISO) are responsible for ensuring grid reliability. These two entities assess the potential impacts of the proposed Watson Project on the transmission system and any mitigation measures needed to ensure system conformance with the applicable utility reliability criteria, NERC planning standards, WECC reliability criteria, and California ISO reliability criteria. Phase 1 and Phase 2 studies are used to determine the impacts of the proposed Watson Project on the transmission grid. Staff relies on these studies and any review conducted by the California ISO to determine the potential effects of the proposed Watson Project on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards. Phase 1 and Phase 2 studies analyze the grid with and without the proposed Watson Project, under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds through which grid reliability is determined. The studies analyze the potential impact of the proposed Watson Project for the anticipated first year of operation, and are based on a forecast of loads, generation, and transmission. Load forecasts are developed by

the interconnected utility. Generation and transmission forecasts are established by an interconnection queue. The studies focus on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission system, voltage collapse, loss of loads, or cascading outages), and short circuit current. If the studies show that the interconnection of the project causes the grid to be out of compliance with the reliability standards, then the study will identify mitigation measures or ways in which the grid could be brought into compliance with the reliability standards.

When a project connects to the California ISO-controlled grid, both the studies and mitigation measures must be reviewed and approved by the California ISO. If either the California ISO or interconnecting utility determines that the only feasible mitigation includes transmission modifications or additions requiring CEQA review, the Energy Commission must analyze those modifications or additions according to CEQA requirements.

1. Study Results

a. Transient Cluster Phase 1 (Power Flow Study)

<u>Base case condition (N-0)</u>:

The Phase 1 Cluster Study identified that there are no post-project overload criteria violations in the SCE system area under the 2013 Heavy Summer and Spring conditions.

<u>Single Outage contingency (N-1)</u>:

The Phase 1 Cluster Study identified that there is one single contingency (N-1) overload that was aggravated by the addition of the Watson Project in the SCE system.

<u>Overload</u>:

The Lighthipe-Mesa 220-kV transmission line was overloaded due to the N-1 outage of Alamitos-Barre No.2 220-kV transmission line under the Heavy Spring contingency analysis.

Mitigation: The above aggravated N-1 thermal overload could be mitigated by upgrading the existing Mesa wave trap to 3000 Ampere ratings.

Double Outage Contingency (N-2):

The phase 1 cluster study identified five pre-existing overloads which were aggravated by the addition of the Watson Project under N-2, Heavy Spring conditions.

Overload facilities:

Del Amo-Hinson 220-kV line, Lighthipe-Mesa 220-kV line and Mesa-Rodando 220-kV line.

Mitigation: The above aggravated N-2 thermal overloads could be mitigated by upgrading the existing two Mesa wave traps to 3000 Ampers and Hinson wave trap to 3000 Amperes.

Overload facilities:

Lighthipe-Long Beach 220-kV line and Hinson-Lighthipe 220-kV line.

Mitigation: The above aggravated N-2 thermal overloads could be mitigated by adding the Watson Project to an existing plan for a Special Protection System (SPS) approach for transmission reliability, or implementing congestion management.

(Ex. 200, p. 5.5-6)

b. Short Circuit Study and Substation Evaluation

Short circuit studies were performed to determine the degree to which the addition of the power generated by the Watson Project increases fault duties at SCE substations, and other 69-kV, 115-kV, 230-kV, and 500-kV busses in the study area. The busses at which faults were simulated, the maximum three-phase and single-line-to-ground fault currents at these busses both with and without the project, and information on the breaker duties at each location are summarized in the Short Circuit Study results tables in the Phase 1 study. (Ex. 200, p. 5.5-7.)

The Phase1 study depicts several areas of the SCE system with extremely high Short Circuit Duty, and various methods of mitigation are being evaluated. Given the high X/R ratio and close proximity of the calculated Short Circuit duties to the next higher CB ratings (80kA), SCE would likely need to upgrade the 220-kV bus to 100kA. (*Id*.)

Additionally, SCE's Serrano substation is shown with a post project three-phase Short Circuit Duty of 69.9kA at the 220-kV bus, however existing SCE equipment is rated at 63kA. The Serrano substation is critical to the operation of the SCE system, and it is physically located in a congested metropolitan area. SCE will further evaluate the impacts of the Short Circuit Duty at these stations, and investigate mitigation during the Phase 2 study. (*Id*.)

c. Transient Study Results

The Transient Study was conducted for the critical single and double contingencies affecting the area listed in the table 3.6 and 3.7 of the SCE Phase 1 Cluster study. The three-phase faults with normal clearing are studied for single contingencies; single-line-to-ground faults with delayed clearing are studied for double contingencies. All outage cases were evaluated with the assumption that existing SPS or Remedial Action Schemes (RAS) would operate as designed where required. Transient stability study indicates there would be no system performance issues caused by the Watson Project. (Ex. 200, p. 5.5-6.)

d. Post-Transient Study Results

The NERC/WECC planning standards require that the system maintain post-transient voltage stability when either critical path transfers or area loads increase by five percent for Category B contingencies, and 2.5 percent for Category C contingencies. Post-transient studies conducted for similar or larger generators in the area concluded that voltage remains stable under both N-1 and N-2 contingencies. All outage cases were evaluated with the assumption that existing SPS or RAS would operate as designed where required. The studies determined that the system remained stable with the proposed upgrades in place under both single and double contingency outage conditions and the addition of the Watson Project would not trigger any new post-transient criteria violations. (Ex. 200, p. 5.5-7.)

2. Compliance with LORS

The findings of the studies conducted for the proposed Watson Project would comply with the NERC/WECC planning standards and California ISO reliability criteria. With the implementation of Conditions of Certification **TSE–1** through **TSE–8**, we conclude that the project would meet the requirements and standards of all applicable LORS for TSE.

FINDINGS OF FACT

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

1. The Watson Project will not cause any new transmission line overloads under normal or contingency conditions but will exacerbate pre-project overloads under both normal and contingency conditions.

2. The identified overloads will be mitigated by appropriate upgrades; therefore, there will be no adverse impacts to the transmission system from the Watson Project's integration.

3. The proposed interconnecting facilities are adequate, and planned in accordance with good utility practices.

4. All impacts to the transmission system are mitigated to less-than-significant with implementation of the conditions of certification.

5. The Watson Project switchyard and interconnection facilities will be adequate and reliable.

6. The power plant switchyard, outlet lines, and termination are in accordance with good utility practices and are acceptable.

7. The conditions of certification are adequate to ensure that the Watson Project does not adversely impact the transmission grid.

CONCLUSIONS OF LAW

1. With the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnection for the project will not contribute to significant adverse direct, indirect, or cumulative impacts.

2. The conditions of certification below ensure that the transmission-related aspects of the Watson Project will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

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

Verification: Prior to the start of construction of the transmission facilities, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in Table 1: Major Equipment List below). Additions and deletions shall be made to the Table only with CPM and CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

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

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer <u>and at least one of each</u> of the following to the project:

1. a civil engineer;
2. a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;
3. a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; or
4. a mechanical engineer.

(Business and Professions Code sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California.)

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

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

The electrical engineer shall:

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

<u>Verification:</u> Prior to the start of rough grading, the project owner shall submit to the CBO for review and approval the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project

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

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

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action (2001 California Building Codes, Chapter 1, section 108.4, approval required; Chapter 17, section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, section 3317.7, Notification of Noncompliance). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and shall reference this condition of certification.

Verification: The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action required to obtain the CBO's approval.

TSE-4 For the power plant switchyard, outlet line and termination, the project owner shall not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

c) the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: Prior to the start of each increment of construction of the transmission facilities, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

TSE-5 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations to the CBO as determined by the CBO.

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", California ISO standards, National Electric Code (NEC) and related industry standards.

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

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

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

e) Termination facilities shall comply with applicable SCE interconnection standards.

f) The project owner shall provide to the CPM:

   a. The Special Protection System (SPS) sequencing and timing if applicable;

   b. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable;

   c. The Transition Cluster Phase II Interconnection Study report including an Operational study based on mid 2013 or current Commercial Operation Date (COD) system conditions from the California ISO and/or SCE; and

   d. A copy of the executed Large Generator Interconnection Agreement signed by the California ISO and the project owner.

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

a. Design drawings, specifications and calculations conforming with CPUC General Order 95 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders," NEC, applicable interconnection standards

and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment;

b. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[1] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards;

c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **TSE-5** 1 through 6 above;

d. The Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM;

e. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable;

f. The Transition Cluster Phase II Interconnection Study report from the California ISO and/or SCE; and

g. A copy of the executed Large Generator Interconnection Agreement signed by the California ISO and the project owner.

TSE-6 The project owner shall inform the CPM and CBO of any impending changes that may not conform to requirements **TSE-5** 1 through 6, and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

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

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

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

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

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

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

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

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

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

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

The proposed Watson Project transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This portion of the Decision assesses the potential for the transmission line to create the various impacts mentioned below, as well as whether mitigation measures are required to reduce any adverse effects to insignificant levels.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed Watson Project transmission system would consist of a new underground line of insulated copper cables connecting the project's power generator to a new, on-site 69-kV gas-insulated substation.

The overhead 230-kV line to be used (without upgrades) is supported on lattice steel towers. The project's proposed underground line would be designed, placed underground and operated according to SCE guidelines reflecting compliance with the safety and field-reducing measures specified in CPUC's General Order (GO)-128. The potential for significant electric and magnetic field and nonfield impacts of concern is assessed using specific evaluative criteria.

1. Potential Impacts and Mitigation

The potential impacts from the project's transmission line involve aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and electric and magnetic field (EMF) exposure. Regarding each of these potential impacts, the evidence conclusively establishes the following:

a. Aviation Safety

The evidence shows that the 230-kV tie-in line to be used for the proposed Watson Project is an existing SCE line sited according to SCE guidelines on aviation safety as required by current LORS. The new, project-related underground line does not protrude into the navigable space and would thus not pose a collision hazard to area aircraft. (Ex. 200, p. 4.11-5.) Therefore, we find that the project poses no potential hazard with respect to aviation safety.

b. Interference with Radio-Frequency Communication

The existing overhead tie-in 230-kV line to be used for the Watson Project was designed, erected, and is presently operated and maintained according to SCE's guidelines which comply with existing LORS on radio-frequency interference. Since electric fields are unable to penetrate the soil and other materials, the proposed underground line would be unable to produce these above-ground electric field-related radio-frequency impacts. We therefore find that the project poses no potential to create new interference with radio-frequency communication. (Ex. 200, p. 4.11-6.)

c. Audible Noise

This is typically perceived as a characteristic crackling, hissing, or frying sound or hum, especially in wet weather. The noise level depends upon the strength of the line's electric field, and is a concern mainly from lines of 345-kV or higher. It can be limited through design, construction, and maintenance practices. Such noise is usually generated during rainfall, but mainly from overhead lines of 345-kV or higher. It is, therefore, not generally expected at significant levels from lines of less than 345-kV as proposed to be used for the Watson Project. The proposed underground line would not produce the above-ground electric fields that produce such noise. We therefore find that there would be no operational risk of audible noise of any significance. (Ex. 200, p. 4.11-6.)

d. Hazardous Shocks

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

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public.

The proposed tie-in line was designed, erected, and is currently operated according to the required SCE guidelines for preventing shock hazards.

Implementation of Staff's recommended Condition of Certification **TLSN-1** for the proposed underground line would prevent any hazardous shocks. (Ex. 200, p. 4.11-7.)

e. Nuisance Shocks

Nuisance shocks are typically caused by direct contact with metal objects electrically charged by fields from the energized line. They are effectively minimized through grounding procedures for all metallic objects within the right-of-way. Compliance with Condition of Certification **TLSN-1** would be adequate to prevent operational nuisance shocks from the proposed underground cables. (*Id.*)

f. Fire Hazards

Fire can be caused by sparks from the line's conductors or by direct contact between the line and nearby trees or other combustible objects. Standard fire prevention and suppression measures will continue to be implemented for the proposed tie-in line. Condition of Certification **TLSN-1** for the proposed underground line will ensure construction according to the fire risk-minimizing requirements of CPUC's GO-128. (*Id*.)

g. Exposure to Electric and Magnetic Fields

Electric and magnetic fields (EMF) occur whenever electricity flows. The possibility of deleterious health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines. Due to the present scientific uncertainty regarding potential health effects from EMF exposure, CPUC policy requires reduction of such fields in the design, construction, and maintenance of new or modified lines, if feasible, without affecting the safety, efficiency, reliability, and maintainability of the transmission grid. (Ex. 200, p. 4.11-8.)

The CPUC requires each new transmission line in California to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved. EMF fields produced by new lines must be similar to the fields of comparable lines in that service area.

Condition of Certification **TLSN-2** requires that actual field strengths be measured, according to accepted procedures, to insure that the field intensities

are similar to those of other SCE lines. Such similarity reflects mitigation efficiency and is an important aspect of compliance with present CPUC requirements. No similar measurements are recommended for the proposed underground line since undergrounding produces fields of the least intensity through cancellation from closer-placement of the current-carrying conductors. (Ex. 200, p. 4.11-10.)

Specific field strength-reducing measures were incorporated into the design of the existing SCE overhead line to be used and would also be incorporated into the design for the proposed new underground line. These measures are intended to ensure the safety and field strength minimization currently required by the CPUC in light of the concern over EMF exposure and health. (Ex. 200, p. 4.11-10.)

The evidence shows that the project will be designed, constructed, operated, and maintained in compliance with applicable LORS. Implementation of the Conditions of Certification will ensure that any impacts are reduced to less than significant levels.

2. Cumulative Impacts and Mitigation

When field intensities are measured or estimated for a specific location, they reflect the interactive, and therefore, cumulative effects of fields from all contributing conductors. This interaction could be additive, or subtractive depending on prevailing conditions. As noted by the Applicant (Ex 1, pp. 3-46 through 3-49), the conductors for the proposed project lines are, or would be, located within the existing facility property boundaries meaning that the measured intensities would reflect the interactive and thus cumulative impacts of fields from contributing lines. Since both project lines have been, or would be designed according to applicable field-reducing SCE guidelines (as currently required by the CPUC for effective field management), any contribution to total area exposures should be at levels expected for SCE lines of similar voltage and current-carrying capacity. It is this similarity in intensity that constitutes compliance with current CPUC requirements on EMF management. The actual field strengths and contributions from addition of the project's power would be reflected by the field strength measurements specified in Condition of Certification **TLSN-2**.

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FINDINGS OF FACT

1. The Watson Project includes a new, underground line of insulated copper cables connecting the project's power generator to its new on-site 69-kV substation.

2. The evidentiary record includes analyses of potential impacts from the project's transmission line involving aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.

3. The available scientific evidence does not establish that EMF fields pose a significant health hazard to humans.

4. The electric and magnetic fields generated by the project's transmission line will be managed to the extent the CPUC considers appropriate, based on available health effects information.

5. The project's transmission line will comply with existing LORS for public health and safety.

6. The project's transmission line will incorporate standard EMF-reducing measures established by the CPUC and used by SCE.

7. The project owner will provide field intensity measurements before and after line energization to assess EMF contributions from the project-related current flow.

8. The new transmission line will not result in significant adverse environmental impacts to public health and safety or cause significant direct, indirect, or cumulative impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

CONCLUSIONS OF LAW

1. Implementation of the conditions of certification, below, will ensure that the LEC Project's outlet line complies with all applicable laws, ordinances, regulations, and standards relating to **Transmission Line Safety and Nuisance** as identified in the pertinent portion of **Appendix A** of this Decision.

2. The Watson Project's new transmission outlet line will not have a significant impact on the environment because of transmission line safety and nuisance factors.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct, operate, and maintain the proposed new underground Watson line according to the requirements of CPUC's GO-128.

Verification: At least 30 days before starting construction of the proposed new underground line, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the line and related structures will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the existing overhead 230-kV overhead line to be used at the points of maximum intensity along the route. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed not later than six months after the start of operations.

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

VI. PUBLIC HEALTH AND SAFETY

A. GREENHOUSE GAS (GHG) EMISSIONS

1. Introduction and Summary

The generation of electricity using fossil fuels, such as the natural gas that the Watson Project will consume, produces both "criteria pollutants" and greenhouse gas (GHG) emissions. Criteria pollutants are emissions that are known to adversely affect public health and for which regulatory agencies have established legal "criteria" which limit both the amount of the pollutants that may be emitted as well as the concentrations of the pollutants in the air. The project's criteria pollutant emissions and its compliance with applicable air quality laws are discussed in the **Air Quality** section of this Decision. This section assesses the GHG emissions that are likely to result from the construction and the operation of the project.

The GHGs consist of carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perflurocarbons (PFC). CO_2 emissions are far and away the most common of these emissions; as a result, even though the other GHGs have a greater impact on climate change on a per-unit basis, GHG emissions are often expressed in terms of "metric tons of CO_2-equivalent" ($MTCO_2e$) for simplicity. (Ex. 200, p. 4.1-89.)

There is general scientific consensus that climate change is occurring and that man-made emissions of GHG, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. (Ex. 200, p. 4.1-90.) Adding GHG to the atmosphere increases the insulating power of the air and thereby traps more heat at and near the earth's surface. The California Legislature has declared that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Health & Saf. Code, § 38500; *Id*.)

In December 2009, the U.S. Environmental Protection Agency (EPA) declared that greenhouse gases (GHGs) threaten the public health and welfare of the American people. Regulating GHGs at the federal level is required by the Prevention of Significant Deterioration Program (PSD) that took effect July 1,

2011 for new facilities that exceed an annual emissions rate of 100,000 tons[1] per year (tpy) of carbon dioxide-equivalent (CO2E) emissions, or for additions to an existing facility, like the Watson Project, if they exceed 75,000 tpy CO2E. The Watson Project is estimated to emit about 700,000 tpy CO2, which should be about the same in CO2E. (Ex. 200, p. 4.1-89.)

In this part of the Decision, we determine that:

- The Watson Project's construction-related GHG emissions will be insignificant;

- The GHG emissions from a power plant's operation should be assessed not by treating the plant as a stand-alone facility operating in a vacuum, but rather in the context of the operation of the entire electricity system of which the plant is an integrated part;

- The GHG emissions from a power plant's operation should be assessed in the context of the state's GHG laws and policies, such as AB 32;

- The Watson Project's operation will be consistent with the state's GHG goals and policies and will help achieve the state's GHG goals, by (1) causing a decrease in overall electricity system GHG emissions; and (2) fostering the addition of renewable generation into the system, which will further reduce system GHG emissions; and

- The Watson Project's operation will be in compliance with applicable state and federal LORS pertaining to GHG emissions.

2. Policy and Regulatory Framework

As the Legislature stated 35 years ago, "it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection." (Pub. Res. Code, § 25001.) Today, as a result of legislation, the most recent aspect of "environmental quality protection" is the reduction of GHG emissions. Several laws and statements of policy are applicable as shown by **Greenhouse Gas Table 1** below.

[1] The US EPA promulgated its GHG rules in short tons (2000 pounds per ton). The EPS standard and most other GHG regulations and discussions are in metric tonnes, or 1000 kilograms per tonne. The conversion is 1.10231 short tons per 1 metric tonne.

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

Applicable Law	Description
Federal	
40 Code of Federal Regulations (CFR) Parts 51, 52, 70 and 71	This rule "tailors" GHG emissions to PSD and Title V permitting applicability criteria.
40 CFR Part 98	This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2 equivalent emissions per year.
40 CFR Parts 51 and 52	Effective July 1, 2011, a stationary source that emits more than 100,000 TPY of greenhouse gases (GHGs) is also considered to be a major stationary source. A major modification is any project at a major stationary source that results in a significant increase in emissions of any PSD pollutant. A PSD pollutant is a criteria pollutant for which the area is not nonattainment (for SCAQMD, the PSD pollutants are SO2, PM10, PM2.5, NOx, CO, lead, and GHGs).
State	
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	This act requires the California Air Resource Board (ARB) to enact standards that will reduce GHG emission to 1990 levels by 2020. Electricity production facilities will be regulated by the ARB.A cap-and-trade program is being developed to achieve approximately 20 percent of the GHG reductions expected by 2020.
California Code of Regulations, tit. 17, Subchapter 10, Article 2, sections 95100 et. seq.	These ARB regulations implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)
Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 $MTCO_2$/MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs CO_2/MWh)

a. AB 32

The organizing framework for California's GHG policy is set forth in the California Global Warming Solutions Act of 2006. (Assembly Bill 32, codified in Health & Safety Code, § 38560 et seq. (hereinafter AB 32).) AB 32 requires the California

Air Resources Board ("CARB") to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the level of statewide GHG emissions that existed in 1990. Gubernatorial Executive Order S-3-05 (June 1, 2005) requires a further reduction, to a level 80 percent below the 1990 GHG emissions, by the year 2050. (Ex. 200, p. 4.1-91.)

The Energy Commission recognizes that meeting the AB 32 goals is vital to the state's economic and environmental health. CARB staff is developing regulatory language to implement its plan and holds ongoing public workshops on key elements of the recommended GHG reduction measures, including market mechanisms. The Scoping Plan approved by ARB in December 2008 and re-approved on August 24, 2011 builds upon the overall climate policies of the Climate Action Team report and shows the recommended strategies to achieve the goals for 2020 and beyond. The Scoping Plan also includes a strategy to greatly expand use of combined heat and power (CHP or cogeneration) facilities by adding new CHP capacity by 2020. Some strategies focus on reducing consumption of petroleum across all areas of the California economy. Improvements in transportation energy efficiency (fuel economy) and land use planning and alternatives to petroleum-based fuels are slated to provide substantial reductions by 2020. The Scoping Plan includes a 33 percent Renewables Portfolio Standard (RPS), aggressive energy efficiency targets, and a cap-and-trade system that includes the electricity sector. Even more dramatic reductions in electricity sector emissions would likely be required to meet California's 2050 greenhouse gas reduction goal. Facilities under our jurisdiction, such as the Watson Project, must be consistent with these policies. (Ex. 200, p. 4.1-91.)

In addition to AB 32, there are several other important components of the state GHG policy and regulatory structure.

b. Renewable Portfolio Standard

California statutory law requires the state's utilities to provide at least 20 percent of their electricity supplies from renewable sources by the year 2020. (Pub. Util. Code, § 399.11 et seq.) Recent Gubernatorial Executive Orders increase the requirement to 33 percent and require CARB to adopt regulations to achieve the goal. (Governor's Exec. Orders Nos. S-21-09 (Sept. 15, 2009), S-14-08 (Nov. 17, 2008).) (Ex. 200, pp. 4.1-91 - 92.)

c. Emissions Performance Standard

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into long-term commitments with any facilities having a capacity factor greater than or equal to a 60 percent that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of CO_2 per megawatt-hour. This is the equivalent of 1,100 pounds CO_2/MWh. (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) (Ex. 200. p. 4.1-92.)

d. Loading Order

In 2003, the Energy Commission and the CPUC agreed on a "loading order" for meeting electricity needs. The first resources that should be added are energy efficiency and demand response (at the maximum level that is feasible and cost-effective) followed by renewables, distributed generation and combined heat and power (also known as cogeneration) and finally efficient fossil sources and infrastructure development.[2] CARB's AB 32 Scoping Plan reflects these policy preferences. (California Air Resources Board, Climate Change Scoping Plan, December 2008.)

e. CEQA Guidelines on GHG Emissions

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

The Guidelines set forth three factors for a lead agency to consider, among others, in assessing the significance of impact from GHG emissions and the environment: "(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) Whether the project emissions exceed a threshold of significance that the

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

lead agency applies to the project; [and] (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide regional or local plan for the reduction or mitigation of greenhouse gas emissions." (*Id.)* While the Guidelines do not specify any threshold of significance for GHGs, they continue to encourage agencies to adopt quantitative thresholds of significance for pollutants through a formal rulemaking process, and the amendments to expressly allow agencies to "consider thresholds previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such a threshold is supported by substantial evidence." (14 Cal. Code Regs., § 15064.7.)

f. Cap-and-Trade Program

Watson will be required to participate in California's greenhouse gas cap-and-trade program. The program is expected to begin in January 2012. This cap-and-trade program is part of a broad effort by the State of California to reduce GHG emissions as required by AB 32. Market participants such as Watson are already required to report their GHG emissions. Once enabling regulations are implemented, they will be required to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing GHG allowances from the capped market and offsets from outside the AB32 program. As new participants enter the market, and the market cap is ratcheted down over time, GHG emission allowance and offset prices will increase, encouraging innovation by market participants to reduce their GHG emissions. Thus, Watson as a GHG cap-and-trade participant will be consistent with California's landmark AB 32 Program, which is intended to reduce California's GHG emissions to 1990 levels by 2020. (Ex. 200, p. 4.1-95.)

g. Energy Commission Precedent

Implementation of the State and Energy Commission policies discussed above should result in increasing availability and flexibility of renewable generation. Gas-fired power plants such as Watson currently play a role in advancing the State's climate and energy goals by displacing less-efficient generation resources and facilitating the integration of renewables into the system. However, as the Energy Commission observed in its December 2009 Decision on the Avenal Energy Project (08-AFC-01), the ability of gas-fired generation to contribute to the State's climate and energy goals is limited. The availability of renewable generation will increase as new projects are licensed and built and the technology develops. Efficiency and conservation measures have already had a

substantial impact on California's energy consumption, and new measures continue to be implemented. We therefore expect that the proportion of gas generation in the state's generation mix will gradually diminish. Accordingly, we must evaluate the consistency of each proposed gas-fired power plant with these policies in order to ensure that we license only those plants which will help to reduce GHG.

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

1. Not increase the overall system heat rate for natural gas plants;

2. not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and

3. reduce system-wide GHG emissions and support the goals and policies of AB 32.[3]

While Avenal was decided before the Natural Resources Agency amended its Guidelines to specifically address GHG Emissions, we find the above factors to be consistent with the CEQA Guidelines, particularly the guidance set forth in Title 20 California Code of Regulations, section 15064.4(b)(1) & (3).

Commission staff suggests in the Final Staff Assessment that the Avenal Decision may not be applicable to the Watson Project because it is a combined heat and power (CHP) project intended primarily to serve a refinery, and not a conventional natural gas power plant like Avenal. However, the evidence shows that although the Watson Project's output is primarily intended to facilitate reliable operation of the refinery, it is located in a heavy load pocket and the power it produces will reduce the refinery's demands on the grid. These attributes are consistent with the three Avenal factors. (Ex. 200, p. 4.1-94.)

We now turn to a discussion of whether, and how well, the project would comply with the above-stated policies.

[3] *Final Commission Decision on the Avenal Energy Application for Certification,* p. 101; [http://www.energy.ca.gov/sitingcases/avenal/documents/index.html]).

3. Construction Emissions Impacts

Power plant construction involves vehicles and other equipment that produce GHG emissions. The Watson Project's construction emissions are projected at 3,466 metric tons of CO_2-equivalent GHG during the 20-month construction period. (Ex. 200, p. 4.1-95.)

As noted above, the CEQA Guidelines do not specify any threshold of significance for the emission of GHGs during project construction. In Avenal, we observed that draft guidance from CARB staff recommends a "best practices" performance standard for construction emissions of industrial projects, because construction emissions tend to be much smaller than operational emissions. (*See* CARB, Preliminary Draft Staff Proposal, *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* (Oct. 24, 2008), p. 9); view online at: **[http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf]**.

In 2010, the Bay Area Air Quality Management District (BAAQMD) adopted Air Quality Guidelines which treat GHG emissions from construction in a manner similar to the CARB's Preliminary Draft Staff Proposal. The Guidelines do not specify a threshold of significance for construction-related GHG emissions, but encourage lead agencies "to incorporate best management practices to reduce GHG emissions during construction, as applicable. Best management practices may include, but are not limited to: using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet; using local building materials of at least 10 percent; and recycling or reusing at least 50 percent of construction waste or demolition materials." (*See* BAAQMD, California Environmental Quality Act Air Quality Guidelines, p. 81 approved June 2, 2010); view online at: [**http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx]**.

The South Coast Air Quality Management District (SCAQMD) approved a different approach to significance of GHG impacts at its December 5, 2008 Board Meeting. Rather than set a threshold for operational emissions, construction emissions are amortized over the life of a project and considered in combination with operational emissions. (*See* Proposal to Adopt Interim CEQA GHG Significance Threshold for Stationary Sources; view online at:

[http://www.aqmd.gov/hb/2008/December/081231a.htm]).[4] Applying the SCAQMD approach to the Watson Project, GHG emissions from construction, amortized annually over the 40-year life of the project, would be 87 $MTCO_2e$ tons per year, a tiny fraction of a percent of estimated annual GHG emissions from operation.

Nevertheless, we support the application of a performance standard as recommended by CARB, adopted by BAAQMD, and applied in Avenal, which will minimize GHG construction emissions. We find this approach to be consistent with the CEQA Guidelines which permit reliance on performance-based standards. (14 Cal. Code Regs. §15064.4(a)(2).)

We understand that "best practices" include the implementation of all feasible methods to control construction-related GHG emissions. In order to limit vehicle emissions of both criteria pollutants and GHG during construction, Condition of Certification **AQ-SC5** requires the project owner to use: (1) operational measures, such as limiting vehicle idling time and shutting down equipment when not in use; (2) regular preventive maintenance to manufacturer specifications; (3) low-emitting diesel engines meeting federal emissions standards for construction equipment, whenever available; and (4) equipment that meets the latest criteria emissions standards. These are the current "best practices" for limiting emissions from construction equipment and no party suggested otherwise.

We find that the measures described above to directly and indirectly limit the emission of GHGs during the construction of the Watson Project are in accordance with current best practices. We also note that the GHG emissions anticipated from construction are minimal compared with anticipated operational emissions. GHG emissions will be intermittent and mitigated during that time due to the implementation of the best practices. We therefore find that the GHG emissions from short-term construction activities will not result in a significant adverse impact.

[4] SCQAMD has adopted a somewhat complicated tiered approach to determining the threshold of significance for GHG emission from operations (including amortized construction emissions). Essentially, annual emissions greater than 10,000 $MTCO_2e$ per year are deemed potentially significant, though projects found to be consistent with a GHG emissions reduction plan are exempt from a numerical threshold.

4. Operations GHG Emissions Impacts

a. Watson Project Emissions

The Watson Project will add a nominal capacity of 85 MW by installing a GE 7EA Dry Low NO_x (DLN) combustion turbine with inlet fogging (74 MW summer, 94 MW winter) adjacent to the existing turbines. The project would operate as a base load cogeneration unit and is proposed to be permitted for 8,760 hours of operation per year, with an expected facility capacity factor of greater than 95 percent.

Greenhouse Gas Table 2 shows what the proposed project, as permitted, could potentially emit in greenhouse gases on an annual basis. Electricity generation and fossil-fueled industrial processes GHG emissions are generally dominated by CO_2 emissions from the carbon-based fuels; other sources of GHG are typically small and some (SF_6 and fluorocarbons) also are more likely to be easily controlled or reused/recycled.

The table shows the calculated CO_2 emissions for 4 of the 12 cases in AFC Table 3-2. Case 6 is most representative of the annual maximum of both electricity and steam production, where steam production is equivalent to the maximum water use for steam of 2,100 acre feet per year. Case 1 represents maximum instantaneous electricity output, where Case 4 is a peak steam production case. Case 12 is the high ambient temperature case where CTG output is degraded, such that steam production dominates the metrics of overall thermal efficiency for the entire cogeneration facility, and the “corrected” EPS is the lowest at 0.219 mt/MWhr. The other eight cases all fall within the values calculated for these representative cases.

The proposed project could, on an annual basis, emit approximately 600,000 metric tonnes of CO_2 per year if operated at its maximum permitted level and burning approximately 65 percent natural gas and 35 percent refinery gas. The proposed Watson Project would emit at approximately 0.230 MTCO2/MWh (Case 6), but no more than 0.318 MTCO2/MWh, which would meet the SB 1368 Greenhouse Gas Emission Performance Standard of 0.500 MTCO2/MWh. The new Watson facility would be more GHG-efficient than most existing power plants in the Los Angeles Basin Local Capacity Requirements Area, which has facilities with GHG EPS performance ranging from 0.432 to 0.944 MTCO2/MWh as shown below in **Greenhouse Gas Table 3**.

According to Staff, the cogeneration corrections are imprecise and may not be accurately or consistently included for the cogeneration facilities shown in **Greenhouse Gas Table 3**. A better estimate of GHG impacts from a cogeneration facility like Watson with its use of waste refinery gases, is a direct comparison to the GHG emissions from separate electricity and steam production. The bottom portion of **Greenhouse Gas Table 2** compares total GHG emissions from the Watson Project to "grid" electricity GHG emissions. In the separate electricity production case, we assume 33 percent renewable electricity, with the rest of the separate electricity used coming from modern efficient natural gas-fired combined cycles with a heat rate of 6,940 Btu/kWh HHV (6,310 Btu/kWh LHV). We also include 7.7 percent transmission losses (i.e., you have to generate more to achieve the same on-site delivered electricity that the Watson Project provides). Separate steam production is assumed to be 100 percent natural gas-fired in a 90 percent efficiency boiler. The Watson Project, cogenerating steam and electricity while using waste refinery gas, would produce approximately 18.5 percent less GHGs per year (Case 6) than separate, but still highly efficient production of steam and electricity.

In Case 1 on **Greenhouse Gas Table 2,** the difference in total calculated CO_2 between the Watson Cogeneration Project and the separate production of heat and power is very small. This is due to the fact that steam production is at a minimum and does not include any supplemental duct firing. And, because of low ambient temperatures, CTG fuel input and electricity output are higher, dominating the calculations. However, Case 1 is an outlier and not representative of likely project operations.

The proposed project would increase the available energy and capacity to the electricity system. The Los Angeles Basin Local Capacity Requirements Area would benefit from the incremental increase in energy and capacity provided by the Watson Project. As a project currently located inside a major load pocket, the Watson Project would be likely to provide local reliability support and could facilitate the retirement of other less-efficient power plants. (Ex. 200, pp. 4.1-96 – 4.1-98.)

Greenhouse Gas Table 2
Watson Project, Estimated Potential Greenhouse Gas (GHG) Emissions

Watson Cogeneration			**Case 1**	**Case 4**	**Case 6**	**Case 12**
	Ambient Temperature	Deg F	36	59	59	102
	Fogger Condition:		Off	On	On	On
INPUTS	Natural Gas Total	LHV mmBtu/hr	684.4	627.4	627.4	589.7
	Refinery Gas Total	LHV mmBtu/hr	308.4	298.5	682.1	635.2
	Fuel Totals	LHV mmBtu/hr	992.8	925.9	1309.5	1224.9
OUTPUTS	Steam to Refinery	LHV mmBtu/hr	468.4	465.3	903.2	863.2
	CTG output	LHV mmBtu/hr	321.8	305.4	305.4	284.3
	CTG output	MW net	90.737	85.77	85.263	79.154
METRICS	Efficiency CTG only	%	32.41%	32.98%	32.98%	32.67%
	Heat Rate CTG only (LHV)	Btu/kWh	10,942	10,795	10,859	10,995
	Heat Rate CTG only (HHV)	Btu/kWh	12,036	11,875	11,945	12,095
With Corrections for Cogeneration:						
	Efficiency Cogeneration Facility - correction	%	79.59%	83.24%	92.29%	93.68%
	Heat Rate LHV CTG less Steam - correction	Btu/kWh	5779	5370	4765	4570
	Heat Rate HHV CTG less Steam - correction	Btu/kWh	6,357	5,907	5,242	5,027
GHG OUTPUTS at 8,760 hrs / yr			Natural Gas	Refinery Gas		
	Fuel Emissions Factor (HHV)	lb CO2/mmBtu	116.4	109.45		
		metric tonne/yr	476,793	443,665	603,617	564,881
	Electricity EPS	mt/MWh	0.600	0.590	0.808	0.815
With Corrections for Cogeneration:						
	Electricity EPS less Steam prod. w/spec. EF - corr.	mt/MWh-eq	0.318	0.294	0.230	0.219
SEPARATE PRODUCTION OF ELECTRICITY / STEAM						
Electricity CO2	Baseload NG CC 6,940 HHV Heat Rate	MWh	794,856	751,345	746,904	693,389
		mt/yr	217,564	205,655	204,439	189,791
Steam CO2	90% Efficient Boiler	mt/yr	264,783	263,030	510,572	487,960
CO2	Total- separate	mt/yr	482,347	468,685	715,011	677,751
	Difference	mt/yr	5,554	25,020	111,394	112,871
	% difference		1.2%	5.6%	18.5%	20.0%

(Ex. 200, p. 4.1-97.)

Greenhouse Gas Table 3
Los Angeles Basin Local Capacity Requirements Area, Local Generation Heat Rates and 2010 Energy Outputs

Plant Name	Heat Rate (Btu/kWh)[a]	2010 Energy Output (GWh)	GHG Performance (MTCO2/MWh)
Power Plants [d]:	**11,416**	**2,150**	**0.631**
Alamitos (AES)	10,964	879	0.614
El Segundo Power (NRG)	13,052	167	0.705
Huntington Beach (AES)	11,264	932	0.614
Long Beach Generating Station (NRG)	15,917	36	0.938
Redondo Beach (AES)	12,166	135	0.689
CHP facilities [d]:	**9,995**	**4,916**	**0.538**
BP West Coast Product Wilmington Calciner	17,070	217	0.944
Carson Cogeneration Co.	8,777	348	0.433
Civic Center Cogeneration (LA County)	14,494	110	0.832
Corona Cogeneration	9,447	137	0.497
Harbor Cogeneration Company	11,331	21	0.765
San Gabriel (Ripon Cogeneration)	9,511	141	0.506
Oxy-THUMS Long Beach	9,947	356	0.542
Torrance Refinery (ExxonMobil)	14,071	150	0.432
Total Energy Facilities (LACSD)[c]	13,617	135	0.144
UCLA Energy Systems Facility	12,947	286	0.737
Watson Cogen. (Watson West Coast Ref.)	8,862	3,016	0.361
Watson Project	5,027 to 6,357	747[e]	0.219 to 0.318

(Ex. 200, p. 4.1-101)

Notes:
a. Based on the Higher Heating Value or HHV of the fuel.
b. Thermal/electrical partitioning for CHP facilities based upon ARB's Mandatory Reporting procedure.
c. Joint Water Pollution Control Plant; excludes biomass-related emissions based upon ARB's Mandatory Reporting procedure.
d. Central tendency is weighted by annual GWh.
e. Greenhouse Gas Table 3, Case 6.

b. Determining Significance: the Necessity of a System Approach

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

In general, when an agency conducts a CEQA analysis of a project such as a proposed factory, shopping mall, or residential subdivision, it does not need to

analyze how the operation of the proposed project will affect the larger system or group of factories, malls, or houses in a large multistate region. Rather, such projects are generally analyzed and evaluated on a stand-alone basis. The analysis and evaluation for power plants is, by necessity, different.

California's electricity system – which is actually part of a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex. Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity must be consumed instantaneously in the absence of viable large-scale electricity storage technologies, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators. (*Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications,* CEC-700-2009-004; hereinafter: "Committee CEQA Guidance".)[5]

The California Independent System Operator (California ISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus the California ISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive [i.e., typically the least efficient]). (Committee CEQA Guidance, p. 20.) Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), *when one power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated* (emphasis added). (Committee CEQA Guidance, *2007 IEPR*.)

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

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

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

c. The Watson Project's Effects on the Electricity System

(i) Providing Capacity and Ancillary Services

Power plants serve a variety of functions. Most obviously, they provide energy to keep lights shining and machinery working (typically referred to as "load"). But in order to keep the system functioning properly, they must also meet local needs for capacity and for the "ancillary services" of regulation, spinning reserve, non-spinning reserve, voltage support, and black start capability. (Ex. 200, p.4.1- 92.)

As more renewable generation is introduced into the system, gas-fired power plants such as the Watson Project will be necessary to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support, as well as meet local capacity requirements. At this time, gas-fired plants are better able to provide such services than are most renewables because they can be called upon when they are needed (dispatchable). (Ex. 200, p. 4.1-93.)

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

The trend from 2001 to the present is for electrical energy produced from large, new combined cycle projects (those with a capacity greater than 100 MW and built since 2000) to replace electrical energy produced from aging power plants (those built before 1980). The electrical energy production from aging power plants has declined from 73,131 GWh in 2001 to 6,219 GWh in 2010. At the same time, electrical energy production from new combined cycle plants has increased from 2,730 GWh in 2001 to 71,373 GWh in 2010, essentially replacing the electrical energy produced from the aging power plants. More importantly, at the same time, California's natural gas use efficiency ($MWh_{OUT}/Fuel_{IN}$) in the electricity sector has increased approximately 17 percent over this time. (Ex. 200, p. 4.1-100.)

The proposed Watson Project would have a net heat rate of 5,027 to 6,357 Btu/kWh[6] under normal operating conditions. The heat rate, energy output and GHG emissions of local generation resources near the Watson Project are listed

[6] Based on the High Heating Value (HHV) of the fuel(s) used. HHV is used for all heat rate and fuel conversions to GHG mass emissions that are discussed in this document.

in **Greenhouse Gas Table 3**, above. Compared to most other new and existing units in the Los Angeles Basin Local Capacity Requirements Area, the Watson Project would be more efficient, and emit fewer GHG emissions per MWh of generation. Local generating units with the lowest heat rate or lowest GHG performance factor generally operate more than other units with higher heat rates, as shown by the relative amount of energy (GWh) produced in 2010 from the local units. However, dispatch order can change, or deviate from economic or efficiency dispatch, in any one year or due to other concerns such as permit limits, contractual obligations, local reliability needs or emergencies. (*Id*.)

(iii) Fostering Renewables Integration

Most new renewable generation in California will be wind and solar generated power. But the wind and the sun are not continuous, on-demand resources. As a result, in order to rely on such intermittent sources of renewable-generated power, utilities must have available other, nonrenewable generating resources or significant storage that can fill the gap when renewable generation decreases. Indeed, because of this need for backup generation, or if and when utility-scale storage becomes feasible and cost-effective, nonrenewable generation must increase in order for the state to meet California's RPS and GHG goals. (Ex. 200, p. 4.1-100.)

The Watson Project is not expected to provide flexible, dispatchable or fast ramping[7] power. The Watson Project will be a base-loaded cogeneration facility that operates up to 24 hours per day, 7 days per week in response to steam demands at the refinery. The GE 7EA CTG ramp rate for the proposed cogeneration configuration will be less than 10 MW per minute.[8] However, the Watson Project is not expected to be used in this manner due to the continuous steam needs of the refinery at which it would be located. (Ex. 200, p. 4.1-100.)

As California moves towards an increased reliance on renewable energy, the bulk of renewable energy generation available to and used in California in the near to intermediate future will be intermittent wind generation with widespread

[7] The California ISO categorizes *fast-ramping* as a generator capable of going from lowest power to highest in under 20 minutes, or greater than 10 MW per minute.

[8] Of the 2,821 MW of thermal resources providing Ancillary Services to the California ISO, most (2,441 MW) have ramp rates between 10 and 31 MW/min. The bulk of the resources providing Ancillary Services with ramp rates greater than 10 MW/min (7,141 MW) are hydroelectric facilities (California ISO 2007).

deployment of both utility-scale and small scale distributed solar. To accommodate the increased variability in generation due to increasing renewable penetration, compounded by increasing load variability, control authorities such as the California ISO need increased flexibility from other generation resources such as hydro generation, dispatchable pump loads, energy storage systems, and fast ramping and fast starting fossil fuel generation resources. (Ex. 200, p. 4.1-101.)

These assumptions are conservative in that the forecasted growth in retail sales assumes that the impacts of planned increases in expenditures on (uncommitted) energy efficiency are already embodied in the current retail sales forecast.[9] Staff estimates that as much as 18,000 GWh of additional savings due to uncommitted energy efficiency programs may be forthcoming.[10] This would reduce non-renewable energy needs by a further 12,000 GWh given a 33 percent RPS.

(iiii) Retirement of Generation Using Once-Through Cooling

New resources in the Los Angeles Basin Local Capacity Area like the Watson Project would also be required to provide generation capacity in the likely event that facilities utilizing once-through cooling (OTC) are retired. The State Water Resources Control Board (SWRCB) has proposed significant changes to OTC units, which will require the retirement of the OTC generation in the Los Angeles Basin LCA and a replacement of a share of the retired capacity in order to ensure local reliability.[11] Any additional costs associated with complying with the SWRCB regulation would be amortized over a limited revenue stream today and into the foreseeable future. Their energy and much of their dispatchable, load-following capability will have to be replaced, although the energy produced by these facilities is decreasing as they continue to age. These merchant-owned units constitute over 15,000 MW of capacity. See **Greenhouse Gas Table 4.**

[9] Energy efficiency savings are already represented in the current Energy Commission demand forecast adopted December 2009.

[10] See *Incremental Impacts of Energy Efficiency Policy Initiatives Relative to the 2009 Integrated Energy Policy Report Adopted Demand Forecast* (CEC-200-2010-001-D, January, 2010), page 2. Table 1 indicates that additional conservation for the three investor-owned utilities may be as high as 14,374 GWh. Increasing this value by 25 percent to account for the state's publicly-owned utilities yields a total reduction of 17,967 GWh.

[11] The OTC policy compliance plans filed by the owners of OTC capacity in the LA Basin LCA indicate that replacement capacity, rather than modifications to existing facilities, will be the method of compliance.

Greenhouse Gas Table 4
Aging and Once-Through Cooling Units: 2010 Capacity and Energy Output

Plant, Unit Name	Owner	Local Reliability Area	Aging Plant?	Capacity (MW)	2010 Energy Output (GWh)	GHG Performance (MTCO2/MWh)
Diablo Canyon 1, 2	Utility	None	No	2,232	18,431	Nuclear
San Onofre 2, 3	Utility	L.A. Basin	No	2,246	13,784	Nuclear
Broadway 3 [a]	Utility	L.A. Basin	Yes	75	38	0.680
El Centro 3, 4 [a]	Utility	None	Yes	132	61	0.344
Grayson 3-5 [a]	Utility	LADWP	Yes	108	162	0.320
Grayson 8ABC[a]	Utility	LADWP	Yes	130	3	0.888
Harbor 1,2 & 5	Utility	LADWP	No	227	172	0.508
Haynes 1, 2, 5 & 6	Utility	LADWP	Yes	1,046	957	0.567
Haynes 8 to 10	Utility	LADWP	No	560	3,436	0.375
Olive 1, 2 [a]	Utility	LADWP	Yes	110	14	0.793
Scattergood 1 to 3	Utility	LADWP	Yes	803	1,015	0.541
Utility-Owned				7,776	38,073	0.460 [c]
Alamitos 1 to 6	Merchant	L.A. Basin	Yes	1,970	879	0.785
Contra Costa 6, 7	Merchant	S.F. Bay	Yes	680	38	0.663
Coolwater 1-4 [a]	Merchant	None	Yes	727	15	0.573
El Segundo 3 & 4	Merchant	L.A. Basin	Yes	670	167	0.619
Encina 1 to 5	Merchant	San Diego	Yes	951	317	0.720
Etiwanda 3 & 4 [a]	Merchant	L.A. Basin	Yes	666	221	0.624
Huntington Beach 1& 2	Merchant	L.A. Basin	Yes	430	491	0.590
Huntington Beach 3 &4	Merchant	L.A. Basin	No	450	440	0.561
Mandalay 1 & 2	Merchant	Ventura	Yes	436	82	0.531
Morro Bay 3 & 4	Merchant	None	Yes	600	93	0.521
Moss Landing 6 & 7	Merchant	None	Yes	1,404	273	0.634
Moss Landing 1 &2	Merchant	None	No	1,080	3,234	0.377
Ormond Beach 1 & 2	Merchant	Ventura	Yes	1,612	117	0.564
Pittsburg 5 to 7	Merchant	S.F.Bay	Yes	1,332	58	0.663
Potrero 3[c]	Merchant	S.F.Bay	Yes	207	429	0.585
Redondo Beach 5 to 8	Merchant	L.A. Basin	Yes	1,343	135	0.621
South Bay 1 to 4[c]	Merchant	San Diego	Yes	696	72	0.611
Merchant-Owned				15,254	7,062	0.560 [d]
Total In-State OTC				23,030	45,135	

Notes:
a. Units are considered “aging” but are not once-through cooled.
b. Unit 7 is considered “aging” but is not once-through cooled.
c. Retired.
d. GHG performance central tendency is weighted by GWh.

(Ex. 200, p. 4.1-105.)

Of this, much but not all of the capacity and energy are in local reliability areas, requiring a share them to be replaced – absent transmission upgrades – by plants located in the same local reliability area. (Ex. 200, p. 4.1-105.)

New generation resources that can either provide local support or energy will emit significantly less GHGs than existing OTC natural gas generation. Existing aging and OTC natural gas generation averages 0.6 to 0.7 MTCO2/MWh, which is less efficient and higher GHG emitting, than a new, natural gas/refinery gas-fired turbine project like the Watson Project. A project located in a coastal load pocket, like the Los Angeles Local Reliability Area, would more likely provide local reliability support as well as facilitate the retirement of aging and/or OTC power plants. The Watson Project would contribute to meeting the goal of replacing facilities that use once through cooling.

We therefore find that GHG emissions from operation activities will not have a significant environmental impact.

5. The Role of New Natural Gas Power Plants

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

In this case, the evidence establishes that the Watson Project will not increase the system heat rate as it has a lower heat rate than many of the generators in the region it would serve. It will support, rather than interfere with, existing and new renewable generation. Finally, it will reduce system-wide GHG emissions and otherwise support the goals of AB 32. We find the proposed project is consistent with state energy policy, and will help the state achieve its renewable energy goals.

6. Cumulative Impacts

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

Air quality impacts are, by their very nature, cumulative. The evidence shows that the project alone would not be sufficient to have a significant impact on global climate. However, it would emit greenhouse gases and therefore has been analyzed for its potential contribution to a cumulative impact in the context of existing GHG regulatory requirements and GHG energy policies. We find that the Watson Project’s contribution would not be cumulatively considerable or significant.

FINDINGS OF FACT

1. The GHG emissions from Watson Project construction are likely to be 3466 $MTCO_2$ equivalent (“$MTCO_2E$”) during the 20-month construction period.

2. There is no numerical threshold of significance under CEQA for construction-related GHG emissions.

3. The three-part test used in Avenal (08-AFC-01) is consistent with the CEQA Guidelines, particularly the guidance set forth in Title 20 California Code of Regulations, section 15064.4(b)(1) & (3).

4. Construction-related GHG emissions will be less than significant if they are controlled with best practices.

5. The project will use best practices to control its construction-related GHG emissions.

6. State government has a responsibility to ensure a reliable electricity supply, consistent with environmental, economic, and health and safety goals.

7. California utilities are obligated to meet whatever demand exists from any and all customers.

8. The maximum annual CO_2 emissions from the Watson Project's operation burning 65 percent natural gas and 35 percent refinery gas will be 600,000 $MTCO_2E$, which constitutes an emissions performance factor range of 0.23 to 0.318 $MTCO_2E$ / MWh.

9. Under SB 1368 and implementing regulations, California's electric utilities may not enter into long-term commitments with base load power plants with CO_2 emissions that exceed the Emissions Performance Standard ("EPS") of 0.500 $MTCO_2$/MWh.

10. The California Renewable Portfolio Standard (RPS) requires the state's electric utilities obtain at least 33 percent of the power supplies from renewable sources, by the year 2020.

11. California's power supply loading order requires California utilities to obtain their power first from the implementation of all feasible and cost-effective energy efficiency and demand response, then from renewables and distribution generation, and finally from efficient fossil-fired generation and infrastructure improvement.

12. Even as more renewable generation is added to the California electricity system, gas-fired power plants will be necessary to meet local capacity requirements and to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support.

13. There is no evidence in the record indicating that construction or operation of the Watson Project will be inconsistent with the loading order.

14. The Watson Project will have a heat rate of 5,027 to 6,357 Btu/kWhr.

15. The Watson Project will displace generation from less-efficient (i.e., higher-heat-rate and therefore higher-GHG-emitting) power plants in the region.

16. The Watson Project's operation will reduce overall GHG emissions from the electricity system.

17. Intermittent solar and wind generation will account for most of the installation of renewables in the next few decades.

18. The Watson Project's operation will foster the addition of renewable generation into the electricity system by reducing grid demand from the refinery, which will further reduce system GHG emissions.

19. The addition of some amount of efficient, dispatchable, natural-gas-fired generation will be necessary to integrate renewables into California's electricity system and meet the state's RPS and GHG goals, but the amount is not without limit.

CONCLUSIONS OF LAW

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

2 The Watson Project's operational GHG emissions will not cause a significant environmental impact.

3. The Watson Project's operation will help California utilities meet their RPS obligations.

4. The Watson Project operation will be consistent with California's loading order.

5. The Watson Project operation will foster the achievement of the GHG goals of AB 32 and Executive Order S-3-05.

6. The GHG emissions of any power plant must be assessed within the system on a case-by-case basis.

7. The Watson Project will not increase the overall system heat rate for natural gas plants.

8. The Watson Project will not interfere with generation from existing renewables or with the integration of new renewable generation.

9. The Watson Project will reduce system-wide GHG emissions.

10. Any new natural-gas-fired power plant that we certify must:
    a) not increase the overall system heat rate for natural gas plants;
    b) not interfere with generation from existing renewables or with the integration of new renewable generation; and
    c) have the ability to reduce system-wide GHG emissions.

We find that the Watson Project is consistent with these requirements.

CONDITIONS OF CERTIFICATION

No Conditions of Certification related to greenhouse gas emissions are included. The project owner would comply with mandatory ARB GHG emissions reporting regulations (Cal. Code Regs., tit. 17, Subchapter 10, Article 2, § 95100 et. seq.) and/or future GHG regulations formulated by the U. S. EPA or the ARB, such as GHG emissions cap and trade markets.

B. AIR QUALITY

This section examines the potential adverse impacts of criteria air pollutant emissions resulting from project construction and operation. In consultation with the local air pollution control district, the Commission determines whether the project will likely conform with applicable laws, ordinances, regulations and standards (LORS), whether it will likely result in significant air quality impacts, including violations of ambient air quality standards, and whether the project's proposed mitigation measures will likely reduce potential impacts to insignificant levels. (Ex. 200, pp. 4.1-1, 4.1-2.)

The United States Environmental Protection Agency (U.S. EPA) and the California Air Resource Board (CARB) have both established allowable maximum ambient concentrations of air pollutants based on public health impacts, called ambient air quality standards (AAQS). The state AAQS, established by CARB, are typically lower (more stringent) than the federal AAQS, established by the U.S. EPA. The state and federal air quality standards are listed in **Air Quality Table 1**, below. (Ex. 200, p. 4.1-9.)

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Air Quality Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	--
	8 Hour	0.07 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	150 µg/m^3
	Annual*	20 µg/m^3	--
Fine Particulate Matter (PM2.5)	24 Hour	--	35 µg/m^3
	Annual*	12 µg/m^3	15 µg/m^3
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm**
	Annual*	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)***
	3 Hour	--	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	--
Lead	30 Day Average	1.5 µg/m^3	--
	Calendar Quarter	--	1.5 µg/m^3
	Rolling 3-mo Ave		0.15 µg/m^3
Sulfates	24 Hour	25 µg/m^3	--
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m^3)	--
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m^3)	--
Visibility Reducing Particulates	8 hours	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.	--

* Annual Arithmetic Mean.
**Three-year average of 98th percentile daily maximum 1-hour values, effective April 12, 2010.
*** Effective June 2, 2010, the U.S. EPA established this standard as the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

The federal Clean Air Act[1] requires new major stationary sources of air pollution to comply with federal requirements. The U.S. Environmental Protection Agency (U.S. EPA), which administers the Clean Air Act, has designated all areas of the United States as attainment/unclassifiable (air quality better than the AAQS or unable to determine) or nonattainment (worse than the AAQS) for criteria air pollutants. (Ex. 200, p. 4.1-9.)

There are two major components of federal air pollution law: New Source Review (NSR) for evaluating new sources of pollutants that violate federal standards and Prevention of Significant Deterioration (PSD) to evaluate new sources of pollutants that do not violate federal standards. Prevention of Significant Deterioration (PSD) requires major sources to obtain permits for attainment pollutants. A major source is defined as any one pollutant exceeding 250 tons per year, unless the source is a named PSD category (which the Watson Project is not), in which case the limit is 100 tons per year. Since the emissions from the Watson Project are not expected to exceed 250 tons per year, PSD does not apply. However, greenhouse gases (GHG) also trigger PSD review. We address GHG in a separate section of this Decision. Enforcement of NSR and PSD rules is delegated to local air districts, which are established by federal and state law. The South Coast Air Quality Management District (District or SCAQMD) has jurisdiction in Los Angeles County and its rules apply to Watson. (Ex. 200, p. 4.1-3.)

The project is also subject to the federal New Source Performance Standards (NSPS), which are generally delegated to the local air district; however, local emissions limitation rules are typically more restrictive than NSPS requirements. (*Id*.)

SUMMARY OF THE EVIDENCE

1. Existing Ambient Air Quality

The project is located in the city of Carson and is under the jurisdiction of the SCAQMD. **Air Quality Table 2** lists the attainment and non-attainment status of the district for each criteria pollutant for both the federal and state ambient air quality standards. (Ex. 200, p. 4.1-11.)

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[1] Title 42, United States Code, section 7401 et seq.

Air Quality Table 2
Attainment / Non-Attainment Classification
South Coast Air Quality Management District (SCAQMD)

Pollutants	Federal Classification	State Classification
Ozone	**Non-Attainment**	**Non-Attainment**
PM10	**Non-Attainment**	**Non-Attainment**
PM2.5	**Non-Attainment**	**Non-Attainment**
CO	Attainment	Attainment
NO_2	Attainment [1]	Attainment
SO_2	Attainment	Attainment

1. Attainment status for the new federal 1-hour NO_2 standard is scheduled to be determined by January 2012. The U.S. Environmental Protection Agency's (EPA's) has notified California of its intention to designate all areas of California as unclassifiable/attainment for the revised primary National Ambient Air Quality Standard (NAAQS) for NO_2.

The evidence contains a detailed analysis of Ambient Air Quality Conditions in the site vicinity for both attainment and non-attainment pollutants. (Ex. 200, pp. 4.1-9 – 4.1-17.)

2. SCAQMD Final Determination of Compliance

SCAQMD released its Final Determination of Compliance (FDOC) on March 16, 2011. The FDOC contains the permit conditions specified by SCAQMD to ensure compliance with applicable federal, state, and local air quality requirements.[2] (Ex. 202.) SCAQMD's Permit Conditions are incorporated into this Decision. However, that FDOC was issued based upon the assumption that construction of the project would commence prior to July 1, 2011. Since it did not, the project is now subject to the GHG permitting requirement under the PSD program. As of the date of the evidentiary hearing in this matter, the US EPA had not yet approved into the State Implementation Plan (SIP) SCAQMD's Rule 1714, Prevention of Significant Deterioration for GHG, which was adopted by the District on December 10, 2010, nor issued a delegation agreement to the District, which would authorize the District to issue PSD permits for GHG emission sources. (Ex. 203.) Mohsen Nazemi, Deputy Executive Officer for SCAQMD,

[2] The conditions include emissions limitations, operating limitations, offset requirements, and testing, monitoring, record keeping and reporting requirements that ensure compliance with air quality LORS.

testified at the evidentiary hearing that until Rule 1714 is approved and a delegation agreement issued, PSD permits for GHG sources would be issued by the US EPA. (11/1/11 RT 14:20–15:1.) Applicant testified that it was in the process of applying for a PSD permit but had not yet submitted the application. (11/1/11 RT 63:15–19). Condition of Certification **AQ-SC6** requires the Applicant to submit to the Energy Commission Construction Project Manager (CPM) all required permits including the Authority-to-Construct permit, ensuring compliance with the PSD requirement before construction begins.

3. California Environmental Quality Act (CEQA) Requirements

In addition to reviewing the Air District's requirements, the Energy Commission also evaluates potential air quality impacts according to CEQA requirements. CEQA Guidelines identify several significance criteria to determine whether a project will: (1) conflict with or obstruct implementation of the applicable air quality plan; (2) violate any air quality standard or contribute substantially to an existing or projected air quality violation; (3) result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment for state or federal standards; (4) expose sensitive receptors to substantial pollutant concentrations; and (5) create objectionable odors affecting a substantial number of people. (Cal. Code Regs, tit. 14, § 15000 et seq., Appendix G.) The Guidelines note that where available, the significance criteria established by the applicable Air District may be relied upon to make a significance determination for CEQA review. (Ex. 200, p. 4.1-25.)

4. Existing Setting and Proposed Additions

The Watson Cogeneration Steam and Electric Reliability Project is a proposed expansion of a steam and electrical generating (cogeneration) facility that is located in the city of Carson in Southern California. The Watson Project will complete the original design of Watson Cogeneration Facility that has been in continuous operation for more than 20 years. The Watson Cogeneration Company (Watson) has operated four cogeneration units, since 1988, at a site within the BP Carson Refinery. The existing cogeneration facility consists of four General Electric (GE) 7EA Combustion Turbine Generators (CTG), four Heat Recovery Steam Generators (HRSG) equipped with selective catalytic reduction, and two steam turbine generators (STG). (Ex. 200, p. 4.1-17.)

The proposed Watson Project is for a fifth cogeneration train, or "fifth train," which includes a CTG/HRSG and air pollution control system. The new

cogeneration unit would increase the electric generating capacity of the facility by approximately 85 megawatts (MW), from 385 MW to 470 MW. The cogeneration unit would supply electric power and steam to the refinery and would export excess power generated to the electric utility grid. It would increase the reliability of the Watson facility, reducing the risk of refinery upset due to loss of power. The Watson Project would also ensure that the refinery's steam demand is fully met, even when one or two of the existing CTG/HRSGs are out of service. (Ex. 200, p. 4.1-18.)

The Watson Project would operate as a base loaded cogeneration unit and is proposed to be permitted for 8,760 hours of operation per year, with an expected facility capacity factor of greater than 95 percent. The expansion Watson Project would consist of the following:

- Installation of a nominal 85 MW GE 7EA Dry Low NOx (DLN) combustion turbine with inlet fogging.
- Installation of the HRSG producing up to approximately (~) 659 Klbs steam/hr and equipped with a duct burner with up to 447.9 MMBtu/hr (high heating value [HHV]) heat input at 36ºF.
- Installation of two additional cells to the existing seven cell wet cooling tower to provide cooling and heat rejection from the new power block process.
- Installation of all required auxiliary support systems, none of which are fuel burning equipment.

The Watson Project design would incorporate air pollution emission controls designed to meet SCAQMD Best Available Control Technology (BACT) requirements. These controls would include Dry Low NOx (DLN) combustors in the CTG to limit nitrogen oxide (NOx) production, Selective Catalytic Reduction (SCR) with aqueous ammonia for additional NOx reduction in the HRSG, an oxidation catalyst to control carbon monoxide (CO) and volatile organic compounds (VOC) emissions. Fuels to be used would be pipeline specification natural gas, refinery gas, or a mix of pipeline specification natural gas and refinery gas. Low NOx burners would be incorporated into the HRSG. (Ex. 200, p. 4.1-19.)

The CTG would fire a blend of natural gas and refinery fuel gas, with the refinery fuel gas accounting for up to 35 percent by volume of fuel fired, while the duct burner in the HRSG is expected to fire mostly refinery gas. The refinery gas would be limited to a total sulfur concentration of 40 ppm on a rolling 3-hour

averaging period and 30 ppm based on a rolling 24-hour averaging period. Hydrogen sulfide concentrations would be limited to 162 ppm based on a rolling 3-hour averaging period and 60 ppm based on a rolling 365 successive day average. (*Id.*)

Other emission control technologies were evaluated as part of the BACT determination. Specifically, the EMx (SCONOX) Catalyst was considered as an alternative to SCR. The EMx Catalyst offers some benefits over SCR, such as avoiding the use of ammonia. However, both SCR and EMx would be expected to achieve the proposed BACT NOx emission limit of 2.0 ppmvd @ 15 percent. O2 averaged over one hour and neither would cause significant energy, economic, or environmental impacts. The concern remains regarding the long-term effectiveness of EMx as a control technology as the technology has not been demonstrated on the turbine used in this project over a long period of time. Since the Watson facility already has four identical units operating with SCR and using the more-concentrated anhydrous ammonia, the addition of a fifth unit using SCR with 30 percent aqueous ammonia would not result in the introduction of new hazards associated with SCR and aqueous ammonia and would simplify integration of the fifth unit into the existing operations. (*Id.)*

5. Determination of Direct/Indirect Impacts and Mitigation

While the emissions are the actual mass of pollutants emitted from the project, the impacts from the project result from those emitted pollutants that reach ground level. When emissions are expelled at a high temperature and velocity through the relatively tall stack, the pollutants will be significantly diluted by the time they reach ground level. The emissions from the proposed project are analyzed through the use of air dispersion models to determine the probable impacts at ground level.

The Applicant used the U.S. EPA-approved American Meteorological Society/Environment Protection Agency Regulatory Model Improvement Committee Model (AERMOD), as both a screening and refined model to estimate the direct impacts of the project's NOx, PM10, CO, and SO_2 emissions resulting from project construction and operation. A description of the modeling analysis and its results are provided in the Application for Certification (AFC). AERMOD is a generally accepted model for this type of project, and the meteorological input data is sufficient. (Ex. 200, p. 4.1-26.)

Energy Commission staff added the Applicant's modeled impacts to the available highest ambient background concentrations recorded during the previous three years from nearby monitoring stations. Staff then compared the results with the ambient air quality standards for each respective air contaminant to determine whether the project's emission impacts would cause a new violation of the ambient air quality standards or contribute substantially to an existing violation. (Ex. 4.1-27.)

6. Construction Impacts and Mitigation

During the construction period, air emissions would be generated from the exhaust of off-road and on-road vehicles and fugitive dust from activity on unpaved surfaces and material handling. (Ex. 200, p. 4.1-27.)

The evidence shows that the project's construction emissions will not cause a new violation of the CO and SO_2 ambient air quality standards, and thus we do not find these impacts to be significant. The Applicant modeled a combination of Tier 2 and Tier 3 construction vehicle emissions and the results, as shown in **Air Quality Table 3**, indicate that construction emissions would have the potential to exceed the state 1-hour NO_2 standard if emissions occurred during maximum background conditions. The evidence, however, shows that the emissions would be less than the standard if only Tier 3 vehicles or vehicles with emissions equivalent to Tier 3 were used. Implementation of Condition of Certification **AQ-SC5** would require Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines to reduce potential impacts to less than the state 1-hour NO_2 standard.

Commission staff believes that the particulate emissions from the construction of the project create a potentially significant impact because they will contribute to existing violations of the annual and 24-hour average PM10 and the 24-hour federal PM2.5 AAQS. Those emissions can and should be mitigated to a level of insignificance.

Air Quality Table 3
Maximum Potential Construction Impacts before Mitigation (µg/m^3)

POLLUTANT	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
NO_2	1 hour	90	264	354	339	**105 percent**
	Annual	1.5	54.1	55.6	57	98 percent
CO	1 hour	62	9,600	9662	23,000	42 percent
	8 hour	21	7,315	7336	10,000	73 percent
PM10	24 hour	4.5	131	135.5	50	**271 percent**
	Annual	0.39	45	45.39	20	**227 percent**
PM2.5	24 hour	1.5	48.5	50	35	**143 percent**
	Annual	0.22	17.5	17.72	12	**148 percent**
SO_2	1 hour	0.13	107	107.13	655	16 percent
	3-hour	0.08	107	107.08	1,300	8 percent
	24 hour	0.02	28.6	28.62	105	27 percent
	Annual	0.002	7	7.002	80	9 percent
Includes emissions due to site grading, laydown, building,						

The Applicant proposes the following mitigation measures to be implemented during project construction:

- The Applicant will have an on-site construction mitigation manager who will be responsible for the implementation and compliance of the construction mitigation program. The documentation of the ongoing implementation and compliance with the proposed construction mitigations will be provided on a periodic basis.

- All unpaved roads and disturbed areas in the Watson Project and Construction Laydown and Parking Area will be watered as frequently as necessary to control fugitive dust. The frequency of watering will be on a minimum schedule of every two hours during the daily construction activity period. Watering may be reduced or eliminated during periods of precipitation.

- On-site vehicle speeds will be limited to 5 mph on unpaved areas within the project construction site.

- The construction site entrance will be posted with visible speed limit signs.

- All construction equipment vehicle tires will be inspected and cleaned as necessary to be free of dirt prior to leaving the construction site via paved roadways.

- Gravel ramps will be provided at the tire cleaning area.
- All unpaved exits from the construction site will be graveled or treated to reduce track-out to public roadways.
- All construction vehicles will enter the construction site through the treated entrance roadways, unless an alternative route has been provided.
- Construction areas adjacent to any paved roadway will be provided with sandbags or other similar measures as specified in the construction SWPPP to prevent runoff to roadways.
- All paved roads within the construction site will be cleaned on a periodic basis (or less during periods of precipitation), to prevent the accumulation of dirt and debris.
- The first 500 feet of any public roadway exiting the construction site will be cleaned on a periodic basis (or less during periods of precipitation), using wet sweepers or air-filtered dry vacuum sweepers, when construction activity occurs or on any day when dirt or runoff from the construction site is visible on the public roadways.
- Any soil storage piles and/or disturbed areas that remain inactive for longer than 10 days will be covered, or shall be treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions will be covered, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to minimize fugitive dust emissions. A minimum freeboard height of two feet will be required on all bulk materials transport.
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition will remain in place until the soil is stabilized or permanently covered with vegetation.
- Disturbed areas, which are presently vegetated, will be re-vegetated as soon as practical.

To mitigate exhaust emissions from construction equipment, the Applicant is proposing the following:

- The Applicant will work with the general contractor to utilize to the extent feasible, Environmental Protection Agency (EPA)/Air Resources Board Tier 2/Tier 3 engine compliant equipment for equipment over 100 horsepower.

- Ensure periodic maintenance and inspections per the manufacturers specifications.
- Reduce idling time through equipment and construction scheduling.
- Use California low sulfur diesel fuels (<=15 ppm_w Sulfur).

(Ex. 200, pp. 4.1-28 – 4.1-30.)

In addition, Commission staff proposes that prior to the commencement of construction, the Applicant provide an Air Quality Construction Mitigation Plan (AQCMP) that specifically identifies the mitigation measures that the Applicant will employ to limit air quality impacts during construction. Staff calls for Tier 3 diesel engines for all equipment of 50 horsepower or above, rather than the 100 horsepower cut-off proposed by Watson. Conditions of Certification **AQ-SC1** through **AQ-SC5** will implement the Applicant's proposed mitigation measures and Staff's additional requirements. The evidence indicates that if the proposed project complies with these conditions, the potential for significant air quality impact from the construction of the project is less than significant.

7. Operation Impacts and Mitigation

While the construction and commissioning impacts are both relatively short lived, the operation impacts from the project will continue throughout the life of the facility. The operation impacts are thus subject to a more refined level of analysis. We now discuss the air quality impacts of project operation during normal full load conditions, including startup and shutdown events, the commissioning phase operations, and fumigation meteorological conditions.

The Applicant provided a refined modeling analysis, using the AERMOD model to quantify the potential impacts of the project during both full load operation and startup conditions. The worst case (maximum) results of this modeling analysis are shown in **Air Quality Table 4**.

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Air Quality Table 4
Refined Modeling Maximum Impacts
During Startup and Operation (µg/m^3)

POLLUTANT	AVERAGING TIME	MODELED IMPACT	BACKGROUND	TOTAL IMPACT	LIMITING STANDARD	PERCENT OF STANDARD
NO_2	1 hour	29	264	293	339	87 percent
	1-hour Federal	29	139	168	188	**89 percent**
	Annual	0.1	54.1	54.2	57	95 percent
CO	1 hour	31.1	9,600	9,631	23,000	42 percent
	8 hour	23.4	7,315	7,338	10,000	73 percent
PM10	24 hour	3.9	131	134.9	50	**270 percent**
	Annual	0.2	45	45.2	20	**226 percent**
PM2.5	24 hour	1.3	48.5	49.8	35	**142 percent**
	Annual	0.2	17.5	17.7	12	**148 percent**
SO_2	1 hour	0.9	107	107.9	655	16 percent
	3 hour	0.7	107	107.7	1,300	8 percent
	24 hour	0.2	28.6	28.8	105	27 percent
	Annual	0.1	7	0	80	0 percent

The modeled impact values in **Air Quality Table 4** show that during worst-case startup and full load operations, the facility will potentially contribute to the existing PM10 and PM2.5 violations. Even without the project's contribution, background values significantly exceed the ambient air quality standard. We find that any increases constitute a significant impact if not mitigated.

Although the project's emissions alone do not cause a violation of any NO_2, CO, or SO_2 ambient air quality standards, all NO_2 emissions from the facility will still need to be offset with RECLAIM Trading Credits (RTCs) to maintain district wide progress toward attainment with the ozone ambient air quality standards because NO_2 is a precursor emission to ozone formation. Similarly, the direct SO_2 impacts from the Watson Project, which do not cause a violation of the SO_2 ambient air quality standards, will need to be offset with RTCs to maintain district-wide progress toward attainment with the PM10 ambient air quality standards because SO_2 is a precursor pollutant to secondary PM10/PM2.5 formation. Implementation of Conditions of Certification **AQ-2** and **AQ-15** will ensure compliance. (Ex. 200, p. 4.1-32.)

Surface air is usually stable during the early morning hours before sunrise. During such meteorological conditions, emissions from elevated stacks rise through this stable layer and are dispersed and diluted. When the sun first rises, the air at ground level is heated, resulting in turbulent vertical mixing (both rising and sinking) of air within a few hundred feet of the ground. Emissions from a stack that enter this turbulent layer of air will also be vertically mixed, bringing some of those emissions down to ground level before significant dispersion occurs and possibly causing abnormally high short term impacts. This early morning air pollution event, called fumigation, usually lasts approximately 30 to 60 minutes. The applicant used the U.S. EPA approved SCREEN3 model (version 96043) for the calculation of the project's fumigation impacts, without a shoreline assumption, since the proposed facility is a significant distance from the nearest shoreline. The Applicant's modeling analysis shows that fumigation impacts will not violate any of the one-hour standards. Staff found, and we agree, that the potential ambient air quality fumigation impacts are less than significant. (*Id.*)

The project's gaseous emissions of NO_x, SO_2, VOC and ammonia can contribute to the formation of secondary pollutants: ozone and PM10/PM2.5. The actual ammonia emissions from the Watson Project will typically be approximately 10 to 50 percent of the ammonia limit being imposed (5 ppm at 15 percent. O_2 averaged over one hour). Thus for the vast majority of the project life, the ammonia emissions are expected to be below 2 ppm. An emission of any type of pollutant at this level has a very low potential to cause a significant impact. However, the emissions of NO_x and SO_x from the Watson Project do have the potential, if left unmitigated, to contribute to higher PM2.5 levels in the region. These impacts would be significant because they would contribute to ongoing violations of the state and federal PM2.5 ambient air quality standards.

The Watson Project's air pollutant emissions impacts will be reduced by using emission control equipment and by providing emission offsets. To reduce NO_x emissions, the Applicant proposes to use dry, low-NO_x combustors and an SCR system with an ammonia injection grid.

<u>Cooling Towers</u>

To reduce the PM10 emissions from the cooling towers, the Applicant has committed to using wet, mechanical draft cooling towers with a drift eliminator rated at 0.001 percent and the cooling tower's water total dissolved solids will be limited to 3,575 ppmw. The SCAQMD does not address cooling towers in its

permits to construct or operate. We will require that cooling tower compliance be monitored through Conditions of Certification **AQ-SC9** and **AQ-SC10**, and that mitigation measures be implemented for avoiding chronic exceedances.

Combustion Turbine

To reduce CO emissions, the Applicant proposes to use a combination of good combustion and maintenance practices, along with an oxidizing catalyst. The use of a clean-burning fuel (natural gas) and the efficient combustion process of the CTGs will limit VOC and PM10 emissions. The use of natural gas, low sulfur refinery gas, or a blend of natural gas and refinery gas will limit SO_2 emissions.

Flue Gas Controls

To further reduce the emissions from the combustion turbines before they are exhausted into the atmosphere, flue gas controls, primarily catalyst systems, will be installed for the GE 7EA turbine. The Applicant is proposing two catalyst systems, an SCR system to reduce NO_x, and an oxidizing system to reduce CO and VOC.

Emission Offsets

The Applicant has or will secure sufficient offsets to satisfy SCAQMD Rule 1303 (which requires Emission Reduction Credits (ERCs)) and SCAQMD Regulation XX (which requires participation in the RECLAIM program), as well as to mitigate the project impacts under CEQA.

Implementation of the following additional measures will ensure that the project's air quality impacts are below the level of significance.

NO_x and SO_x mitigation, in the form of Regional Clean Air Initiatives Market (RECLAIM Trading Credits [RTCs]) will be achieved via the RECLAIM program either through existing holdings or through purchase.

VOC mitigation will be achieved by obtaining sufficient purchased Emission Reduction Credits (ERCs) to fully satisfy the Regulation XIII offset requirements.
PM10 emissions from the new cogeneration unit will be addressed through adoption of an emissions limit for all five cogeneration units, which is equal to the current limit for the existing four units, minus 1 lb PM10/day. The existing CEC license limits PM10 emissions from the four existing cogeneration units to 1244 lbs/day; hence the new limit will be 1243 lbs PM10/day for all five cogeneration units. Recent source testing indicates that the actual PM10 emissions from the

four existing cogeneration units are 436 lbs/day (year 2007 test) and 153 lbs/day (year 2008 test). Thus, the potential emissions of 238 lbs PM10/day from the fifth cogeneration unit would not result in exceedance of the 1,243 lbs/day limit. Implementation of SCAQMD Condition **AQ-1** will require the facility to calculate PM10 emissions from all five cogeneration units.

PM2.5 emissions from the existing Watson Cogeneration units were estimated to be 15.1 tons/year, which is well below the threshold of 100 tons/year specified in District Rule 1325. Total PM2.5 emissions for the facility with the proposed project would be 16.5 tons/year. Therefore, PM2.5 offsets would not be required for the proposed project.

CO offsets are not required since the air basin is in attainment. (Ex. 200, pp. 4.1-36 – 4.1-38.)

The evidence convinces us that implementation of the above-described measures will be sufficient to ensure that the emissions from the Watson Project do not create a significant impact to air quality. (Ex. 200, p. 4.1-41.)

8. Cumulative Impacts and Mitigation

"Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, § 15355). Such impacts can be relatively minor and incremental yet still be significant because of the existing environmental background, particularly when considering other closely related past, present, and reasonably foreseeable future projects.

Criteria pollutants have impacts that are usually (though not always) cumulative by their nature. Rarely will a project itself cause a violation of a federal or state criteria pollutant standard. However, new sources contribute to violations of criteria pollutant standards because of elevated background conditions. Air districts attempt to reduce background criteria pollutant levels by adopting attainment plans, which are multi-faceted programmatic approaches to attainment. Attainment plans typically include new source review requirements that provide offsets and use Best Available Control Technology, combined with more stringent emissions controls on existing sources.

The evidence shows that the District has adopted Air Quality Management Plans (AQMPs) intended to address those criteria pollutants that are non-attainment, in

this case ozone and particulates. The SCAQMD has decided that it is most prudent to prepare a single comprehensive and integrated SIP revision that satisfies both the ozone and PM2.5 requirements. On April 28, 2011, the Air Resources Board considered revisions to the South Coast (and San Joaquin Valley) State Implementation Plans (SIPs) for PM2.5 that accounted for reductions of emissions that contribute to PM2.5 levels. The revisions were formally adopted by the ARB's Executive Officer on May 18, 2011, when Executive Order S-11-010 was signed. The April 2011 PM2.5 SIP Revisions accounted for recent regulatory actions and recessionary impacts on emissions that occurred after the South Coast (and San Joaquin Valley) PM2.5 SIPs were adopted. Those revisions accounted for the impact the recession has had on emissions and the benefits of ARB's in-use diesel truck and off-road equipment regulations. The revisions updated the PM2.5 SIP's reasonable further progress calculations, transportation conformity budgets, and ARB's rulemaking calendar. (Ex. 200, p. 4.1-50.)

a. Ozone

The emissions of NO_x and VOC from the Watson Project do have the potential (if left unmitigated) to contribute to higher ozone levels in the region. These impacts could be cumulatively significant because they would contribute to ongoing violations of the state and federal ozone ambient air quality standards. However, emission offsets that would be provided by Watson would reduce potential impacts to a level that would be cumulatively less than significant and would not conflict with regional ozone attainment goals. (Ex. 200, p. 4.1-53.)

b. Particulate Matter

The emissions of NO_x and SO_x from the Watson Project do have the potential, if left unmitigated, to cumulatively contribute to higher PM2.5 levels in the region. These impacts could be considered significant because they would contribute to ongoing violations of the state and federal PM2.5 ambient air quality standards. However, emission offsets that would be provided by Watson would reduce potential impacts to a level that would be cumulatively less than significant. On the basis of this evidence, we conclude that the project would not cause an unmitigated cumulative impact upon regional particulate matter attainment goals. (*Id.*)

9. Compliance with LORS

The federal Prevention of Significant Deterioration (PSD) program requires major sources to obtain permits for emissions of attainment pollutants. A major source for a simple-cycle combustion turbine is defined as one whose emissions of attainment pollutants exceed 250 tons per year. Since the emissions of attainment pollutants from the Watson Project are not expected to exceed 250 tons per year, the PSD program does not apply. Thus, the SCAQMD did not issue a PSD permit as part of their Final Determination of Compliance (FDOC) for the project. (Exs. 200, p. 4.1-53; 203.)

However, new PSD requirements for greenhouse gas emissions became effective January 2, 2011 for facilities which exceed emissions thresholds for traditional PSD emissions categories and July 1, 2011 for facilities with the potential to emit greenhouse gas emissions in excess of 75,000 tons of carbon dioxide-equivalent emissions per year. The Watson Project would exceed the carbon dioxide-equivalent limit, and thus will require a PSD permit. At the evidentiary hearing, Applicant testified that it is in the process of obtaining a PSD permit. Implementation of Condition of Certification **AQ-SC-6** will ensure that this requirement is fulfilled before construction can begin.

The FDOC (Ex. 202) was issued on March 16, 2011, and demonstrates compliance will all applicable state and local LORS. The FSA contains a detailed discussion of the specific LORS. (Ex. 200, pp 4.1-53 – 4.1-62.)

On the basis of the evidence and the above discussion, we find that the project, if constructed and operated in a manner consistent with the conditions of certification set forth in this Decision, would comply with all applicable LORS pertaining to Air Quality.

We have considered the agency and public comments summarized in the FSA in preparing this Decision. (Ex. 200, p. 4.1-40.) **Mia McNulty**, representing the community as well as the Carson-Torrance branch of the NAACP, provided oral comment at the evidentiary hearing to express concerns about high levels of asthma for elderly and small children in the area, who are missing school and requiring emergency medical care. (11/1/11 RT 66:21-67:3.)

We noted above that the evidence shows that the Watson Project will have no impact on the incidence of asthma. These concerns are also addressed in the **Air Quality** and **Public Health** sections of this Decision.

FINDINGS OF FACT

1. Ambient Air Quality Standards (AAQS) have been established for seven air contaminants identified as criteria air pollutants, including sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), particulate matter less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5).

2. Construction and operation of Watson will result in emissions of criteria air pollutants and their precursors.

3. Watson is located in Los Angeles County within the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

4. SCAQMD is a nonattainment area for state and federal ozone, PM10 and PM2.5 standards.

5. Potential impacts from power plant construction-related activities will be mitigated to insignificant levels with implementation of a Construction Mitigation Plan that specifies fugitive dust control, dust plume control, diesel particulate reduction and other measures.

6. Watson has the potential to exacerbate existing violations of the 24-hour and annual PM10 and PM2.5 standards resulting in significant direct impacts to air quality in the project vicinity.

7. Project emissions of NO_x, SO_2, and VOCs, which are precursor pollutants, have the potential to result in significant secondary impacts to ambient concentrations of ozone, PM10, and PM2.5.

8. The project owner will employ the best available control technology (BACT) to limit pollutant emissions.

9. SCAQMD issued a Final Determination of Compliance on March 16, 2011 that finds Watson will comply with all applicable District rules for project operation. Because the project's emissions of attainment pollutants are below 250 tons, no PSD permit was required at that time.

10. Since issuance of the FDOC, federal regulation of GHG emissions has become applicable to Watson. Accordingly, Watson is required to obtain a PSD permit.

11. The project owner will provide sufficient Emission Reduction Credits (ERCs or offsets) to offset pollutants as required by SCAQMD rules and regulations.

12. In addition to compliance with applicable SCAQMD rules, the project is subject to CEQA review, which indicates that the project will not conflict with or obstruct implementation of the applicable air quality plan; will not violate any air quality standard or contribute substantially to an existing or projected air quality violation; will not result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment for state or federal standards; will not expose sensitive receptors to substantial pollutant concentrations; and will not create objectionable odors affecting a substantial number of people.

CONCLUSIONS OF LAW

1. Implementation of the measures described herein will mitigate project construction and operations emissions to below the level of significance.

2. Watson's construction and operations emissions will not contribute to a cumulatively considerable adverse impact on air quality.

3. Implementation of all the conditions of certification, listed below, ensures that, if certified, Watson will be mitigated sufficiently to avoid any direct, indirect, or cumulative significant adverse impacts to air quality.

4. The Commission therefore concludes that implementation of the conditions of certification, below, will ensure that Watson conforms with all applicable laws, ordinances, regulations, and standards relating to air quality as set forth in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

SCAQMD Permit Conditions with Corresponding Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Condition Description
Combustion Turbines		
A63.12, .X1, .X2	AQ-1	Monthly and daily contaminant emission limit (PM10, CO, NO_x, SO_x & VOC)
S2.X1	AQ-2	Annual contaminant emissions limit (NO_x).
A99.X2	AQ-3	Relief from 2.5ppm NO_x limit during commissioning, startup and shut down. Commissioning, startup &

SCAQMD Permit Conditions with Corresponding Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Condition Description
		shutdown time limits. Limit of number of startups per year.
A99.X3	AQ-3	Relief from 2.0 ppm CO limits during commissioning, startup and shut down. Commissioning, startup & shutdown time limits. Limit of number of startups per year.
A99.X4	AQ-3	Relief from 3.0 ppm CO limits during commissioning, startup and shut down. Commissioning, startup & shutdown time limits. Limit of number of startups per year.
A99.X5	AQ-3	NO_x limit for interim time period of end of commissioning to continuous emission monitoring system (CEMS) certification, not to exceed 12 months.
A99.X6	AQ-3	SOx limit for interim time period of end of commissioning to continuous emission monitoring system (CEMS) certification, not to exceed 12 months.
A99.X7	AQ-3	SOx limit for interim time period of end of commissioning to continuous emission monitoring system (CEMS) certification, not to exceed 12 months.
A195.X1	AQ-4	NO_x emission limit of 2.0 ppm @ 15 percent. O2 averaged over 1-hour.
A248.X2	AQ-4	CO emission limit of 2.0 ppm @ 15 percent. O2 averaged over 1-hour.

SCAQMD Permit Conditions with Corresponding Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Condition Description
A248.X3	AQ-4	CO emission limit of 3.0 ppm @ 15 percent. O2 averaged over 1-hour.
A248.X4	AQ-4	VOC emission limit of 2.0 ppm @ 15 percent. O2 averaged over 1-hour.
A327.1	AQ-5	Relief from emission limits, under Rule 475; project may violate either the mass emission limit or concentration emission limit, but not both at the same time.
A433.X1	AQ-3	Emission limit during startup.
B61.X1	AQ-6	H2S concentration limit for refinery gas.
B61.X2	AQ-6	H2S concentration limit for fuel gas.
C1.X1	AQ-6	Limits the turbine firing rate to no more than 1069.9 MM Btu per hour (non-commissioning).
C1.X2	AQ-6	Limits the duct burner firing rate to no more than 510 MM Btu per hour (non-commissioning).
D12.X1	AQ-6	Requires the installation of a fuel flow meter.
D29.X1	AQ-7	Requires source tests for specific pollutants (NO_x, CO, SO_x, VOC, PM10, NH3) within 180 days of initial startup.
D29.X2	AQ-8	Requires source tests for ammonia (NH3); quarterly for the first year and annually thereafter.
D29.X3	AQ-7	Requires source tests for specific pollutants (SO_x and VOC) once every three years.
D29.X4	AQ-7	Requires source tests for specific pollutants (PM10) once every year.

SCAQMD Permit Conditions with Corresponding Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Condition Description
D82.X1	AQ-9	Requires the installation of CEMS for CO emissions.
D82.X2	AQ-9	Requires the installation of CEMS for NO_x emissions.
D90.X1	AQ-9	Requires the installation of CEMS for fuel gas Total Reduced Sulfur compounds.
D90.X1	AQ-9	Requires the installation of CEMS for fuel gas H2S compounds.
H23.X1	NA	Establishes the applicability of 40CFR60 Subpart KKKK for the project contaminant NO_x and SO_x.
H23.X2	NA	Establishes the applicability of 40CFR60 Subpart KKKK for the project contaminant H2S.
I296.X1	AQ-15	Prohibited from operation unless the operator hold sufficient RTCs for the CTGs.
D28.1, D29X4 & K40.X	AQ-7, -8 & -9	Source test reporting requirements.
K67.X1	AQ-10	Requires record keeping of fuel use during commissioning, prior to and after CEMs certification.
I296.X1	AQ-15	Prohibited from operation unless the operator holds sufficient RTCs.
SCR/CO Catalyst		
A99.X1	AQ-11	Relief from 5ppm NH3 limit during commissioning, startup and shut down. Commissioning, startup & shutdown time limits. Limit of number of startups per year.
A195.X1	AQ-11	Establishes the 5 ppm ammonia slip limit.
D12.X4	AQ-12	Requires a flow meter for the ammonia injection.
D12.X2	AQ-13	Requires a temperature meter at the SCR inlet.

SCAQMD Permit Conditions with Corresponding Commission Conditions of Certification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Condition Description
D12.X3	AQ-14	Requires a pressure gauge to measure the differential pressure across the SCR grid.
D12.X5	AQ-14	Requires a pressure gauge to measure the differential pressure across the CO Catalyst grid.
Ammonia Storage Tank		
C157.X	See Hazardous Material section	Requires the installation of a pressure relief valve.
E144.X	See Hazardous Material section	Requires venting of the storage tank during filling only to the vessel from which it is being filled.
K67.2	See Hazardous Material section	Requires record keeping in the manner approved by the District Executive Officer.

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the Energy Commission's Compliance Project Manager (CPM) for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4,** and **AQ-SC5**.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes from leaving the project. The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

A. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved prior to taking initial deliveries.

B. All unpaved construction roads and unpaved operation site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project construction site shall be watered as frequently as necessary during grading (consistent with **Biology** conditions of certification that address the minimization of standing water); and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The

frequency of watering can be reduced or eliminated during periods of precipitation.

C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

D. Visible speed limit signs shall be posted at the construction site entrances.

E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

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

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

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

I. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.

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

K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.

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

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

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

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

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include the following to demonstrate control of fugitive dust emissions:

A. A summary of all actions taken to maintain compliance with this condition;

B. Copies of any complaints filed with the District in relation to project construction; and

C. Any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner indicates that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

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

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

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown

source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include:

A. a summary of all actions taken to maintain compliance with this condition;

B. copies of any complaints filed with the District in relation to project construction; and

C. any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

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

B. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. All efforts to obtain diesel-powered construction equipment shall emphasize this requirement. In the event that a Tier 3 engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NO_x) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
2. The construction equipment is intended to be on site for five days or less.
3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

C. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item “B” occurs within 10 days of termination of the use, or if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists :

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.
3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

D. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (B) above shall be properly maintained and the engines tuned to the engine manufacturer’s specifications.

E. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

F. Construction equipment will employ electric motors when feasible.

Verification: The AQCMM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:

A. A summary of all actions taken to control diesel construction related emissions;

B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

C. Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall provide the CPM copies of all District and/or US EPA-issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) documents for the facility. The ATC documents shall be submitted prior to the commencement of construction. The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. Environmental Protection Agency (U.S. EPA), and any revised permit issued by the District or U.S. EPA, for the project.

Verification: The project owner shall submit any ATC, PTO, and proposed air permit modifications to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-SC7 The project owner shall provide emission reduction credits to offset combined-cycle turbine exhaust NO_x, VOC and SO_x emissions in the form and amount required by the District. RECLAIM Trading Credits (RTCs) shall be provided for NO_x and SO_x as is necessary to demonstrate compliance with Condition of Certification **AQ-15**.

Emission reduction credits (ERCs) shall be provided for VOC (187 lb/day, includes offset ratio of 1.2:1.0). The project owner shall surrender the ERCs for VOC from among those that are listed in the table below or a modified list, as allowed by this condition. If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions of credits listed.

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) will not cause the project to result in a significant environmental impact, and the SCAQMD confirms that each requested

change is consistent with applicable federal and state laws and regulations.

The project owner shall request from the SCAQMD a report of the NSR Ledger Account for the project after the SCAQMD has issued the Permit to Construct. This report is to specifically identify the ERCs used to offset the project emissions.

Certificate Number	Amount (lbs/day)	Pollutant
AQ007588	4	VOC
AQ008748	7	VOC
AQ010814	50	VOC
To be determined (TBD)	126	VOC

Verification: The project owner shall submit to the CPM the NSR Ledger Account, showing that all project offset requirements have been met, 15 days prior to initiating construction for Priority Reserve credits, and 30 days prior to turbine first fire for traditional ERCs. Prior to commencement of construction, the project owner shall obtain sufficient Reclaim Trading Credits (RTCs) to satisfy the District's requirements for the first year of operation as prescribed in Condition of Certification **AQ-15**. If the CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and Energy Commission's docket for Watson. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC8 The project owner shall submit to the CPM Quarterly Operation Reports, following the end of each calendar quarter, that include operational and emissions information as necessary to demonstrate compliance with the conditions of certification herein. The Quarterly Operation Report will specifically note or highlight incidences of noncompliance.

Verification: The project owner shall submit the Quarterly Operation Reports to the CPM and APCO no later than 30 days following the end of each calendar quarter.

AQ-SC9 The project owner shall perform quarterly cooling tower recirculating water quality testing, or shall provide for continuous monitoring of conductivity as an indicator, for total dissolved solids content.

Verification: The project owner shall submit to the CPM cooling tower recirculating water quality tests or a summary of continuous monitoring results and daily recirculating water flow in the Quarterly Operation Report (**AQ-SC8**). If the project owner uses continuous monitoring of conductivity as an indicator for total dissolved solids content, the project owner shall submit data supporting the

calibration of the conductivity meter and the correlation with total dissolved solids content at least once each year in a Quarterly Operation Report (**AQ-SC8**).

AQ-SC10 The new cooling tower cells daily PM10 emissions shall be limited to 7.92 lb/day in total for both cooling tower cells. The cooling towers shall be equipped with a drift eliminator to control the drift fraction to 0.001 percent of the circulating water flow. Total dissolved solids (TDS) shall be limited to 3,575 ppmw. The project owner shall estimate daily PM10 emissions from the cooling towers using the water quality testing data or continuous monitoring data and daily circulating water flow data collected on a quarterly basis. Compliance with the cooling tower PM10 emission limit shall be demonstrated as follows:

PM10 = cooling water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate.

Verification: The project owner shall submit to the CPM daily cooling tower PM10 emission estimates in the Quarterly Operation Report (**AQ-SC8**).

The following conditions of certification incorporate District conditions as required in the Determination of Compliance. Refer to **Air Quality Table 23** above to relate these conditions to the District's conditions.

AQ-1 The project owner shall limit the emissions from the new gas fired combustion turbine train exhaust stack as follows:

Contaminant	Emissions Limit
PM10	1,243 lbs in any one day (total combined emissions from all 5 Watson Cogeneration Units)
VOC	3,095 lbs in any one month

The operator shall initially calculate the daily PM10 emissions using daily fuel use data for each combustion unit, the higher heating value of the fuel burned in each combustion unit, and the following emissions factors: 0.00393 lbs PM10 / MMBTU for Natural Gas and 0.00402 lbs PM10 / MMBTU for Refinery Gas.

The PM10 emission factor for Cogeneration Units 1, 2, 3, 4, and 5 shall be revised annually based on results of individual PM10 source tests performed as specified in permit conditions D28.1 and D29X4 (**AQ-7**). The PM10 emission factor shall be calculated as the average emission rate in lb/MMBtu for all valid source test runs during each individual source test.

For Refinery Gas, the following formula should be used to calculate emissions factors, in units of lbs VOC/MMscf: 2.94E-7 x Fd-Factor x GCV_v; where the Fd-Factor is the ratio of the volume of products of combustion to the fuel heat content, in units of dscf/MMBtu, and GCV_v

is gross fuel calorific value, in units of Btu/scf. Monthly averages of Fd-Factor and GCV_v for Refinery Gas shall be used in this calculation.

For the purpose of this condition, the term "normal operations" is defined as the turbine is able to supply electrical energy to the power grid.

Verification: The project owner shall submit all emission calculations, fuel use, CEM records and a summary demonstrating compliance of all emission limits stated in this condition for approval to the CPM on a quarterly basis in the quarterly emissions report required in (**AQ-SC8**).

AQ-2 The project owner/operator shall not produce emissions of oxides of nitrogen from the facility that exceed the RECLAIM Trading Credits holdings of 39.9 tons/yr required in Condition of Certification **AQ-15** within a calendar year.

Verification: The project owner/operator shall submit to the CPM no later than 60 days following the end of each calendar year, the SCAQMD required (via Rule 2004) Quarterly Certification of Emissions (or equivalent) for each quarter and the Annual Permit Emissions Program report (or equivalent) as prescribed by the SCAQMD Executive Officer.

AQ-3 The commissioning period shall not exceed 550 hours. The time for cold startup shall not exceed 3 hours for each startup. The time for warm startup shall not exceed 1 hour. The time for shutdown shall not exceed 1 hour. The turbine shall be limited to 4 cold startups per year, 24 warm startups per year, and 29 shutdowns per year.

The 5 ppm NH3 limit, 2 ppm NO_x emission limit 2 ppm CO emission limit, and 3 ppm CO emission limit shall not apply during commissioning, start-up, and shutdown periods.

The 44 LBS/MMCF NO_x emission limit, 0.80 LBS/MMCF SOx emission limit and 5.07 LBS/MMCF SO_x emission limit shall only apply during the interim reporting period to report RECLAIM emissions.

The operator shall comply at all times with the 2.0 ppm 1 hour BACT limit for NO_x, except as defined in condition A99.X2, (**AQ-3,** this condition) and for the following operating scenarios:

Operating Scenario	Maximum Hourly Emission Limit	Operational Limit
Cold Start	175.0	NO_x emissions shall not exceed 211.24 lbs per cold start-up.
Warm Start	21.32	NO_x emissions shall not exceed 21.32 lbs per warm start-up.
Shutdown	12.85	NO_x emissions shall not exceed 12.85 lbs per shutdown.

The interim reporting period shall not exceed 12 months from the initial startup date. Written records of commissioning, start-ups and shutdowns shall be kept and made available to SCAQMD and submitted to the CPM for approval.

The project owner/operator shall complete construction and the project shall be fully operational within three years of the issuance of the permit to construct from the SCAQMD.

Verification: The project owner shall provide the SCAQMD and the CPM with the written notification of the initial start-up date no later than 60 days prior to the startup date. The project owner shall submit, commencing one month from the time of gas turbine first fire, a monthly commissioning status report throughout the duration of the commissioning phase that demonstrates compliance with this condition and the emission limits of Condition **AQ-13**. The monthly commissioning status report shall include criteria pollutant emission estimates for each commissioning activity and total commissioning emission estimates. The monthly commissioning status report shall be submitted to the CPM until the report includes the completion of the initial commissioning activities. The project owner shall provide start-up and shutdown occurrence and duration data as part as part of the Quarterly Operation Report (**AQ-SC8**) including records of all aborted turbine startups. The project owner shall make the site available for inspection of the commissioning and startup/shutdown records by representatives of the District, CARB and the Commission.

AQ-4 The new combustion turbine stack shall have the following emission limitations.

- 2.0 PPM NO_x emission averaged over 60 minutes at 15 percent. oxygen, dry basis.
- 2.0 ppm CO emission averaged over 60 minutes at 15 percent. oxygen, dry basis.
- 3.0 ppm CO emission averaged over 180 minutes at 15 percent. oxygen, dry basis.
- 2.0 ppm VOC emission averaged over 60 minutes at 15 percent. oxygen, dry basis.
- 5.0 ppm NH_3 emission averaged over 60 minutes at 15 percent. oxygen, dry basis.

Verification: The project owner shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC8**.

AQ-5 The project owner may exceed either the mass or concentration emission limits, but not both limits at the same time, as set forth in Conditions of Certification **AQ-1, -2, -3** or **-4**.

Verification: The project owner shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC8**.

AQ-6 The operator shall not use refinery gas containing the following specified compounds:

Compound	ppm by volume
Total Reduced Sulfur (calculated as H2S) greater than	40
Total Reduced Sulfur (calculated as H2S) greater than	30

The 40 ppm limit shall be based on a rolling 3-hour averaging period. The 30 ppm limit shall be based on a rolling 24-hour averaging period.

Refinery gas is defined as a mixture of refinery fuel gas, produced within the refinery that may be mixed with natural gas obtained from a utility regulated by the Public Utilities Commission (PUC), in order to balance heat content of the fuel gas mixture, (formed at a point upstream of the sampling location for Total Reduced Sulfur concentration) shall not exceed 50 percent of the total, by Higher Heating Value (HHV) content.

The operator shall not use fuel gas containing the following specified compounds:

Compound	ppm by volume
H2S greater than	162
H2S greater than	60

The 162 ppm limit shall be based on a rolling 3-hour averaging period. The 60 ppm limit shall be based on a rolling 365 successive day average.

The operator shall limit the CTG firing rate to no more than 1069.9 MM Btu per hour. The operator shall limit the HRSG duct burner firing rate to no more than 510 MM Btu per hour.

For the purpose of this condition, firing rate shall be defined as energy or heat input of natural gas and refinery gas to the equipment combustion chamber based on the higher heating value (HHV) of the natural gas and refinery gas used.

The refinery gas input to the turbine in any hour shall not exceed 35 percent of the total volume of gas combusted. Refinery gas shall be as defined in condition B61.X1 (Condition **AQ-6**).

The operator shall install and maintain a(n) continuous monitoring system to accurately indicate the energy being supplied to the gas turbine by measurement of Higher Heating Value (HHV) of refinery fuel gas.

The operator shall also install and maintain a device to continuously record the parameter being measured. For the purpose of this condition, continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour. The purpose of this condition is to demonstrate compliance with the limitation of refinery fuel gas, as having natural gas accounting for no more than 50 percent of the Higher Heating Value (HHV) of the mixture.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition. The operator shall install and maintain a fuel flow meter and recorder to accurately indicate and record the fuel usage being supplied to the turbine.

Verification: The project owner shall submit to the CPM for approval all fuel usage records on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC8**.

AQ-7 The project owner shall conduct an initial source test for NO_x, CO, SOx, VOC, NH_3, PM10 and PM2.5 and periodic source test every three years thereafter for NO_x, CO, SO_x, VOC, PM10 and PM2.5 of the new turbine exhaust stack in accordance with the following requirements:

- The project owner shall submit a source test protocol to the SCAQMD and the CPM 45 days prior to the proposed source test date for approval. The protocol shall include the proposed operating conditions of the gas turbine, the identity of the testing lab, a statement from the lab certifying that it meets the criteria of SCAQMD Rule 304, and a description of all sampling and analytical procedures.
- The initial source test shall be conducted no later than 180 days following the date of first fire.
- The SCAQMD and CPM shall be notified at least 10 days prior to the date and time of the source test.
- The source test shall be conducted with the gas turbine operating under maximum, average and minimum loads.

- The source test shall be conducted to determine the oxygen levels in the exhaust.
- The source test shall measure the fuel flow rate, the flue gas flow rate and the turbine generating output in MW.
- The source test shall be conducted for the pollutants listed using the methods, averaging times, and test locations indicated and as approved by the CPM as follows:

Source Test Requirements

Pollutant	Method	Averaging Time	Test Location
NO_x	SCAQMD Method 100.1	1 hour	Outlet of SCR
CO	SCAQMD Method 100.1	1 hour	Outlet of SCR
SO_x	District Method 307.91	N/A	Fuel Sample
VOC	District Method 25.3 or TO-12	1 hour	Outlet of SCR
PM10	District Method 5	4 hours	Outlet of SCR
PM2.5	EPA Methods 201A and 202	4 hours	Outlet of SCR
Ammonia	SCAQMD Methods 5.3 and 207.1 or U.S. EPA Method 17.	1 hour	Outlet of SCR

- The source test results shall be submitted to the SCAQMD and the CPM no later than 60 days after the source test was conducted.
- All emission data is to be expressed in the following units:
  1. ppmv corrected to 15 percent. oxygen dry basis,
  2. pounds per hour,
  3. pounds per million cubic feet of fuel burned and
  4. additionally, for PM10 only, grains per dry standard cubic feet of fuel burned.
- Exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute and actual cubic feet per minute.

- All moisture concentrations shall be expressed in terms of percent corrected to 15 percent oxygen.

- For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of the AQMD, CARB, EPA and the Energy Commission.

Verification: The project owner shall submit the proposed protocol for the initial source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM. The project owner shall notify the SCAQMD and CPM no later than 10 days prior to the proposed initial source test date and time.

AQ-8 The project owner shall conduct source testing of the turbine exhaust stack in accordance with the following requirements:

- The project owner shall submit a source test protocol to the SCAQMD and the CPM for approval no later than 45 days prior to the proposed source test date. The protocol shall include the proposed operating conditions of the gas turbine, the identity of the testing lab, a statement from the lab certifying that it meets the criteria of SCAQMD Rule 304, and a description of all sampling and analytical procedures.

- Source testing for ammonia slip only shall be conducted quarterly for the first 12 months of operation and annually thereafter.

- NO_x concentrations as determined by CEMS shall be simultaneously recorded during the ammonia test. If the NO_x CEMS is inoperable, a test shall be conducted to determine the NO_x emission by using SCAQMD Method 100.1 measured over a 60 minute time period.

- Source testing shall be conducted to determine the ammonia emissions from the new turbine exhaust stack using SCAQMD Method 5.3 and 207.1 or U.S. EPA Method 17 measured over a 1 hour averaging period at the outlet of the SCR.

- The SCAQMD and CPM shall be notified of the date and time of the source testing at least 7 days prior to the test.

- The source test shall be conducted and the results submitted to the SCAQMD and CPM within 45 days after the test date.

- Source testing shall measure the fuel flow rate, the flue gas flow rate and the gas turbine generating output.

- The test shall be conducted when the equipment is operating at 80 percent load or greater.

- If the turbine is not in operation during one quarter, then no testing is required during that quarter.
- All emission data is to be expressed in the following units:

  1. ppmv corrected to 15 percent oxygen,
  2. pounds per hour,
  3. pounds per million cubic feet of fuel burned.

Verification: The project owner shall submit the proposed protocol for the source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall notify the SCAQMD and CPM no later than seven days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM.

AQ-9 The project owner shall install and maintain a CEMS in the exhaust stack of the combustion turbine train to measure the following parameters:

- NO_x concentration in ppmv and CO concentration in ppmv.
- Concentrations shall be corrected to 15 percent oxygen on a dry basis.
- The CEMS will convert the actual CO concentrations to mass emission rates (lb/hr) and record the hourly emission rates on a continuous basis.
- The CEMS shall be installed and operated to measure CO concentration over a one and three hour averaging time periods.
- The CEMS shall be installed and operated in accordance with an approved SCAQMD Rule 218 CEMS plan application and the requirements of Rule 2012.
- The CO CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine.
- The NO_x CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine.

During the interim period between the initial start-up and the provisional certification date of the CEMS, the project owner shall comply with the monitoring requirements of Rule 2012 (h)(2) and Rule 2012 (h)(3). Within two weeks of the turbine start-up date, the project owner shall provide written notification to the SCAQMD of the exact date of start-up.

Verification: Within 30 days of certification, the project owner shall notify the CPM of the completion of the certification process for the CEMS.

AQ-10 The project owner shall keep records in a manner approved by the SCAQMD for the following items:

- Commissioning hours, type of control, and fuel use
- Date and time of each start-up and shutdown
- In addition to the requirements of a certified CEMS, fuel use records shall be kept during and after the commissioning period and prior to CEMS certification
- Minute by minute data (NO_x and O_2 concentration and fuel flow at a minimum) for each turbine start-up.

Verification: The project owner shall submit to the CPM for approval all fuel usage records on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC8**.

AQ-11 The owner/operator shall determine the hourly ammonia slip emissions from the exhaust stack via both the following formulas:

SCAQMD Requirement:

- NH3 (ppmv) = [a-b*(c*1.2)/1E6]*1E6/b

Where:

a = NH3 injection rate (lb/hr) / 17(lb/lbmol),

b = dry exhaust flow rate (scf/hr) / 385.5 (scf/lbmol), and

c = change in measured NOx across the SCR (ppmvd at 15 percent O2)

The above described ammonia slip calculation procedure shall not be used for compliance determination or emission information determination without corroborative data using an approved reference method for the determination of ammonia for the District.

Energy Commission Requirement:

- NH3 (ppmv @ 15 percent. O2) = ((a-b*(c/1E6))*1E6/b)*d

Where:

a = NH3 injection rate (lb/hr)/17(lb/lbmol,

b = dry exhaust gas flow rate (lb/hr)/ (29(lb/lbmol), or

b = dry exhaust flow rate (scf/hr) / 385.5 (scf/lbmol),

c = change in measured NOx concentration ppmv corrected to 15 percent O2 across catalyst, and

d = correction factor.

The correction factor shall be derived through compliance testing by comparing the measured and calculated ammonia slip. The correction factor shall be reviewed and approved by the CPM on at least an annual basis. The correction factor may rely on previous compliance source test results or other comparable analysis as the CPM finds the situation warrants. The above described ammonia slip calculation procedure shall be used for Energy Commission compliance determination for the ammonia slip limit as prescribed in Condition of Certification **AQ-4** and reported to the CPM on a quarterly basis as prescribed in Condition of Certification **AQ-SC8**.

The 5 ppm NH3 limit(s) shall not apply during commissioning, start-up, and shutdown periods. The commissioning period shall not exceed 550 hours. The time for cold startup shall not exceed three hours for each startup. The time for warm startup shall not exceed one hour. The time for shutdown shall not exceed one hour. The turbine shall be limited to four cold startups per year, 12 warm startups per year, and 16 shutdowns per year.

An exceedance of the ammonia slip limit as demonstrated by the above Energy Commission formula shall not in and of itself constitute a violation of the limit. An exceedance of the ammonia slip limit shall not exceed six hours in duration. In the event of an exceedance of the ammonia slip limit exceeding six hours duration, the project owner shall notify the CPM within 72 hours of the occurrence. This notification must include, but is not limited to: the date and time of the exceedance, duration of the exceedance, estimated emissions as a result of the exceedance, the suspected cause of the exceedance and the corrective action taken or planned. Exceedances of the ammonia limit that are less than or equal to six hours in duration shall be noted in a specific section within the Quarterly Report (**AQ-SC8**). This section shall include, but is not limited to: the date and time of the exceedance, duration of the exceedance, and the estimated emissions as a result of the exceedance. Exceedances shall be deemed chronic if they total more than 10 percent of the operation. Chronic exceedances must be investigated and redressed in a timely manner and in conjunction with the CPM through the cooperative development of a compliance plan. The compliance plan shall be developed to bring the project back into compliance first and foremost and shall secondly endeavor to do so in a feasible and timely manner, but shall not be limited in scope.

The owner/operator shall maintain compliance with the ammonia slip limit, redress exceedances of the ammonia slip limit in a timely

manner, and avoid chronic exceedances of the ammonia slip limit. Exceedances shall be deemed a violation of the ammonia slip limit if they are not properly redressed as prescribed herein.

The owner/operator shall install a NO_x analyzer to measure the SCR inlet NO_x ppm accurate to within +/- 5 percent calibrated at least once every 12 months.

Verification: The project owner shall include ammonia slip concentrations averaged on an hourly basis calculated via both protocols provided as part of the Quarterly Operational Report required in Condition of Certification **AQ-SC8**. The project owner shall submit all calibration results performed to the CPM within 60 days of the calibration date. The project owner shall submit to the CPM for approval a proposed correction factor to be used in the Energy Commission formula at least once a year but not to exceed 180 days following the completion of the annual ammonia compliance source test. Exceedances of the ammonia limit shall be reported as prescribed herein. Chronic exceedances of the ammonia slip limit shall be identified by the project owner and confirmed by the CPM within 60 days of the fourth quarter Quarterly Operational Report (**AQ-SC8**) being submitted to the CPM. If a chronic exceedance is identified and confirmed, the project owner shall work in conjunction with the CPM to develop a reasonable compliance plan to investigate and redress the chronic exceedance of the ammonia slip limit within 60 days of the above confirmation.

AQ-12 The operator shall install and maintain an ammonia injection flow meter and recorder to accurately indicate and record the ammonia injection flow rate being supplied the turbine. The device or gauge shall be accurate to within plus or minus five percent and shall be calibrated once every 12 months.

Continuously recording is defined for this condition as at least once every hour and is based on the average of the continuous monitoring for that hour.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-13 The operator shall install and maintain a temperature gauge and recorder to accurately indicate and record the temperature in the exhaust at the inlet of the SCR reactor. The gauge shall be accurate to within plus or minus five percent and shall be calibrated once every 12 months. The catalyst temperature range shall remain between 740 degree F and 840 degree F.

Continuously recording is defined for this condition as at least once every hour and is based on the average of the continuous monitoring for that hour.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-14 The operator shall install and maintain a pressure gauge and recorder to accurately indicate and record the pressure differential across the SCR catalyst bed in inches of water column. The gauge shall be accurate to within plus or minus five percent and shall be calibrated once every 12 months. The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the CO catalyst reactor in inches water column.

Continuously recording is defined for this condition as at least once every month and is based on the average of the continuous monitoring for that month.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-15 The project equipment shall not be operated unless the project owner demonstrates to the SCAQMD Executive Officer that the facility holds sufficient Reclaim Trading Credits (RTCs) to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emission increase. The project owner shall submit all such information to the CPM for approval.

To comply with this condition, the operator shall, prior to the 1st compliance year hold a minimum NO_x RTCs of 99,850 lbs/yr and a minimum SOx RTCs of 31,050 lbs/yr. This condition shall apply during the first 12 months of operation, commencing with the initial operation of the gas turbine/heat recovery steam generator.

C. PUBLIC HEALTH

This topic supplements the section on air quality and considers the potential public health effects from project emissions of toxic air contaminants (TACs). In this analysis, we review the evidence concerning whether such emissions will result in significant public health impacts or violate standards for public health protection.[1]

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of TACs. These substances are categorized as noncriteria pollutants because there are no ambient air quality standards established to regulate their emissions.[2] In the absence of standards, federal and state regulatory agencies have established health risk assessment procedures to evaluate potential health effects due to emissions of hazardous air pollutants. The South Coast Air Quality Management District (SCAQMD) Rules, which incorporate federal and state risk assessment requirements for TAC emissions, apply to the Watson Project.

The health risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the Watson Project could emit into the environment;
- Estimate worst-case concentrations of project emissions into the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact;[3] and

[1] This Decision discusses other potential public health concerns under the following topics. The accidental release of hazardous materials is discussed in **Hazardous Materials Management** and **Worker Safety and Fire Protection**. Electromagnetic fields are discussed in **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are discussed in the **Soil and Water Resources** section. Potential exposure to contaminated soils and hazardous wastes is described in **Waste Management**.

[2] Criteria pollutants are discussed in the **Air Quality** section of this Decision.

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

- Characterize potential health risks by comparing worst-case exposure from the project with the scientific safety standards based on known health effects. (Ex. 200, p. 4.7-5.)

Initially, a screening level risk assessment is performed using simplified assumptions that are intentionally biased toward protection of public health. In reality, it is likely that the actual risks from the power plant will be much lower than the risks as estimated by the screening level assessment. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then using those conditions in the study. Such conditions include:

- Using the highest levels of pollutants that could be emitted from the power plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using the type of air quality computer model which predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses). (Ex. 200, p. 4.7-6.)

The risk assessment addresses three categories of potential health impacts:

- acute (short-term) health effects;
- chronic (long-term) non-cancer effects; and
- cancer risk (also long-term).

Acute health effects result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Chronic non-cancer health effects occur as a result of long-term exposure (8 to 70 years) to lower concentrations of pollutants. (Ex. 200, p. 4.7-6.)

The analysis for acute and chronic health effects compares the maximum project contaminant levels to safe levels called "reference exposure levels" or RELs.

These exposure levels are designed to protect the most sensitive individuals in the population, such as infants, the aged, and people suffering from illness or disease which makes them more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effect reported in the medical and toxicological literature and include margins of safety. The margin of safety addresses uncertainties associated with inconclusive scientific and technical information available at the time of standard setting and is meant to provide a reasonable degree of protection against hazards that research has not yet identified. The margin of safety is designed to prevent pollution levels that have been demonstrated to be harmful, as well as to prevent lower pollutant levels that may pose an unacceptable risk of harm, even if the risk is not precisely identified as to nature or degree. Health protection is achieved if the estimated worst-case exposure is below the relevant reference exposure level. In such a case, an adequate margin of safety exists between the predicted exposure and the estimated threshold dose for toxicity. (Ex. 200, p. 4.7-7.)

The levels of acute and chronic health effects are calculated according to a *hazard index* (HI), which is a ratio comparing TAC exposure to the RELs. A ratio of less than 1.0 signifies that the worst-case exposure falls below the risk threshold level. The HI for every toxic substance with the same type of health effect is added to yield a Total HI, which is calculated separately for acute and chronic effects. A Total HI of less than 1.0 indicates that cumulative worst-case exposures are less than significant. (Ex. 200, p. 4.7-8.)

For carcinogenic substances, the health assessment considers the total risk from all cancer-causing chemicals from the source of emissions. The calculated risk is not meant to predict the *actual* expected incidence of cancer, but is rather a *theoretical* estimate based on worst-case assumptions. (Ex. 200, pp. 4.7-7, 4.7-8.)

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

The screening analysis is performed to assess worst-case risks to public health associated with the proposed Watson Project. If the screening analysis predicts no significant risks, then no further analysis is required. However, if risks are above the significance level, then further analysis, using more realistic site-specific assumptions, would be performed to obtain a more accurate assessment of potential public health risks. (*Id.*)

If the screening analysis predicts no significant risks, then no further analysis is required. However, if the predicted risk is significant, then further analysis using more realistic, site-specific assumptions is performed to obtain a more accurate assessment of potential health risks. If the site-specific analysis confirms that the risk exceeds the significance level, then appropriate mitigation measures are necessary to reduce the risk to less than significant. If a refined analysis identifies a cancer risk that exceeds the significance level after all risk reduction measures have been considered, then Staff would not recommend approval of the project. (Ex. 200, p. 4.7-8.)

Applicant and Staff quantified the project's expected TAC emissions during both construction and operation to determine the level of potential cancer and non-cancer health risks to the public. (Ex. 200, pp. 4.7-9 - 4.7-19.)

1. Construction Impacts and Mitigation

Potential construction-phase health impacts could occur from exposure to toxic substances in windblown dust from site excavation and grading. (Ex. 200, pp. 4.7-9, 4.7-10.) Conditions of Certification **AQ-SC3** and **AQ-SC4** in the **Air Quality** section of this Decision require the project owner to implement several mitigation measures to minimize construction-related fugitive dust and to protect on-site workers and members of the public from exposure to the dust.

It is well-established by both the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) that particulate emissions from diesel-fueled construction equipment could result in carcinogenic health effects. (Ex. 200, pp. 4.7-9 - 4.7-11.) As discussed in the **Air Quality** section of this Decision, we have imposed specific mitigation measures to reduce diesel particulate emissions. Condition of Certification **AQ-SC5** requires the project owner to use Tier 2 or Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines, or install an oxidation catalyst and soot filters on diesel equipment. (Ex. 200, p. 4.7-11.) In addition, worker exposure to diesel

emissions will be controlled by implementation of safe work practices described in the **Worker Safety and Fire Protection** section of this Decision.

For the construction phase analysis, atmospheric dispersion modeling of diesel particulate matter (DPM) emissions from construction equipment and vehicles was conducted by the Applicant using AERMOD (the most recent Cal-EPA and U.S. EPA approved air dispersion model for use in estimating ground level airborne concentrations of toxic air contaminants emitted from a facility an from mobile sources). Total on-site PM emissions from diesel construction equipment exhaust were estimated by the Applicant to be 1,500 lbs over an approximately 20-month construction period. The corresponding annual DPM emission rate for exhaust emissions from on-site construction equipment and vehicles is 900 lb/yr for residential exposure over a 70 year lifetime. (Ex. 200, p. 4.7-13.)

The maximum predicted off-site concentration of diesel particulate matter, on a 70-year basis, was reported by the Applicant to be 0.14936 ug/m^3. (Ex. 3, Table 13-1.) Cancer risk due to diesel exhaust emissions was determined by multiplying the DPM concentration by the diesel cancer inhalation unit risk of 0.0003 (ug/m^3)$^{-1}$ and adjusting by the construction schedule (10 hours/day, 5 days/week, 22 days/month for 20 months or 0.0052). Cancer risk at the location of the maximum offsite concentration was determined to be 0.23 in a million and chronic HI to be 0.00016 (non-cancer chronic REL is 5 ug/m^3). (Ex. 200, p. 4.1-14.)

In response to Commission staff's Data Request #13, the Applicant prepared a screening health risks assessment for construction emissions according to methods prescribed by the SCAQMD. (Ex. 3.) A lifetime exposure adjustment value of 0.0052 was used in order to scale the exposure to the duration of construction activities (20 months, 1.67 years). A worst case risk was also computed using a lifetime exposure adjustment value of 0.0281 to adjust exposure to nine years, as required by OEHHA guidelines. The cancer risk predicted at the maximum impact receptor (MIR) was calculated to be 0.23 in one million for a 20-month exposure and 1.26 in one million for a nine-year exposure. The chronic hazard index at the MIR was calculated to be 0.000155 for a 20-month exposure and 0.00084 for a nine-year exposure (Ex. 3, Table 13-1). The results of the Applicant's HRA indicate that public health

impacts from construction activities would be less than significant. (Ex. 200, p. 4.7-10.)

Implementation of mitigation measures recommended by Energy Commission staff would reduce the maximum calculated particulate matter emissions. These include the use of extensive fugitive dust control measures. The fugitive dust control measures are assumed to result in up to a 90 percent reduction of emissions. Additionally, in order to mitigate potential impacts from particulate emissions during the operation of diesel-powered construction equipment, Staff notes that the use of ultra-low sulfur diesel fuel, an oxidation catalyst and soot filters on diesel equipment is required. The catalyzed diesel particulate filters are passive, self-regenerating filters that reduce particulate matter, carbon monoxide, and hydrocarbon emissions through catalytic oxidation and filtration. The degree of particulate matter reduction is comparable for both mitigation measures in the range of approximately 85–92 percent. Such filters will reduce diesel emissions during construction and reduce any potential for significant health impacts.

2. Operation

The emissions sources at the proposed Watson Project include one combustion turbine generator and two cooling tower cells. As noted earlier, the first step in a health risk assessment is to identify potentially toxic compounds that may be emitted from the facility. (Ex. 200, p. 4.7-11.) TAC emissions from the project's emission sources could adversely affect public health. **Public Health Table 1**, below, lists the toxic emissions potentially emitted by the Watson Project and shows how each contributes to the health risk analysis.

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Public Health Table 1:
Types of Health Impacts and
Exposure Routes Attributed to Toxic Emissions

Substance	Oral Cancer	Oral Noncancer	Inhalation Cancer	Noncancer (Chronic)	Noncancer (Acute)
Acetaldehyde			✓	✓	
Acrolein				✓	✓
Ammonia				✓	✓
Arsenic	✔	✔	✔	✔	✔
Benzene			✔	✔	✔
PAHs			✔		
1,3-Butadiene			✔	✔	
Cadmium			✔	✔	
Chromium VI			✔	✔	
Copper					✔
Cyanide					
Ethylbenzene			✔	✔	✔
Formaldehyde			✔	✔	✔
Hexane				✔	
Lead			✔		
Mercury				✔	✔
Manganese				✔	
Naphthalene		✔	✔	✔	
Nickel			✔	✔	✔
Propylene				✔	
Propylene oxide			✔	✔	✔
Toluene				✔	✔
Xylene				✔	✔

(Ex. 200, p. 4.7-12.)

The Applicant's screening health risk assessment for the Watson Project including emissions from all sources resulted in an acute Hazard Index (HI) of 0.00288 and a chronic HI of 0.0297 at the location of the maximum impact receptor (MIR), which represents the location with the highest concentration of TACs according to the dispersion modeling. The maximum impact receptors for the acute and chronic HI were located approximately 0.75 miles northwest of the project site. As **Public Health Table 2** shows, both acute and chronic hazard indices are less than 1.0, indicating that no short- or long-term adverse health effects are expected. (Ex. 200, p. 4.7-13.)

Public Health Table 2
Operation Hazard/Risk at Maximum Exposed Individual Resident

Type of Hazard/Risk	Hazard Index/Risk	Significance Level	Significant?
Acute Noncancer	0.00288	1.0	No
Chronic Noncancer	0.0297	1.0	No
Individual Cancer	0.7 in a million	10.0 in a million	No

(Ex. 200, p. 4.7-13.)

The maximum cancer risk for operations emissions from the proposed project (as calculated by Commission staff) at the point of maximum impact (PMI) is 0.79 in 1,000,000, which is well below the level of significance. Similarly, the maximum chronic HI calculated by Staff is 0.03 and the maximum acute HI is 0.0028. Staff also modeled several sensitive receptor locations and residential areas. All risks and hazards are well below the level of significance. Therefore, we find that the proposed project would not contribute to a significant public health impact. (Ex. 200, p. 4.7-20.)

a. Cooling Tower

In addition to being a source of potential toxic air contaminants, the possibility exists for bacterial growth to occur in the cooling tower, including Legionella. Legionella is a bacterium that is ubiquitous in natural aquatic environments and is also widely distributed in man-made water systems. It is the principal cause of legionellosis, otherwise known as Legionnaires' Disease, which is similar to pneumonia. Transmission to people results mainly from inhalation or aspiration of aerosolized contaminated water. Untreated or inadequately treated cooling systems, such as industrial cooling towers and building heating, ventilating, and air conditioning systems, have been correlated with outbreaks of legionellosis. (Ex. 200, p. 4.7-20.)

The State of California regulates recycled water for use in cooling towers in Title 22, Section 60303, California Code of Regulations. This section requires that, in order to protect workers and the public who may come into contact with cooling tower mists, chlorine or another biocide must be used to treat the cooling system water to minimize the growth of Legionella and other micro-organisms. This regulation applies to the Watson Project since it intends to use recycled water

provided by the West Basin Water Treatment Plant for cooling. (Ex. 200, p. 4.7-21.)

Implementation of Condition of Certification **PUBLIC HEALTH-1** would ensure that Legionella growth is kept to a minimum, thereby protecting both nearby workers as well as members of the public. The condition would require the project owner to prepare and implement a biocide and anti-biofilm agent monitoring program to ensure that proper levels of biocide and other agents are maintained within the cooling tower water at all times, that periodic measurements of Legionella levels are conducted, and that periodic cleaning is conducted to remove bio-film buildup. The evidence establishes that with the use of an aggressive antibacterial program coupled with routine monitoring and biofilm removal, the chances of Legionella growing and dispersing would be reduced to insignificance. The Applicant has stated that an appropriate biocide program and anti-biofilm agent monitoring program would be implemented for the entire cooling tower, including the two new cells proposed for this project. (Ex. 200, p. 4.7-22.)

3. Cumulative Impacts

Staff assessed cumulative impacts from the existing Watson cogeneration and refinery facility and the proposed expansion at both the location of the PMI for the existing facility and at the location of the PMI for the proposed project. Staff determined that risk due to project expansion at the location of the refinery PMI would be approximately 0.25 per million under the 70-year residential exposure scenario which does not represent a significant increase in the existing risk due to existing refinery operations. Cumulative risk at the location of the project expansion PMI, which is located on the western facility fenceline, was determined to be 4.4 in a million (3.6 in a million due to refinery emissions plus 0.79 in a million derived by Staff due to project expansion emissions). Results of Staff's cumulative impacts analysis are presented in **Public Health Table 3,** below.

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Public Health Table 3
Results of Staff's Cumulative Impacts Analysis

Receptor	Cancer Risk (per million)
Refinery PMI *(located at southern fenceline, 70 year exposure scenario)*	
Refinery emissions	20.9
Expansion emissions	0.25
Cumulative risk	21.1
Expansion PMI *(located at western fenceline, 70 year exposure scenario)*	
Refinery emissions	3.6
Expansion emissions	0.79
Cumulative risk	4.4

The maximum cancer risk for operations emissions from the proposed project (as calculated by Staff) is 0.79 in 1,000,000, which is well below the level of significance. And, as described above, the contribution of the project to both cancer risk and chronic and acute noncancer disease are comparatively very small. We therefore conclude that the proposed project's contribution to impacts on public health would not be cumulatively considerable.

4. Public Comment

At both the prehearing conference on October 17, 2011, and the evidentiary hearing on November 1, 2011, Mia McNulty, representing the community as well as the NAACP Carson-Torrance branch, provided oral public comment expressing concern over the high rate of asthma incidence in the area. Dr. Alvin Greenberg, Commission staff's Public Health expert witness, responded orally to this comment at both hearings, and also submitted a written response to the concerns expressed. Dr. Greenberg's written response is contained in the Docket for this proceeding, (TN 62593). Dr. Greenberg found no evidence that the Watson Project would contribute to an increase in the incidence of asthma. This

finding is consistent with the findings we have made in this Decision concerning the project's potential impacts on public health.

FINDINGS OF FACT

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

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

2. Exposure to diesel particulate emissions from construction equipment is short-term and will not result in long-term carcinogenic or non-cancer health effects.

3. Exposure to construction-related diesel particulates will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.

4. Exposure to fugitive dust due to excavation and construction activities will be mitigated to insignificant levels by implementing measures to reduce dust production and dispersal.

5. During operation, the project's emission sources include one combustion turbine generator and two cooling tower cells.

6. Project emissions of criteria pollutants, as discussed in the **Air Quality** section of this Decision, will be mitigated to levels consistent with applicable federal and state standards.

7. Project emissions of noncriteria pollutants or toxic air contaminants were assessed according to procedures developed by federal and state regulatory agencies to evaluate potential health effects.

8. Applicant performed a screening health risk assessment of the potential health effects due to project emissions of toxic air contaminants.

9. The health risk assessment assumed worst-case exposure to toxic air contaminants by the most sensitive receptors, including children, the elderly, people with pre-existing health conditions, and environmental justice populations.

10. Results of the health risk assessment show that project emissions of toxic air contaminants will not cause acute or chronic non-cancer adverse public health effects or long-term carcinogenic effects at the points of maximum impact.

11. The points of maximum impact for acute, chronic, and carcinogenic effects are near the project fenceline and do not extend to sensitive receptor locations.

12. The maximum cancer and non-cancer health risks associated with the project are substantially below the significance thresholds commonly accepted for risk analysis purposes.

13. The South Coast Air Quality Management District found that the modeling assumptions and results of the Applicant's risk assessment analysis were acceptable.

14. Since the project's contributions to health risks, including but not limited to asthma, are well below the significance level, the project is not expected to contribute significantly to a cumulative health impact.

CONCLUSIONS OF LAW

1. Project emissions of toxic air contaminants do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. With the implementation of the mitigation measures described in the evidentiary record and in the Conditions of Certification listed in the **Air Quality** and **Public Health** sections of this Decision, the project will not result in significant public health impacts during construction or operation.

3. The project will comply with the applicable laws, ordinances, regulations, and standards on public health referenced in the evidentiary record and as specified in the appropriate portion of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

Public Health-1 The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of

Legionella" guidelines. In either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of power plant operations, the project owner may ask the Compliance Project Manager (CPM) to re-evaluate and revise the Legionella bacteria testing requirement.

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

D. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential safety and health hazards on a daily basis. Federal and state laws and standards related to industrial workers are designed to ensure that these hazards are minimized to insignificant levels. This topic analyzes whether the project's safety and health plans are in accord with applicable LORS and adequate to protect industrial workers from hazardous working conditions. This topic also discusses the availability and adequacy of fire protection and emergency response services, as well as the mitigation measures necessary to ensure adequate response.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Worker Safety

Industrial environments are potentially dangerous during construction, operation, and demolition activities. Workers at the project will be exposed to excessive heat, loud noises, moving equipment, trenches, and confined space entry and egress problems. Potential injuries and death could result from falling, tripping, burns, lacerations, falling equipment or structures, chemical spills, hazardous waste, fires, explosions, electrical sparks, and electrocution. (Exs. 1, pp. 5.17-2 – 5.17-3; 200, p. 4.14-4.)

Both federal and state Occupational Safety and Health Administration (OSHA and Cal-OSHA) LORS pertaining to workers safety require the project owner to adopt well-defined policies and procedures, training programs, hazard recognition, and controls to minimize injuries and to protect the health of on-site workers. (Ex. 200, p. 4.14-2.)

The evidence provides extensive details on the worker safety and health programs required by applicable law and the project-specific safety measures necessary to protect on-site workers. Specifically, the project owner must develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which must be approved by the Energy Commission's Compliance Project Manager (CPM) prior to project construction and operation. A separate "Injury and Illness Prevention Program," a "Personal Protective Equipment Program," an

“Emergency Action Plan,” a “Fire Prevention Plan,” and other general safety procedures are required for both the construction and operation phases of the project. (Exs. 1, pp. 5.17-4 – 5.17-15; 200, pp. 4.14 – 4-8.) Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that these measures will be developed and implemented in compliance with applicable LORS as they require project owner preparation of the specified plans and review of the plans by the CPM and as appropriate, by the Los Angeles County Fire Department (LACOFD).

OSHA and Cal-OSHA standards encourage employers to monitor construction worker safety by employing a “Competent Person” who has experience enforcing workplace safety standards, has the ability to identify hazards relating to specific construction activities, and has authority to take appropriate action. To ensure implementation of this safe workplace policy during project construction, Condition of Certification **WORKER SAFETY-3** requires the project owner to employ a power plant Construction Safety Supervisor to coordinate and implement the Construction Safety and Health Programs, and to investigate any safety-related incidents and emergency responses. (Ex. 200, p. 4.14-9.)

To further reduce workplace hazards during project construction, the project owner must also employ a professional Safety Monitor. The Safety Monitor will report to the Chief Building Official (CBO) and the Compliance Project Manager (CPM), track compliance with OSHA/Cal-OSHA regulations, and serve as an on-site OSHA expert. The Safety Monitor is also responsible for auditing safety compliance and ensuring that safety procedures are implemented during construction, commissioning, and the transition to operational status. (Ex. 200, p. 4.14-10.) Implementation of Condition of Certification **WORKER SAFETY-4** will ensure that the Safety Monitor performs the duties described in the evidentiary record.

Testimony indicates that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. We therefore endorse this equipment as an appropriate safety and health precaution. Implementation of Condition **WORKER SAFETY-5** would require the project owner to maintain an automatic portable defibrillator on-site, ensure that it is

available during construction and operation, and train appropriate personnel on its use. (Ex. 200, p. 4.14-12.)

2. Fire Protection and Emergency Response

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment represent serious fire hazards. (Ex. 200, pp. 4.14-10 – 4.4-11.)

The project will rely upon both local fire protection services and on-site fire protection systems, which provide the first line of defense for such occurrences. The Construction Fire Prevention Program required by Condition **WORKER SAFETY-1** must be consistent with applicable LORS and specify measures to minimize the likelihood of fires during construction, including the locations of portable fire extinguishers, safety procedures, hazardous materials clean-up procedures, and worker training. (Exs. 1, p. 5.17-14; 200, p. 4.14-11.)

The Operation Fire Prevention Program required by Condition **WORKER SAFETY-2** ensures that the project will conform with applicable fire safety LORS. Evidence indicates that during operation, the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable NFPA standards (including Standard 850 addressing fire protection at electric generating plants), and all Cal-OSHA requirements. These fire standards require on-site fire suppression components to include both fixed and portable fire extinguishing systems located throughout the site. (Exs. 1, p. 5.17-13; 200, p. 4.14-11.)

Fire water will be supplied by tying into the existing Watson Cogeneration Facility water supply system through two points that connect into the new fire loop piping system. This system will supply the sprinkler system, deluge system, and fire hydrants. (Exs. 1, p. 5.17-14; 200, p. 4.14-11.)

For project operation, a fixed water sprinkler system will be in areas of risk and in administrative buildings in accordance with NFPA requirements. Each of the combustion turbine generators will have a carbon dioxide fire protection system. The CTG auxiliary equipment and transformers will be contained in a separate

concrete berm and protected with a water deluge system. Chemical and gas extinguishers will be in areas of risk where water would be ineffective as a fire suppressant. Other plant equipment such as electrical enclosures and the switchyard would be protected with a dry-type fire suppression system. (Exs. 1, pp. 5.17-14 – 5.17-15; 200, p. 4.14-11.)

In addition to the fixed fire protection system, the appropriate class of service portable extinguishers will be located throughout the facility at intervals consistent with NFPA and Uniform Fire Code requirements to ensure adequate fire protection. (Ex. 200, p. 4.14-12.)

The Los Angeles County Fire Department (LACOFD) has jurisdiction to provide fire support services to the site. For fire and emergency medical services, the closest station to the project site is Station #127, located at 2049 East 223rd Street (approximately 2.3 miles away) with a response time of approximately three minutes. The next nearest stations are Station #10 located at 1860 East Del Amo Boulevard (approximately 3.4 miles away) and Station #36, at 17 West 223rd Street, (approximately 3.1 miles away). Response times from these two stations are estimated at less than seven minutes. (Exs. 1, 5.17-15; 200, p. 4.14-3.)

Further, LACOFD is the first responder for hazardous materials incidents. Its Hazardous Materials Response Team will respond from Station # 105 located at 18915 S. Santa Fe, Compton, California, approximately 5.3 miles from the project site.

Thus, the evidence shows that the available local hazmat team is capable of responding to a hazardous materials emergency call from the project site with an adequate response time. (Ex. 200, p. 4.14-3.) And, as discussed in the **Traffic and Transportation** section of this Decision, LACOFD and any other emergency responders will have adequate access to the site.

3. Cumulative Impacts

A project may result in significant adverse cumulative impacts where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects,

and the effect of probable future projects. (Cal. Code Regs., tit. 14, §§ 15130, 15065.)

The evidence shows that LACOFD and its mutual aid emergency response teams are adequately equipped to respond to fire, hazmat, rescue, or EMS emergencies in a timely manner at the project site without any impacts on their capabilities to service other emergencies. (Ex. 200, pp. 4.14-12 - 4.14-13.) More particularly, as shown by the evidence and summarized above, given the lack of unique fire hazards associated with a modern gas-fired cogeneration power plant, and infrequent incidents at power plants that require fire or EMS response, we find that this project will not have a significant adverse cumulative impact on the LACOFD's ability to respond to a fire or medical emergency where its effects would be cumulatively considerable. (Ex. 200, p. 4.14-13.)

Furthermore, the project is the fifth "power train" of five that were originally planned to be installed at the existing Watson facility. The existing Watson cogeneration facility is adjacent to a major refinery (BP Carson Refinery) within a heavy industrial district. The existing four operating power trains have been in continuous operation for more than twenty years. The overall design, layout, and construction of this new unit will be essentially identical to the four existing units. As such, there is considerable current on-site expertise to ensure that safe operational procedures will be followed and that effective fire and EMS response measures will remain in place. Therefore, the addition of the project will not add significantly to the demands of local fire and EMS response services. (Exs. 1, § 1.1; 200, pp. 4.14-12 – 4.14-13.)

Thus, the project will not result in cumulative impacts on worker safety or fire protection and hazardous materials responder resources.

4. Compliance with LORS

Based on the evidence as summarized in the foregoing discussion, we find that with implementation of the Conditions of Certification **WORKER SAFETY-1** through**-5**, construction and operation of the project will comply with all applicable LORS summarized in **Appendix A** regarding long-term and short-term project-related impacts on worker safety and fire protection.

FINDINGS OF FACT

Based on the uncontroverted evidence, we make the following findings:

1. Industrial workers at the project site and along the linear corridors will be exposed to potential safety and health hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs consistent with applicable federal and state LORS for both the construction and operation phases of the project.

3. The project will employ an on-site professional Construction Safety Supervisor and a Construction Safety Monitor to ensure compliance with the Construction Safety and Health Program.

4. The project will maintain a portable automatic external defibrillator on-site and train personnel to use it in the event of a medical emergency.

5. The project will include on-site fire protection and appropriate fire suppression systems consistent with applicable LORS as the first line of defense in the event of a fire.

6. The Los Angeles County Fire Department will provide fire protection and emergency response services to the project site.

7. The Los Angeles County Fire Department and its mutual aid responders will provide adequate hazmat response capability.

8. The project owner will provide access to allow emergency vehicle access to the site.

9. Construction and operation of the project will not result in any direct, indirect, or cumulative impacts on fire protection services in the project vicinity.

CONCLUSIONS OF LAW

1. We therefore conclude that with implementation of the conditions of certification listed below and the mitigation measures described in the evidentiary record, the project will not result in significant health and safety impacts to on-site workers.

2. We further conclude that the mitigated project, as described in the evidentiary record, will comply with all applicable laws, ordinances, regulations, and standards listed for Worker Safety and Fire Protection as set forth in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

1. a Construction Personal Protective Equipment Program;
2. a Construction Exposure Monitoring Program;
3. a Construction Injury and Illness Prevention Program;
4. a Construction Emergency Action Plan; and
5. a Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Los Angeles County Fire Department for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program.

The project owner shall provide a copy of a letter to the CPM from the Los Angeles County Fire Department stating the Fire Department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

1. an Operation Injury and Illness Prevention Plan;
2. an Emergency Action Plan;
3. a Hazardous Materials Management Program;
4. an Operation Fire Prevention Program (8 Cal. Code Regs., § 3221); and

5. a Personal Protective Equipment Program (8 Cal. Code Regs., §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable Safety Orders. The Operation Fire Prevention Plan, the Hazardous Materials Management Program, and the Emergency Action Plan shall also be submitted to the Los Angeles County Fire Department for review and comment.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program.

The project owner shall provide a copy of a letter to the CPM from the Los Angeles County Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

1. have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
2. assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
3. assure that all construction and commissioning workers and supervisors receive adequate safety training;
4. complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
5. assure that all the plans identified in Conditions of Certification **WORKER SAFETY-1** and **-2** are implemented.
6. submit in the Monthly Compliance Report a monthly safety inspection report to include:
   - record of all employees trained for that month (all records shall be kept on site for the duration of the project);
   - summary report of safety management actions and safety-

related incidents that occurred during the month;

- report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- report of accidents and injuries that occurred during the month.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS).

The contact information of any replacement (CSS) shall be submitted to the CPM within one business day.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification **WORKER SAFETY-3**, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 30 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic external defibrillator (AED) is located on-site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in use of the AED and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in use of the AED. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) exists on site and a copy of the training and maintenance program for review and approval.

E. HAZARDOUS MATERIALS MANAGEMENT

This section considers whether the construction and operation of the Watson Project will create significant impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials. The **Worker Safety and Fire Protection** section of this Decision specifically addresses the protection of workers from such risks.

Several factors affect the potential for project-related hazardous materials to cause adverse impacts. These include meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. In addition, sensitive subgroups such as the young, the elderly, and those with existing conditions may be at heightened risk from exposure to emitted pollutants.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Risks

The evidence describes a 5-step method used by Staff to assess the risks posed by hazardous materials. This method included the following elements:

- A review of chemicals and the amounts proposed for on-site use, and a determination of the need and appropriateness of their use.
- Chemicals which would be used in small amounts, or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, were removed from further consideration.
- Measures proposed to prevent spills were reviewed and evaluated. These included engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs.
- Measures proposed to respond to accidents were reviewed and evaluated. These included engineering controls such as catchment basins and methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews.
- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place. (Ex.200, pp. 4.4-6 - 4.4-7.)

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, hydraulic fluid, welding gases, lubricants, solvents, paint, and paint thinner. These will be used in small quantities and any spills or other releases will be confined to the site. No acutely toxic materials will be used on-site during construction. During operations, hazardous materials will be used or stored only in small quantities and present limited off-site dangers because of their low volatility and/or toxicity. (Ex. 200, p. 4.4-1.)

Appendix B at the end of this section lists the hazardous materials that will be used and stored on-site. Condition **HAZ-1** prohibits the project owner from using hazardous materials not listed in **Appendix B**, or storing them in greater quantities than specified, without prior approval of the Energy Commission's Compliance Project Manager (CPM). None of the listed materials, except natural gas and aqueous ammonia, pose significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, their physical state, and/or their environmental mobility. (Ex. 200, p. 4.4-7.) We now examine the potential for off-site impacts from accidental releases of natural gas and ammonia.

a. Natural Gas

While natural gas would be used in significant quantities, it would not be stored on site. It would be delivered via an existing on-site gas pipeline at the Watson Project site. The risk of a fire and/or explosion on site can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. The National Fire Protection Association (NFPA) code requires both the use of double-block and bleed valves for gas shut off and automated combustion controls. These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, start-up procedures would require air purging of the gas turbines prior to start up, thereby precluding the presence of an explosive mixture. The safety management plan proposed by the Applicant addresses the handling and use of natural gas and would significantly reduce the potential for equipment failure because of either improper maintenance or human error. No new off-site gas pipeline will be required. The evidence satisfactorily establishes that conformance with existing codes will ensure minimal risks of pipeline failure. (Exs. 1, pp. 5.15-8, 5.15-13; 200, p. 4.4-8.)

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b. Aqueous Ammonia

Aqueous ammonia will be used to control the emission of oxides of nitrogen (NO_x) from the combustion of natural gas at the Watson Project. The accidental release of aqueous ammonia without proper mitigation can result in significant down-wind concentrations of ammonia gas. Watson would store 30 percent aqueous ammonia solution in an above-ground storage tank with a maximum capacity of 12,000 gallons. The tank would be surrounded by a secondary containment basin capable of holding the full contents of the tank plus the rainfall associated with a 24-hour 25-year storm. As required by Condition of Certification **HAZ-3**, the truck unloading area would be constructed with a sloped concrete pad that would drain into a containment area. (Ex. 200, p. 4.4-8.)

The use of aqueous ammonia can result in the formation and release of toxic gases in the event of a spill even without interaction with other chemicals. This is a result of its moderate vapor pressure and the large amounts of aqueous ammonia that will be used and stored on site. The assessment of the potential for off-site impacts associated with an accidental release of aqueous ammonia utilized several benchmark exposure levels. These include:

- the lowest concentration posing a risk of lethality, i.e. 2,000 parts per million (ppm);
- the concentration immediately dangerous to life and health, a level of 300 ppm;
- the emergency response planning guideline level 2 of 150 ppm; and
- the level of 75 ppm, considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure.

If the exposure associated with a potential release exceeds 75 ppm at any public receptor, the assessment calculated the probability of occurrence of the release, the severity of the consequences, and the nature of the potentially exposed population in determining whether the likelihood and extent of exposure would be significant. **Hazardous Materials Appendix A** discusses the criteria for ammonia exposure guidelines, their applicability to sensitive populations, and exposure-specific conditions). (Ex. 200, pp. 4.4-8 - 4.4-9.)

The evidence establishes that concentrations exceeding CEC's level of significance of 75 ppm would not extend beyond the facility fence line. The

record indicates that the potential for accidents resulting in the release of hazardous materials is greatly reduced through implementation of a safety management program that would include the use of both engineering and administrative controls. Elements of both facility controls and the safety management plan are summarized below. Therefore, no off-site public would experience a significant risk of an adverse health effect should an accidental release of aqueous ammonia occur due to tank failure or transfer activities. (Ex. 200, p. 4.4-9.)

2. Risk Mitigation

a. Engineering Controls

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

- storage of containerized hazardous materials in their original containers which are designed to prevent releases and are appropriately labeled;
- construction of secondary containment areas surrounding each of the hazardous materials storage areas designed to contain accidental releases that might happen during storage or delivery;
- physical separation of stored chemicals in isolated containment areas in order to prevent accidental mixing of incompatible materials, which could result in the evolution and release of toxic gases or fumes;
- construction of a containment area surrounding the aqueous ammonia storage tank, capable of holding the entire contents of the tank plus the volume of rainfall associated with a 24-hour 25-year storm; and
- process protective systems including continuous tank level monitors with automatic alarms that are triggered at set high and low level points, automated leak detectors, temperature and pressure monitors, alarms, and emergency block valves.

Furthermore, Condition of Certification **HAZ-3** would require construction of a sloped concrete pad surrounding the aqueous ammonia truck unloading area that drains into a secondary containment structure. (Ex. 200, p. 4.4-10.)

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b. Administrative Controls

Administrative controls also help prevent accidents and releases (spills) from moving off site and affecting neighboring communities by establishing worker training programs, process safety management programs, and complying with all applicable health and safety laws, ordinances, and standards.

A worker health and safety program will be prepared by the Applicant and include (but not be limited to) the following elements (see the **Worker Safety and Fire Protection** section of this Decision for specific regulatory requirements):

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

At the facility, the project owner will be required to designate an individual with the responsibility and authority to ensure a safe and healthful work place. The project health and safety official will oversee the health and safety program and have the authority to halt any action or modify any work practice to protect the workers, facility, and the surrounding community in the event of a violation of the health and safety program. (Ex. 200, p. 4.4-10.)

The Applicant will also prepare a risk management plan for aqueous ammonia, as required by Condition of Certification **HAZ-2**. This Condition also includes the requirement for a program for the prevention of accidental releases and responses to an accidental release of aqueous ammonia. A hazardous materials business plan will also be prepared by the Applicant that would incorporate state requirements for the handling of hazardous materials. Other administrative controls would be required in Conditions of Certification **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume) and **HAZ-3** (development of a safety management plan). Condition **HAZ-4** would require that the aqueous ammonia storage tank be designed to certain specifications. (Ex. 200, p. 4.4-11.)

3. On-Site Spill Response

In order to address the issue of spill response, the facility will prepare and implement an emergency response plan that includes information on hazardous materials contingency and emergency response procedures, spill containment and prevention systems, personnel training, spill notification, on-site spill containment, and prevention equipment and capabilities, as well as other elements as required by state law (Health and Saf. Code, §§ 25500 - 25541) and local law regarding Hazardous Materials Business Plans (see the **Worker Safety and Fire Protection** section of this Decision for a more detailed discussion of the requirements of these emergency response plans). Emergency procedures will be established which include evacuation, spill cleanup, hazard prevention, and emergency response. (Ex. 200, p. 4.4-12.)

The Los Angeles County Fire Department (LACOFD) would be the first responder for hazardous materials incidents. The LACOFD Hazardous Materials Response Team would respond from LACOFD Station #105 located at 18915 S. Santa Fe, Compton, California, approximately 5.3 miles from the project site. Commission staff communicated with officials of the LACOFD, who stated that the LACOFD was adequately staffed and equipped to respond to a hazardous materials emergency call from the Watson Project. We find that the available local hazmat team is capable of responding to a hazardous materials emergency call from the Watson Project with an adequate response time. (See the **Worker Safety and Fire Protection** section of this Decision.) (*Id.*)

We conclude, based on the evidence, that the project's use and storage of hazardous materials, including natural gas and aqueous ammonia, poses a less than significant risk to public health and safety.

4. Transportation Risk Reduction

The evidence shows that transport of aqueous ammonia poses the predominant risk to off-site receptors. Ammonia can be released during a transportation accident; the extent of impact depends upon the location of the accident and the rate of dispersion of ammonia vapor from the surface of the aqueous ammonia pool. The actual likelihood of an accidental release during transport depends upon the tanker driver's skill, the type of transport vehicle, and accident rates. (Ex. 200, p. 4.4-11.)

Commission staff reviewed the shortest available transportation route for hazardous materials delivery. Trucks would travel on Interstate 405 (I-405), exit at Wilmington Avenue, and follow Wilmington south to the project site. There are no schools located along this route and the street is a designated hazardous materials transportation route. (*Id.*)

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

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

To address this concern, Staff evaluated the risk of an accidental transportation release in the project area. Commission staff's analysis focused on the project area after the delivery vehicle leaves the main highway (I-405). We find it appropriate to rely upon the extensive regulatory program that applies to the shipment of hazardous materials on California highways to ensure safe handling in general transportation (see Federal Hazardous Materials Transportation Law 49 USC, § 5101 et seq., DOT regulations 49 CFR subpart H, §172–700, and California Department of Motor Vehicles (DMV) regulations on hazardous cargo). These regulations also address the issue of driver competence. (Ex. 200, p. 4.4-12.)

Aqueous ammonia will be delivered to the proposed facility in DOT-certified vehicles with design capacities of 6,500 gallons. These vehicles will be designed to DOT Code MC-307. These are high-integrity vehicles designed to haul caustic materials such as ammonia. Implementation of Condition of Certification **HAZ-5** will ensure that, regardless of which vendor supplies the aqueous ammonia, delivery will be made in a tanker that meets or exceeds the specifications described by these regulations. (*Id.*)

The frequency of release for the transportation of hazardous materials in the U.S. is between 0.06 and 0.19 releases per 1,000,000 miles traveled on well-designed roads and highways. The maximum use of aqueous ammonia each year of the operation of the proposed Watson Project will require about 50 tanker truck

deliveries of aqueous ammonia per year, each delivering about 6,500 gallons. Each delivery will travel approximately 0.6 miles from I-405 along Wilmington Avenue to the facility. (Ex. 200, p. 4.4-12.)

This would result in about 30 miles of delivery tanker truck travel in the project area per year (with a full load). The risk over this distance is insignificant. Data from the U.S. DOT show that the actual risk of a fatality over the past five years from all modes of hazardous material transportation (rail, air, boat, and truck) is approximately 0.1 in 1,000,000. We also find that the risk of exposure to significant concentrations of aqueous ammonia during transportation to the facility is insignificant. However, In order to further ensure that the risk of an accident involving the transport of aqueous ammonia to the power plant is insignificant, Condition of Certification **HAZ-6** would require the use of only one specific route to the site, that being the shortest route from an interstate (I-405 to Wilmington Avenue to the facility).

5. Seismic Issues

It is possible that an earthquake could cause the failure of a hazardous materials storage tank. An earthquake could also cause failure of the secondary containment system (berms and dikes), as well as the failure of electrically controlled valves and pumps. The failure of all of these preventive control measures might then result in a vapor cloud of hazardous materials that could move off site and affect residents and workers in the surrounding community. The effects of the Loma Prieta earthquake of 1989, the Northridge earthquake of 1994, the earthquake in Kobe, Japan, in January 1995, and the recent earthquake in Japan 2010 have all heightened concerns about earthquake safety.

Information obtained after the January 1994 Northridge earthquake showed that some damage was caused both to several large storage tanks and to smaller tanks associated with the water treatment system of a cogeneration facility. The tanks with the greatest damage, including seam leakage, were older tanks, while the newer tanks sustained displacements and failures of attached lines. Therefore, Staff conducted an analysis of the codes and standards which should be followed when designing and building storage tanks and containment areas to withstand a large earthquake. Staff also reviewed the impacts of the February 2001 Nisqually earthquake near Olympia, Washington, a state with similar seismic design codes as California. No hazardous materials storage tanks failed

as a result of that earthquake. The proposed project will be designed and constructed to the standards of the most recent California Building Code. Therefore, on the basis of what occurred in Northridge with older tanks and the lack of failures during the Nisqually earthquake (with newer tanks), we find that tank failures during seismic events are not probable and do not represent a significant risk to the public. (Ex. 200, p. 4.4-14.)

6. Site Security

The Applicant proposes to use hazardous materials identified by the U.S. EPA as requiring the development and implementation of special site security measures to prevent unauthorized access. The energy generation sector is one of 14 areas of critical infrastructure listed by the U.S. Department of Homeland Security. On April 9, 2007, the U.S Department of Homeland Security published in the Federal Register (6 CFR Part 27) an interim final rule requiring that facilities that use or store certain hazardous materials conduct vulnerability assessments and implement certain specified security measures. This rule was implemented with the publication of Appendix A, the list of chemicals, on November 2, 2007. The rule applies to aqueous ammonia solutions of 20 percent or greater and this proposed facility plans to utilize a 30 percent aqueous ammonia solution. (Ex. 200, p. 4.4-14.)

In order to determine the level of security, the Energy Commission staff used an internal vulnerability assessment decision matrix modeled after the U.S. Department of Justice Chemical Vulnerability Assessment Methodology (July 2002), the North American Electric Reliability Council's (NERC) 2002 guidelines, the U.S. DOE VAM-CF model, and the U.S. Department of Homeland Security regulations published November 2007 in the Federal Register (Interim Final Rule 6 CFR Part 27). Staff determined that this project would fall into the category of low vulnerability. (Ex. 200, p. 4.4-15.)

Security measures include perimeter fencing and breach detectors, alarms, site access procedures for employees and vendors, site personnel background checks, and law enforcement contacts in the event of a security breach. Site access for vendors shall be strictly controlled. Consistent with current state and federal regulations governing the transport of hazardous materials, hazardous materials vendors will have to maintain their transport vehicle fleet and employ only properly licensed and trained drivers. The project owner will be required, through the use of contractual language with vendors, to ensure that vendors

supplying hazardous materials strictly adhere to the U.S. DOT requirements for hazardous materials vendors to prepare and implement security plans (as per 49 CFR 172.800) and to ensure that all hazardous materials drivers are in compliance through personnel background security checks (as per 49 CFR Part 1572, Subparts A and B). The CPM may authorize modifications to these measures or may require additional measures in response to additional guidance provided by the U.S. Department of Homeland Security, the U.S. DOE, or the NERC, after consultation with both appropriate law enforcement agencies and the Applicant. (*Id.*)

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

7. Cumulative Risks

A significant cumulative hazardous materials impact is defined as the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact where the release of one hazardous material alone would not cause a significant impact. Existing locations that use or store gaseous or liquid hazardous materials, or locations where such facilities might likely be built, were both considered. The nearby area to the Watson Project site is comprised of power plants, a petroleum refinery, heavy industrial and commercial establishments, with some residential areas at distances beyond a half mile. (Ex. 200, p. 4.4-15.)

The evidence shows that a worst-case release of aqueous ammonia from the proposed project site predicts would not result in significant levels of ammonia vapors off-site, i.e.: beyond the nearest project fenceline. Therefore, no cumulative impacts would be expected even if a nearby facility were to store and use hazardous materials and have an accidental release concurrent with that from the proposed Watson Project. The chances of one uncontrolled release occurring are remote (about one in one million per year). The chance of two or more occurring simultaneously at the Watson Project site and another facility at the same time, with resulting airborne plumes commingling to create a significant impact, is even more remote. We find that the risk to the public is insignificant. *(Id.)*

The Applicant will develop and implement a hazardous materials handling program for the Watson Project independent of any other projects considered for potential cumulative impacts. We find that the facility, as proposed by the Applicant and with the implementation of additional mitigation measures set forth below, poses a minimal risk of accidental release that could result in off-site impacts. Therefore, we conclude that the facility would not contribute to a significant hazardous materials-related cumulative impact.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The Watson Project will use hazardous materials during construction and operation, including aqueous ammonia and natural gas.

2. The major public health and safety danger associated with these hazardous materials include the accidental release of aqueous ammonia.

3. Appropriate design measures to contain spilled ammonia are necessary to ensure that no significant off-site public health consequences will result from an accidental release.

4. Compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of aqueous ammonia will reduce potential risks of accidental release to insignificant levels.

5. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

6. Potential impacts from the other hazardous substances used on-site are not significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. The likelihood of cumulative impacts originating from simultaneous releases of hazardous materials from the Watson Project and nearby facilities is statistically remote and considered insignificant.

8. Local emergency responders are adequately equipped and trained to deal with hazardous materials accidents at the Watson Project.

9. Implementation of the mitigation measures described in the evidence and contained in the Conditions of Certification, below, ensures that the project

will not cause significant impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

10. With implementation of the Conditions of Certification, below, the Watson Project will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

CONCLUSION OF LAW

The Commission concludes, therefore, that the storage, use, and transportation of hazardous materials associated with the Watson Project will not result in any significant direct, indirect or cumulative adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix B, below, or in greater quantities or strengths than those identified by chemical name in Appendix B, below, 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.

HAZ-2 The project owner shall concurrently provide a new or updated Business Plan and a Risk Management Plan (RMP) prepared pursuant to the California Accidental Release Program (CalARP) to the Los Angeles County Fire Department (LACOFD) and the CPM for review. After receiving comments from the LACOFD and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the LACOFD for information and to the CPM for approval.

Verification: At least 30 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Business Plan to the CPM for approval.

At least 30 days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the Certified Unified Program Agency for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia and other liquid hazardous materials by tanker truck. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include

a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials including provisions to maintain lockout control by a power plant employee not involved in the delivery or transfer operation. This plan shall be applicable during construction, commissioning, and operation of the power plant.

Verification: At least 30 days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to either the ASME Pressure Vessel Code and ANSI K61.6 or to API 620. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

Verification: At least 60 days prior to delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles which meet or exceed the specifications of DOT Code MC-307. The project owner shall provide this direction in a letter to the vendor(s) at least 30 days prior to the receipt of aqueous ammonia on site.

Verification: At least 30 days prior to receipt of aqueous ammonia on-site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 At least 30 days prior to receipt of any hazardous materials on-site, the project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM. Trucks will travel on I-405 to Wilmington Avenue to the plant site. The project owner shall obtain approval of the CPM if an alternate route is desired.

Verification: At least 30 days prior to receipt of any hazardous materials on site, the project owner shall submit to the CPM for review and approval copies of notices to hazardous materials vendors describing the required transportation route.

HAZ-7 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

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

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-8 The project owner shall also prepare a site-specific security plan (or an update to an existing security plan) for the commissioning and operational phases that will be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least 8 feet high;
2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on-site or off-site;
6. a. a statement (refer to sample, **Attachment A**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of

employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;

b. a statement(s) (refer to sample, **Attachment B**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;

7. site access controls for employees, contractors, vendors, and visitors;

8. a statement(s) (refer to sample, **Attachment C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;

9. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate and the ammonia storage tank; and

10. additional measures to ensure adequate perimeter security consisting of either:

    a. security guard(s) present 24 hours per day, 7 days per week;

    <u>or</u>

    b. power plant personnel on site 24 hours per day, 7 days per week, **or** if power plant personnel are not on-site 24 hours per day, 7 days per week, all plant alarms, intrusion detectors, and CCTV systems shall be monitored at all times from a remote location when the site is unmanned, and **all** of the following:

        1. the CCTV monitoring system required in item 9, above, shall include cameras able to pan, tilt, and zoom; that have low-light capability, are recordable, and are able to view 100 percent of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **and**

        2. perimeter breach detectors **<u>or</u>** on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical power plant components—transformers, gas lines, and compressors—depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with both appropriate law enforcement agencies and the Applicant.

Verification: At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval.

In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan.

In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

SAMPLE CERTIFICATION (Attachment "A")

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit) (Title)

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

_____

(Company name)

for employment at:

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment "B")

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit)(Title)

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

_____

(Company name)

for contract work at:

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

SAMPLE CERTIFICATION (Attachment "C")

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

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

_____

(Company name)

for hazardous materials delivery to:

_____

(Project name and location)

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

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

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

HAZARDOUS MATERIALS
Appendix A

Basis for Staff's Use of 75 Parts Per Million Ammonia Exposure Criteria

BASIS FOR STAFF'S USE OF 75 Parts Per Million AMMONIA EXPOSURE CRITERIA

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

Staff has chosen to use the National Research Council's 30-minute Short Term Public Emergency Limit (STPEL) for ammonia to determine the potential for significant impact. This limit is designed to apply to accidental unanticipated releases and subsequent public exposure. Exposure at this level should not result in serious effects but would result in "strong odor, lacrimation, and irritation of the upper respiratory tract (nose and throat), but no incapacitation or prevention of self-rescue." It is Staff's opinion that exposures to concentrations above these

levels pose significant risk of adverse health impacts on sensitive members of the general public. It is also Staff's position that these exposure limits are the best available criteria to use in gauging the significance of public exposures associated with potential accidental releases. It is, further, Staff's opinion that these limits constitute an appropriate balance between public protection and mitigation of unlikely events and are useful in focusing mitigation efforts on those release scenarios that pose real potential for serious impacts on the public. **Appendix A Table-1** provides a comparison of the intended use and limitations associated with each of the various criteria that Staff considered in arriving at the decision to use the 75-ppm STPEL.

Hazardous Materials Appendix A Table-1
Acute Ammonia Exposure Guidelines

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
IDLH[2]	NIOSH	Workplace standard used to identify appropriate respiratory protection.	300 ppm	30 minutes	Exposure above this level requires the use of "highly reliable" respiratory protection and poses the risk of death, serious irreversible Injury, or impairment of the ability to escape.
IDLH/10[1]	EPA, NIOSH	Work place standard adjusted for general population factor of 10 for variation in sensitivity	30 ppm	30 minutes	Protects nearly all segments of general population from irreversible effects.
STEL[2]	NIOSH	Adult healthy male workers	35 ppm	15 minutes, 4 times per 8-hour day	No toxicity, including avoidance of irritation.
EEGL[3]	NRC	Adult healthy workers, military personnel	100 ppm	Generally less than 60 minutes	Significant irritation, but no impact on personnel in performance of emergency work; no irreversible health effects in healthy adults. Emergency conditions one-time exposure.
STPEL[4]	NRC	Most members of general population	50 ppm 75 ppm 100 ppm	60 minutes 30 minutes 10 minutes	Significant irritation, but protects nearly all segments of general population from irreversible acute or late effects. One-time accidental exposure.
TWA[2]	NIOSH	Adult healthy male workers	25 ppm	8 hours	No toxicity or irritation on continuous exposure for repeated 8-hour work shifts.
ERPG-2[5]	AIHA	Applicable only to emergency response planning for the general population (evacuation) (not intended as exposure criteria) (see preface attached)	200 ppm	60 minutes	Exposures above this level entail** unacceptable risk of irreversible effects in healthy adult members of the general population (no safety margin).

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

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

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

HAZARDOUS MATERIALS
Appendix B
Hazardous Materials Proposed for Use at the Watson Project

Material	Hazardous Characteristics1	Purpose	Storage Location	Maximum Stored	Storage Type
Diesel Fuel	Ignitability	Refueling truck	Laydown Area	4,000 gallons	Truck
Acetylene, Oxygen,Other Welding Gases	Ignitability	Maintenance Welding	Temporary Gas Cylinder Storage Area	400 cubic feet	Cylinders of various volumes
Lead/acid and Alkaline batteries	Corrosivity, Toxicity	Power for Equipment	Laydown Area	50	Unit
Solvents, Adhesives, etc.	Toxicity	Maintenance	Temporary Chemical Storage Area	660 gallons	Drum
Paint	Toxicity	Painting	Temporary Chemical Storage Area	1,000 gallons	Can
Gasoline	Ignitability, Toxicity	Refueling Construction Vehicles and Equipment	Laydown Area	4,000 gallons	Tank
Lubricating Oil	Mildly Toxic	Lubricating Equipment Parts	Laydown area	1,000 gallons	Tanks
Pipeline Natural Gas	Ignitability	Fuel	Supply piping only	Utility supply on demand	Pipelines
Acetylene, Oxygen, Other Welding Gases	Ignitability	Maintenance Welding	Indoor gas cylinder storage in warehouse	Minimal	Cylinders of various volumes
HRSG Cleaning Chemicals (e.g., HCl, Citric Acid, EDTA Chelant, Sodium Nitrate)	Toxic, Reactive, Corrosive,	HRSG Chemical Cleaning	Chemicals are contractor provided.	Multiyear cleaning requirement/temp storage only	Small original containers
Mineral Insulating Oil	Mildly Toxic	Electrical Transformers	Outdoor in Transformers	18,000 gallons	Transformers with secondary containment. Substance is not regulated.
Lubricating Oil	Mildly Toxic	Lubricating Equipment Parts	Within Rotating Equipment	4,000 gallons	Within Rotating Equipment
Combustion Turbine Wash Chemicals (specialty detergents and surfactants)	Toxic, Irritants	Combustion Turbine Cleaning	Chemicals are contractor provided and are either not stored on-site or are stored only temporarily in a chemical storage area.	Intermittent use/cleaning by contractor	Small original containers
Aqueous Ammonia (30% concentration)	Corrosive, Toxic	Air Pollution Controls	Above ground outdoor storage tank	12,000 gallons	Steel tank with secondary containment basis

Source: Watson 2009a, Tables 5.15-1 through 5.15-4, and URS 2010i

F. WASTE

The Watson Cogeneration facility will generate non-hazardous and hazardous wastes in both solid and liquid forms during construction and under normal operating conditions. Before demolition and construction can begin, Condition of Certification **WASTE-2** requires the project owner to prepare a Soils Management Plan to assure the proper handling, storage and disposal of contaminated soils as well as a Demolition and Construction Waste Management Plan, required by Condition of Certification **WASTE-4**.

This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous and hazardous wastes.

Nonhazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.)

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC). (See Health and Saf. Code, § 25100 et seq., Hazardous Waste Control Act of 1972, as amended, and Cal. Code Regulations, tit. 22, § 66261.1 et seq.) State law requires hazardous waste generators to obtain U.S. EPA identification numbers and contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Existing Site Conditions

The 2.5-acre Watson Project site is located adjacent to four operating cogeneration units in the maintenance area of the 428-acre BP Carson petroleum refinery parcel. The maintenance area was developed within the refinery retention basin, which was in operation from 1920 until 1987. There are known and potential soil and groundwater impacts associated with the current and historic refinery operations and maintenance operations at the BP Carson Refinery, including the Watson Project site. (Exs. 1, p. 5.14-2; 200, p. 4.13-10.)

Remediation of soil and groundwater impacts at the BP Carson Refinery is on-going in accordance with Cleanup and Abatement Orders (CAO) Numbers 84-17 and 90-121, issued in 1984 and 1990 respectively by the Los Angeles Regional Water Quality Control Board (LARWQCB) with Environmental Protection Agency (EPA) involvement. The CAOs require adequate protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. The CAOs, which are still in effect, are designed to address all ground water and soil clean-up at the entire refinery, including the Watson Project site. (Ex 200, p. 4.13-10.)

There are known and potential subsurface impacts associated with the historic and current operations of the Watson Cogeneration Facility. A Phase I Environmental Site Assessment (ESA), conducted in accordance with the American Society for Testing and Materials Standard Practice identified a number of Recognized Environmental Conditions (REC). The existing fill on the site may consist of a blend of non-hazardous and hazardous constituents. (Ex 200, p. 4.13-10.)

The record indicates that the investigation of soil and groundwater contamination is part of a separate ongoing investigation and remediation conducted by the BP Carson Refinery Project as part of their two COA Numbers 84-17 and 90-121. During the project geotechnical assessment and construction activities, any excavated soil will be managed pursuant to applicable BP Carson Refinery soils management plans, pursuant to Condition of Certification **Waste- 2**, and health and safety of site personnel will be managed in accordance with the site specific health and safety plan (Condition of Certification **Worker Safety-2**) as well as applicable BP Carson Refinery procedures. Contaminated soils, if encountered, will be stockpiled on-site and later removed for disposal or treatment and recycling. If necessary, engineered fill will be imported to replace excavated materials that are not suitable for reuse. (Ex 200, pp. 4.13-10 - 4.13-11.)

The project site is currently covered with asphalt paving, and has a warehouse/maintenance shop with associated underground man-made structures, such as piping and tanks and possibly other unidentified structures. The asphalt and structures in the footprint of the project site will be demolished and removed prior to construction. The site will then be prepared for installation of foundations and underground facilities. The foundation excavations will require that approximately 7,000 cubic yards of existing fill material be removed and stockpiled. Excavated contaminated soils will be stored temporarily in construction zones and later removed off-site for disposal. (Ex 200, p. 4.13-11.)

Based on the known previous refinery activity (retention basin and maintenance/operation area) on the Watson Project site, the project owner will be required to evaluate whether the soil is classified as non-hazardous or hazardous and determine what disposal methods are appropriate. The characterization must also address whether there are potential impacts from soil excavation and grading that could exacerbate groundwater impacts. Characterization of the 2.5 acre site must be carried out consistent with the various remediation programs currently in place at the refinery. The project owner must ensure that the soil will be disposed of in legal discharge areas and handled in accordance with the existing CAOs and applicable LORS. (Ex 200, pp. 4.13-11 - 4.13-12.)

Condition of Certification **WASTE-1** requires the project owner to sample and analyze soil to be excavated during construction, evaluate whether it is classified as hazardous or nonhazardous, and determine appropriate methods of disposal. Condition of Certification **WASTE-2** requires a Soils Management Plan to assure the proper handling, storage and disposal of contaminated soils prior to initiating any earthwork on the project site. Condition of Certification **WASTE-3** requires that an experienced and qualified professional engineer or professional geologist be available for consultation during site characterization, soil grading or soil excavation to determine appropriate actions to be taken in the event contaminated soil is encountered. (Ex 200, p. 4.13-12.)

Conditions of Certification **WASTE -1** and **2**, and **WORKER SAFETY-1** and **2** require the project owner to demonstrate how the project owner will manage the excavation of the contaminated soils in order to protect human health and the environment. These conditions ensure that potential contamination is adequately characterized and the type and extent of contamination is quantified. They also ensure that potential contaminated soils will be appropriately disposed of and managed so that worker health and safety is protected and potential environmental impacts are not exacerbated. (Ex. 200, p. 4.13-12.)

2. Construction

Site preparation and construction of the power plant and its associated facilities will generate both nonhazardous and hazardous wastes in solid and liquid forms. Condition **WASTE-4** requires the project owner to develop and implement a Demolition and Construction Waste Management Plan that identifies all waste streams and the methods of managing each waste. (Ex. 300, p. 4.13-12.)

a. Nonhazardous Wastes

During demolition, approximately 1,120 tons of debris will be recycled and approximately one ton will be disposed of in a Class I or II landfill. During construction, as little as 20 cubic yards of non-hazardous solid wastes will be generated. Construction waste would include scrap metal, wood, concrete, steel/metal, paper, glass, empty tanks, waste oil, and plastic waste. All non-hazardous wastes will be recycled to the extent possible and non-recyclable wastes will be collected by a licensed hauler and disposed of in a solid waste disposal facility, in accordance with California Code of Regulations, title 14, section 17200 et seq. (Ex. 200, pp. 4.13-12 - 4.13-13.) Implementation of Condition of Certification **WASTE-5** would ensure that the Watson Project owner complies with the county's Construction and Demolition Debris Recycling and Reuse Program Ordinance, Chapter 20.87. Compliance with Condition of Certification **WASTE-5** would further reduce potential impacts to local landfills from project wastes.

Non-hazardous liquid wastes will also be generated during construction, including sanitary wastes, dust suppression drainage, and equipment wash water. Sanitary wastes will be collected in portable, self-contained toilets and pumped periodically for disposal at an appropriate facility. Potentially contaminated equipment wash water will be contained at designated wash areas and transported to a sanitary wastewater treatment facility (see the **Soil and Water Resources** section of this Decision for more information on the management of project wastewater). (Ex. 200, p. 4.13-8.)

b. Hazardous Wastes

Hazardous wastes that would likely be generated during construction include solvents, waste paint, oil absorbents, used oil, oily rags, batteries, cleaning wastes, spent welding materials, and empty hazardous material containers. The total volume of hazardous wastes generated during construction is estimated to be approximately 195 cubic yards. (Ex. 200, p. 4.13-13.)

The project owner will be required to obtain a unique hazardous waste generator identification number for the site prior to starting construction, pursuant to Condition of Certification **Waste-6**. Although the hazardous waste generator number is determined based on site location, both the construction contractor and the project owner/operator could be considered the generator of hazardous wastes at the site. (Ex. 200, p. 4.13-13.)

Wastes will be accumulated on site for less than 90 days and then properly manifested, transported, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies. The record indicates that all wastes will be disposed of in accordance with all applicable LORS. Should any construction waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner is required by Condition of Certification **Waste-7** to notify the Energy Commission's Compliance Project Manager (CPM) when the owner becomes aware of any such action. (Ex. 200, p. 4.13-13.)

In the event that construction excavation, grading, or trenching activities for the Watson Project encounter potentially contaminated soils that require specific handling, disposal and other precautions required pursuant to hazardous waste management LORS, Conditions of Certification **Waste-2** and **-3** ensure appropriate compliance. Absent any unusual circumstances, compliance with LORS will be sufficient to ensure that project waste management activities will not create significant impacts. (Ex. 200, p. 4.13-9.)

3. Operation

Condition **WASTE-8** requires the project owner to develop and implement an Operation Waste Management Plan to identify all waste streams and the methods of managing each waste before operations begin. (Ex. 200, p. 4.13-14.)

a. Nonhazardous Wastes

Operation of the project is expected to generate less than ten tons per year of non-hazardous solid wastes (not including filter cake). This includes routine maintenance wastes (such as used air filters, spent deionization resins, sand and filter media) as well as domestic and office wastes (such as office paper, newsprint, aluminum cans, plastic, and glass). All non-hazardous wastes will be recycled, to the extent possible, and non-recyclable wastes will be regularly transported off site to a local solid waste disposal facility. Non-hazardous liquid wastes will be generated during facility operation, and are discussed in the **Soil and Water Resources** section of this Decision. (Ex. 200, 4.13-14.)

b. Hazardous Wastes

The project owner/operator will be considered the generator of hazardous wastes at the site during facility operations. Therefore, the project owner's unique

hazardous waste generator identification number, obtained prior to construction in accordance with Condition of Certification **Waste-6**, will be retained and used for the management of hazardous wastes generated during facility operation. (Ex. 200, p. 4.13-14.)

The generation of hazardous wastes expected during routine project operation includes used hydraulic fluids, oils, greases, oily filters and rags, spent selective catalytic reduction catalysts, cleaning solutions and solvents, and batteries. In addition, spills and unauthorized releases of hazardous materials or hazardous wastes may generate contaminated soils or materials that may require corrective action and management as hazardous waste. Proper hazardous materials handling and good housekeeping practices help keep spilled wastes to a minimum. However, to ensure proper cleanup and management of any contaminated soils or waste materials generated from hazardous materials spills, Condition of Certification **Waste-9** requires the project owner/operator to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements. More information on hazardous material management, spill reporting, containment, and spill control and countermeasures plan provisions for the Watson Project are provided in the **Hazardous Materials Management** section of this Decision. (Ex. 200, pp. 4.13-14 - 4.13-15.)

Less than two tons per year of hazardous wastes will be generated during the 30-year anticipated operation of the Watson facility, with source reduction and recycling of wastes implemented whenever possible. The hazardous wastes will be temporarily stored on site, transported off site by licensed hazardous waste haulers, and recycled or disposed of at authorized disposal facilities in accordance with established standards applicable to generators of hazardous waste (22 Cal. Code Regs., § 66262.10 et seq.) Should any operations waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner is required by Condition of Certification **Waste-7** to notify the CPM when the owner becomes aware of any such action. (Ex. 200, p. 4.13-15.)

4. Potential Impacts on Waste Disposal Facilities

During construction of the Watson Project, approximately 144 cubic yards of solid waste, and approximately eight tons per year of operation waste will be generated and recycled or disposed of in a Class III landfill. (Ex. 200, p. 4.13-15.)

The record identifies six non-hazardous (Class III) waste disposal facilities that could potentially take the non-hazardous construction and operation wastes generated by the Watson Project facility. These Class III landfills are all located in Southern California in Los Angeles County. The remaining capacity for the six landfills combined is over 49 million cubic yards. The total amount of non-hazardous waste generated from project construction and operation will contribute less than one percent of the available landfill capacity. We find that disposal of the solid wastes generated by the Watson Project facility can occur without significantly impacting the capacity or remaining life of any of these facilities. (Ex. 200, p. 4.13-15.)

Hazardous wastes are eligible for transport to two of California's available Class I landfills: the Buttonwillow Landfill in Kern County, and the Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and Class III wastes. Kettleman Hills and Buttonwillow landfills have a combined excess of 10 million cubic yards of remaining hazardous waste disposal capacity, with up to 33 years of remaining operating lifetimes. The volume of hazardous waste from the Watson facility requiring off-site disposal will be far below the threshold of significance and will therefore not significantly impact the capacity or the remaining life of the Class I waste facilities. (Ex. 200, pp. 4.13-15 - 4.13-15.)

5. Cumulative Impacts

The quantities of solid and hazardous wastes generated by the Watson Project will add to the total quantities of waste generated by new residential and commercial development in California. However, the record shows that the Watson Project's waste stream is relatively low, recycling efforts will be prioritized, and sufficient disposal capacity is available. As a result, the project's cumulative impacts on disposal facilities will be insignificant for both nonhazardous and hazardous waste disposal. (Ex. 200, p. 4.13-11.)

6. Public Comment

The public offered no comment on the subject of Waste Management.

FINDINGS OF FACT

1. The Watson Cogeneration facility will generate non-hazardous and hazardous wastes in both solid and liquid forms during construction and under normal operating conditions.

2. There are known and potential subsurface impacts associated with the historic and current operations of the Watson Cogeneration Facility.

3. The project owner will implement appropriate characterization, disposal, and remediation measures to ensure that the risk of exposure to previously undetected contaminated soils at the site is reduced to insignificant levels.

4. The project will recycle nonhazardous and hazardous wastes to the extent feasible and in compliance with applicable law.

5. Hazardous wastes that cannot be recycled will be transported by registered hazardous waste transporters to appropriate Class I landfills.

6. Solid nonhazardous wastes that cannot be recycled will be deposited at Class II and III landfills in the local area.

7. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the **Soil and Water Resources** section of this Decision.

8. Compliance with LORS will be sufficient to ensure that project waste management activities will not create significant impacts.

9. The volume of hazardous waste from the Watson Facility requiring off-site disposal will be far below the threshold of significance.

10. The volume of hazardous waste from the Watson Facility requiring off-site disposal will not significantly impact the capacity or the remaining life of the Class I waste facilities.

11. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

CONCLUSIONS OF LAW

1. Implementation of the Conditions of Certification, below, and the waste management practices described in the evidentiary record will reduce potential impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.

2. The management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall sample and analyze soil to be excavated during construction of the Watson Project and evaluate whether it is hazardous or nonhazardous and determine the appropriate disposal method. In no event shall project construction commence in areas requiring characterization until the CPM has determined that all necessary testing, characterization, and method of disposal has been accomplished.

Verification: At least 60 days prior to the start of site mobilization, the project owner shall provide to the CPM for review and approval the results of the soil sampling and analysis, and determination of methods of disposal.

WASTE-2 Prior to initiating any earthwork on the project site, the project owner shall prepare and submit to the Los Angeles Regional Water Quality Control Board, and to the CPM for approval, a Soils Management Plan (SMP). The SMP should include but is not limited to the following:

- Land use history, including description and locations of known contamination;
- An earthwork schedule;
- The project owner shall describe methods which will be used to properly handle and/or dispose of soil which may be classified as hazardous or contain contaminants at levels of potential concern, including the identification of legal discharge areas;
- The SMP shall discuss whether the disturbance or removal of soil and other materials during excavation and grading will exacerbate existing groundwater contamination or compromise the ability to remediate groundwater contamination in accordance with Cleanup and Abatement Orders 84-17 and 90-121;
- The SMP shall discuss, as necessary, the reuse of soil on site in accordance with applicable criteria to protect construction workers or future workers on site;
- This SMP should be submitted to the Los Angeles Regional Water Quality Control Board as part of the cleanup plans required by Cleanup and Abatement Orders 84-17 and 90-121;
- A SMP summary report, which includes all analytical data and other findings, must be submitted once the earthwork has been completed.

Verification: At least 60 days prior to any earthwork, including those earthwork activities associated with the site mobilization, ground disturbance, or grading as defined in the General Conditions Of Certification the project owner shall submit

the Soils Management Plan to the Los Angeles Regional Water Quality Control Board for review and comment, and to the CPM for approval.

WASTE-3 The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies. The professional engineer or professional geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil, and to determine appropriate actions to be taken.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

WASTE-4 The project owner shall prepare a Demolition and Construction Waste Management Plan for all wastes generated during demolition of existing structures or construction of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a description of all demolition and construction waste streams, including projections of frequency, amounts generated, and hazard classifications; and
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.

Verification: The project owner shall submit the Demolition and Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

WASTE-5 The project owner shall provide a Recycling and Reuse Plan demonstrating how they will divert at least 50 percent of all soil, rock and gravel, and at least 50 percent of all construction and demolition (C & D) debris, excluding inert material, to the Los Angeles County Integrated Waste Management Authority (IWMA) Construction and Demolition Debris Recycling and Reuse Program per Los Angeles County Code Chapter 20.87. The project owner shall ensure compliance with all of the county of Los Angeles' diversion program requirements and shall provide proof of compliance documentation to the county of Los Angeles and the CPM, including a Recycling and

Reuse Summary Report, receipts, and records of measurement, consistent with the county of Los Angeles' normal reporting requirements.

Verification: Prior to the start of any construction activities, the project owner shall submit to the county of Los Angeles IWMA documentation consistent with the requirements of the County's C & D Debris Recycling and Reuse Program, along with the normally required deposit and administrative fees. At least 60 days prior to the start of any construction activities, the project owner shall submit the proposed C & D Debris Recycling and Reuse Plan, along with any comments received from the county of Los Angeles, to the CPM for review and approval. Project mobilization and construction shall not proceed until the County of Los Angeles issues an approval document, consistent with the county's normal building permit approval, and the CPM provides written concurrence.

Not later than 60 days after completion of project construction, the project owner shall submit documentation of compliance with the diversion program requirements to the CPM and County of Los Angeles IWMA. The required documentation shall include a Recycling and Reuse Summary Report (as set forth by the county program), along with all necessary receipts and records of measurement from entities receiving project wastes.

WASTE-6 The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM in the next scheduled compliance report.

WASTE-7 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed.

WASTE-8 The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- a detailed description of how facility wastes will be managed and any contingency plans to be employed in the event of an unplanned closure or planned temporary facility closure; and
- a detailed description of how facility wastes will be managed and disposed of upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary. The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan, as necessary, to address current waste generation and management practices.

WASTE-9 The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are documented and cleaned up and that wastes generated from the release/spill are properly managed and disposed of, in accordance with all applicable federal, state, and local requirements.

Verification: The project owner shall document management of all unauthorized releases and spills of hazardous substances, hazardous materials, or hazardous wastes that are in excess of EPA's reportable quantities (RQ), that occur on the project property or related linear facilities during construction and on the property during operation. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release. A copy of the unauthorized release/spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

VII. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other resources of critical biological interest such as unique habitats. The evidence contained in the record describes the biological resources in the vicinity of the project, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The proposed Watson Project site is located in the city of Carson, approximately five miles north of San Pedro Bay, in the southwestern portion of the Los Angeles Basin. The Los Angeles Basin covers an area that extends from the Santa Monica Mountains to the north, San Gabriel Mountains on the east, the Santa Ana Mountains on the south, and the Pacific Ocean on the west. Historically, the Los Angeles Basin native habitat included native woodlands, coastal scrubs, chaparral, and grasslands which steadily over time have been replaced by urban development and invasive, non-native vegetation. (Ex. 200, p. 4.2-4.)

The proposed project site consists of the existing refinery facility which is essentially devoid of vegetation. The sparse vegetation that is present on-site consists of ruderal invasive species and ornamental plantings. The construction laydown and parking area is located approximately one mile southeast of the proposed project site on a paved 25-acre parcel that is currently used as a truck parking and staging area. (Ex. 200, p. 4.2-4.)

2. Biological Survey

A biological resources field survey was conducted June 4, 2008, and a Staff reconnaissance-level site visit May 20, 2010. The area surveyed included the cogeneration facility, construction laydown, and parking area. A one mile radius buffer surrounding the proposed Watson Project site was surveyed for botanical and wildlife resources. The project site and surrounding refinery are hardscaped

with road base, rock, asphalt, or concrete with no natural vegetation. Plant species observed included ruderal vegetation with very few native species. The construction laydown and parking area is completely devoid of vegetation, however scattered ruderal plant species are found along the asphalt berm such as mulefat (*Baccharis salicifolia*), tumbleweeds (*Amaranthus albus*), and ornamental grasses. These plant species and fan palms (*Washingtonia filifera*) were also observed along the dirt access road, which follows the Dominguez Channel east of the construction laydown and parking area. The only wildlife observed was a rock dove (*Columba livia*) within the proposed project site. There was no evidence of avian breeding activity and no sign of other wildlife such as reptiles or mammals. (Ex. 200, p. 4.2-5.)

Biological Resources Table 1 identifies the special-status species based on field surveys and searches of the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) and California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants for the nine-quad area (641 square miles) centered on the Watson Project site.

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Biological Resources Table 1
Special Status Species Potentially Occurring Within Watson Cogeneration Steam and Electric Reliability Project Area

Species	Status	Habitat	Potential to Occur in the Project Area
Plants			
Aphanisma (*Aphanisma blitoides*)	G3G4, S3, List 1B.2	Coastal bluff scrub, coastal dunes, and coastal scrub	None
Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*)	FE, G2T1, S1, List 1B.1	Coastal saltmarsh and brackish waters, salt marsh and wetland	None
Coastal dunes milk-vetch (*Astragalus tener* var. *titi*)	FE, G1T1, S1.1, List 1B.1	Coastal bluff scrub and coastal dunes	None
Coulter's saltbush (*Atriplex coulteri*)	G2, S2.2, List 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland in alkaline or clay soils	None
South coast saltscale (*Atriplex pacifica*)	G3G4, S2.2, List 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, and playas	None
Parish's brittlescale (*Atriplex parishii*)	G1G2, S1.1, List 1B.1	Chenopod scrub, playas and vernal pool with alkaline soils	None
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)	G5T2?, S2?, List 1B.2	Coastal bluff scrub and coastal scrub	None
Plummer's mariposa-lily (*Calochortus plummerae*)	G3, S3, List 1B.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland	None
Intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)	G3G4T2, S2.2, List 1B.2	Chaparral, coastal scrub, valley and foothill grassland	None
Santa Barbara morning-glory (*Calystegia sepium* spp. *binghamiae*)	G5TH, SH, List 1A	Chaparral, coastal scrub, valley and foothill grassland	None
Southern tarplant (*Centromadia parryi* ssp. *australis*)	G4T2, S2.1, List 1B.1	Salt marsh, valley and foothill grassland and vernal pools, alkaline soils	None
Salt marsh bird's-beak (*Chloropyron maritimum* spp. *maritimum*)	FE, SE, G4?T2?, S2.1, List 1B.2	Coastal dunes, and salt marshes	None
Catalina crossosoma (*Crossosoma californicum*)	G2, S2, List 1B.2	Chaparral and coastal scrub	None
Island green dudleya (*Dudleya virens* spp. *insularis*)	G2T2, S2.2, List 1B.2	Coastal bluff scrub and coastal scrub	None

Species	Status	Habitat	Potential to Occur in the Project Area
Plants			
Coulter's goldfields (*Lasthenia glabrata* spp. *coulteri*)	G4T3, S2.1, List 1B.1	Alkali playa, coastal salt marsh, valley and foothill grassland, vernal pool and wetlands	None
Santa Catalina Island desert-thorn (*Lycium brevipes* var. *hassei*)	G1Q, S1.1, List 1B.1	Coastal bluff scrub and coastal scrub	None
Mud nama (*Nama stenocarpum*)	G4G5, S1S2, List 2.2	Marsh and wetlands	None
Gambel's water cress (*Nasturtium gambelii*)	FE, ST, G1, S1, List 1B.1	Brackish marsh, freshwater marsh, and wetlands	None
Spreading navarretia (*Navarretia fossalis*)	FT, G1, S1, List 1B.1	Alkali playa, chenopod scrub, freshwater marsh, vernal pool and wetlands	None
Prostrate vernal pool navarretia (*Navarretia prostrata*)	G2?, S2.1?, List 1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland with alkaline soils and vernal pools with mesic soils	None
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	G2G4T3, S2.2, List 1B.2	Coastal dunes	None
California Orcutt grass (*Orcuttia californica*)	FE, SE, G2, S2.1, List 1B.1	Vernal pool and wetlands	None
Lyon's pentachaeta (*Pentachaeta lyonii*)	FE, SE, G2, S2, List 1B.1	Chaparral (openings), Coastal scrub, valley and foothill grassland in rocky, clay soils	None
Hubby's phacelia (*Phacelia hubbyi*)	G3, S1, List 4.2	Rocky slopes of chaparral and grassland	None
Brand's star phacelia (*Phacelia stellaris*)	FC, G2?, S1, List 1B.1	Coastal dunes and scrub	None
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	G4TH, SH, 1A	Riparian	None
Sanford's arrowhead (*Sagittaria sandfordii*)	G3, S3, List 1B.2	Freshwater marsh and ponds	None
Salt spring checkerbloom (*Sidalcea neomexicana*)	G4?, S2S3, List 2.2	Alkali playa, brackish marsh, chaparral, coastal scrub, lower montane coniferous forest, alkali springs and marshes Mojavean desert scrub and wetlands	None
Estuary seablite (*Suaeda esteroa*)	G3, S2, List 1B.2	Coastal salt marsh	None
San Bernardino aster (*Symphyotrichum defoliatum*)	G2, S2, List 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, marsh and swamp, meadow and seep, valley and foothill grassland and wetlands	None

Wildlife	Status	Habitat	Potential to Occur in the Project Area
Invertebrates			
Western tidal-flat tiger beetle (*Cicindela gabbii*)	G4, S1	Estuary, mud shores and flats	None
Sandy beach tiger beetle (*Cicindela hirticollis gravida*)	G5T2, S1	Coastal dunes	None
Western beach tiger beetle (*Cicindela latesignata latesignata*)	G4T1T2, S1	Mud shores and flats	None
Senile tiger beetle (*Cicindela senilis frosti*)	G4T1, S1	Mud shores and flats	None
Monarch butterfly (*Danaus plexippus*)	G5, S3	Closed-cone coniferous forest	None
Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*)	FE, G5T1, S1	Coastal scrub	None
Wandering (saltmarsh) skipper (*Panoquina errans*)	G4G5, S1	Marshes and swamps	None
Dorthy's El Segundo Dune weevil (*Trigonoscuta dorothea dorothea*)	G1T1, S1	Coastal dunes	None
Mimic tryonia (California brackishwater snail) (*Tryonia imitator*)	G2G3, S2S3	Brackish marsh, estuaries, lagoons, salt marshes and swamps	None
Fish			
Mohave tui chub (*Siphateles bicolor mohavensis*)	FE, SE, G4T1, S1, FP	Artificial standing and flowing waters	None
Amphibians			
Western spadefoot (*Spea hammondii*)	G3, S3, SSC	Vernal pools and wetlands in cismontane woodland, coastal scrub, valley and foothill grasslands	None

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Wildlife	Status	Habitat	Potential to Occur in the Project Area
Invertebrates			
Reptiles			
Silvery legless lizard (*Anniella pulchra pulchra*)	G3G4T3T4Q, S3, SSC	Chaparral, coastal dunes, coastal scrub	None
Coastal whiptail (*Aspidoscelis tigris stejnegeri*)	G5T3T4, S2S3	Coastal chaparral	None
Green turtle (*Chelonia mydas*)	FT, G3, S1	Marine bay	None
Western pond turtle (*Emys marmorata*)	G3G4, S3, SSC	Aquatic, standing or flowing waters, marshes and wetlands	None
Coast horned lizard (*Phrynosoma blainvilli*)	G4G5, S3S4, SSC	Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinyon and juniper woodlands, riparian scrub, riparian woodland, valley and foothill grassland	None
Birds			
Tricolored blackbird (*Agelaius tricolor*)	G2G3, S2, SSC	Emergent wetland vegetation, especially cattails and tules; also in trees and shrubs	None
Western burrowing owl (*Athene cunicularia*)	G4, S2, SSC	Rodent burrows in sparse grassland, desert, and agricultural habitats	Moderate: has occurred in the proposed project site vicinity, last occurrence seen nearby in 2006
Ferruginous hawk (*Buteo regalis*)	G4, S3S4, WL	Open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats	None
Western Snowy Plover (*Charadrius alexandrinus nivosus*)	FT, G4T3, S2, SSC	Great Basin standing waters, sand shore and wetlands	None
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC, SE, G5T3Q, S1	Riparian forest	None
Southwestern willow flycatcher (*Empidonax trailii extimus*)	FE, SE, G5T1T2, S1	Riparian woodland	None

Wildlife	Status	Habitat	Potential to Occur in the Project Area
Invertebrates			
Birds			
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	SE, G5T3, S3	Marshes and wetlands	None
California brown pelican (*Pelecanus occidentalis californicus*)	Federal and State Delisted, G4T3, S1S2, FP	coastal salt water, beaches, bays, marshes and on the open ocean	None
coastal California gnatcatcher (*Polioptila californica californica*)	FT, G3T2, S2, SSC	Coastal sage scrub/ chaparral	None
Light-footed clapper rail (*Rallus longirostris levipes*)	FE,SE, G5T1T2, S1, FP	Coastal salt marsh and wetlands	None
Black skimmer (*Rynchops niger*)	G5, S1S3, SSC	Alkali playa and sandy shores	None
California least tern (*Sternula antillarum browni*)	FE, SE, G4T2T3Q, S2S3, FP	Sandy soils with little vegetation along the ocean, lagoons, and bays	None
Mammals			
Western mastiff bat (*Eumops perotis californicus*)	G5T4, S3?, SSC, WBWG-H	Roosts are often found under large exfoliating slabs of granite, sandstone slabs or in columnar basalt, on cliff faces or in large boulders and some in buildings	None
Silver-haired bat (*Lasionycteris noctivagans*)	G5, S3S4, WBWG-M	Lower montane coniferous and riparian forests including old growth forests	None
Western yellow bat (*Lasiurus xanthinus)*	G5, S3, SSC, WBWG-H	Dry, thorny vegetation on the Mexican Plateau and in desert regions of the southwest and are particularly associated with palms	None
South coast marsh vole (*Microtus californicus stephensi*)	G5T1T2, S1S2, SSC	Tidal marshes	None
San Diego desert woodrat (*Neotoma lepida intermedia)*	G5T3?, S3?, SSC	Coastal scrub	None
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	G4, S2S3, SSC, WBWG-M	Prefers rock crevices in cliffs as roosting sites, but has been found in caves and in buildings	None
Big free-tailed bat (*Nyctinomops macrotis*)	G5, S2, SSC, WBWG-MH	Rock crevices, buildings, caves, and tree hollows	None

Wildlife	Status	Habitat	Potential to Occur in the Project Area
Invertebrates			
Mammals			
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE, G5T1, S1, SSC	Coastal scrub	None
southern California saltmarsh shrew (*Sorex ornatus salicornicus*)	G5T1?, S1, SSC	Salt marsh	None
American badger (*Taxidea taxus*)	G5, S4, SSC	variety of open, arid habitats, but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub	None

Federal FC= Candidate species for listing
FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range
FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

State SSC = California Species of Special Concern - Species of concern to CDFG because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction
FP = State fully protected
SE = State listed as endangered
ST = State listed as threatened
WL = State watch list

Western Bat Working Group
WBWG-H = High Priority: are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats
WBWG-MH = Medium-High Priority: lack of adequate data to assess species' status and indicates the need for closer evaluation, research and conservation actions
WBWG-M = Medium Priority: medium risk of imperilment based on available information on distribution, status, ecology and known threats

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California Native Plant Society
List 1B = Rare, threatened, or endangered in California and elsewhere
List 2 = Rare, threatened, or endangered in California but more common elsewhere
List 3 = Plants which need more information
List 4 = Limited distribution – a watch list
List 1A = Presumed extinct because they have not been seen or collected in the wild in California for many years. This list also includes plants which are presumed extirpated

Threat Rank
0.1 = Seriously threatened in California (high degree/immediacy of threat)
0.2 = Fairly threatened in California (moderate degree/immediacy of threat)
0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

Global Rank/State Rank
Global rank (G-rank) and State rank (S-rank) is a reflection of the overall condition of an element throughout its global (or State) range. Subspecies are denoted by a T-rank; multiple rankings indicate a range of values. State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. An H-rank indicates that all sites are historical.
G1 or S1 = Critically imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 or S2 = Imperiled – At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
G3 or S3 = Vulnerable – At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
G4 or S4 = Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 or S5 = Secure – Common; widespread and abundant.
G#G# and S#S# = Range Rank is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type.
Q = Questionable taxonomy that may reduce conservation priority.
H = Possibly extinct
? = Inexact numeric rank
T# = Infraspecific taxon refer to subspecies, varieties and other designations below the level of species.

(Ex. 200, pp. 4.2-6 – 4.2-10.)

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Special Status Wildlife

Western Burrowing Owl (Athene cunicularia)

The western burrowing owl is a small, terrestrial owl of open country. Western burrowing owls favor flat, open grassland or gentle slopes and sparse shrubland ecosystems. These owls prefer annual and perennial grasslands, typically with sparse, or nonexistent, tree or shrub canopies. The owls use the burrows of ground squirrels and other rodents for shelter and nesting. Ground squirrels provide nesting and refuge burrows, and maintain areas of short vegetation height, which provide foraging habitat and allow for visual detection of avian predators by burrowing owls. In the absence of ground squirrel populations, habitats soon become unsuitable for occupancy by owls. The nesting season is from February 1 through August 31. (Ex. 200, p. 4.2-11.)

There have been three occurrences of western burrowing owls on the property surrounding the proposed project site in the past. One occurrence was 0.25-mile southwest of the proposed project site. In 2005 an owl was observed at the stormwater drain in the refinery parking lot north of the proposed project site. A third wounded owl was recovered by facility workers in 2006. It was given to the BP Environmental Field Coordinator and taken to a Long Beach rehabilitation center. Since 2006, no western burrowing owls have been observed in the Watson Project vicinity. No suitable habitat or occupied burrows were observed during the field survey. (*Id*.)

3. Construction Impacts and Mitigation

Even though no habitat for wildlife species occurs at the proposed Watson Project site due to the highly disturbed and developed facility, western burrowing owls may be present. The occasional western burrowing owl has been known to occur in the vicinity of the project site. Implementation of Conditions of Certification **BIO-1** through **BIO-5** will avoid and minimize impacts related to western burrowing owls. Condition of Certification **BIO-5** requires preconstruction surveys for western burrowing owls, and if any are present onsite, requires implementation of impact avoidance and minimization measures. The Designated Biologist and/or Biological Monitor required by Conditions of Certification **BIO-1** and **BIO-3** would conduct the preconstruction surveys. The duties and authority of the Designated Biologist and Biological Monitor are described in Conditions of Certification **BIO-2** (Designated Biologist Duties) and

BIO-4 (Designated Biologist and Biological Monitor Authority), respectively. (Ex. 200, pp. 4.2-12 – 4.2-13.)

Construction activities would result in a short-term temporary increase in lighting. Lights can disorient migratory birds flying at night or attract wildlife such as insects and insect-eaters in some cases. Since the project is located within an industrial area in which there is already night lighting from existing surrounding industrial uses and there is no habitat for wildlife, the additional light from the proposed Watson Project will not adversely affect any local wildlife. (*Id*.)

Construction activities would result in a short-term temporary increase in the ambient noise level. Such activities have the potential to disrupt the nesting, roosting, or foraging activities of local wildlife. However, the existing refineries, intermodal transit yards, several freight rail lines, and other industrial facilities in the immediate vicinity of the proposed project site create an elevated ambient noise level to which local wildlife species have acclimated. As such, construction noise will not adversely impact any local wildlife. (Ex. 200, p. 4.2-14.)

4. Operational Impacts and Mitigation

Potential operation-related impacts include impacts to birds due to collision with the addition of an exhaust stack and disturbance to wildlife due to increased lighting and noise.

Birds are known to collide with exhaust stacks, and other tall structures, causing mortality to the birds. The addition of a 100-feet tall exhaust stack would be unlikely to pose a collision risk because it will be shorter than those typically associated with bird collision events such as communication lines with guy wires and tall buildings with reflective sides, it would not have any lighting, bird densities are already low in the project area due to lack of habitat attractive to birds such as wetlands, and the proposed project site is not within a known migratory bird flyway. Therefore, we find that the additional exhaust stack would not pose a significant collision threat beyond the existing cogeneration facility to resident or migratory bird populations. (*Id*.)

Existing facilities adjacent to the proposed project site provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. Although operation of the proposed project would create additional light, it will not adversely affect any local wildlife. (*Id.*)

Wildlife species near the Watson Project site are accustomed to elevated ambient noise levels as a result of the vehicular traffic caused by trucks and rail line operations, existing refineries, intermodal transit yards, and other industrial facilities. Although operation of the proposed Watson Project could create additional noise, it will not adversely impact any local wildlife. (*Id.*)

5. Cumulative Impacts

A cumulative impact is the impact on the environment which results from the incremental impact of the project when added to other past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. A project could result in a significant cumulative impact where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (Cal. Code Regs., tit. 14, § 15130).

The proposed Watson Project site would only affect previously developed land in an industrial area and thus does not contain any habitat for sensitive species and there is no habitat surrounding the project site for sensitive species. There would be no impact to habitat suitable to support sensitive species. Therefore we find that the Watson Project would have no cumulative impacts to biological resources. (Ex. 200, p. 4.2-15.)

6. LORS Compliance

Construction and operation of the proposed Watson Project would take place entirely within areas previously disturbed for construction and operation, no wildlife habitat exists in these areas, and impacts to wildlife can be avoided by implementation of the conditions of certification, so the project would be in compliance with all federal, state, and local LORS related to biological resources during construction and operation.

The record establishes and, accordingly, we find that implementation of the conditions of certification will result in the Watson Project being in compliance with all applicable state, federal, and local LORS.

FINDINGS OF FACT

Based on the uncontroverted record of evidence, we find the following:

1. The Watson Project site and laydown area are highly disturbed due to grading and paving done previously for the development of the BP Carson Refinery and the Watson Cogeneration Project.

2. Special-status plant species are not expected to occur in the project area because there is no suitable habitat within the project site as a result of ongoing disturbance from industrial operations.

3. The special-status wildlife species western burrowing owl, has been known to utilize the site and thus has the potential to occur in the project area.

4. The evidence contains an analysis of potential adverse impacts of the Watson Project upon biological resources, including special-status species, which may potentially be affected by project construction and operation.

5. Potential direct impacts to special-status species in the surrounding area can be mitigated with implementation of the conditions of certification.

6. The project owner will implement a construction mitigation management plan by educating workers on habitat protection, and designating a qualified biologist and biological monitors with authority to halt activities to avoid impacts to sensitive biological resources.

7. The project owner will submit a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) incorporating all biological mitigation and compliance measures required by applicable local, state, and federal LORS.

8. Watson Project structures will not pose a significant collision threat to resident or migratory bird populations.

9. Wildlife species near the Watson Project site are accustomed to elevated ambient noise levels as a result of the existing industrial uses and traffic such that the construction and operation noise of the LEC will not create significant impacts to biological resources.

10. Wildlife species near the Watson Project site are acclimated to an elevated ambient level of night-time lighting such that the construction and operation of the project will not create significant impacts to wildlife as a result of lighting.

CONCLUSIONS OF LAW

1. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.

2. With implementation of the mitigation measures described in the evidentiary record and incorporated into the conditions of certification below, as well as those in other portions of this Decision, the Watson Project will not result in significant direct, indirect, or cumulative impacts to biological resources.

3. With implementation of the mitigation measures described in the evidentiary record and incorporated into the conditions of certification, the Watson Project will conform to all applicable laws, ordinances, regulations, and standards related to biological resources as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

DESIGNATED BIOLOGIST SELECTION

BIO-1 The project owner shall submit the resume, at least three references and contact information of the proposed Designated Biologist (DB) to the Compliance Project Manager (CPM) for approval.

The Designated Biologist must at least meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least one year of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed DB or alternate has the appropriate training and background to effectively implement the conditions of certification.

Verification: The project owner shall submit the specified information at least 45 days prior to the start of any site (or related facilities) mobilization. No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days

prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

DESIGNATED BIOLOGIST DUTIES

BIO-2 The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM.

1. Advise the project owner's Construction and Operation Managers on the implementation of the **Biological Resources** Conditions of Certification;
2. Be available to supervise, conduct, and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat;
3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
4. Notify the project owner and the CPM of any non-compliance with any **Biological Resources** Condition of Certification;
5. Respond directly to inquiries of the CPM regarding biological resource issues; and
6. Maintain written records of the tasks specified above. Summaries of these records shall be submitted in the Monthly Compliance Report during project construction.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting.

BIOLOGICAL MONITOR SELECTION

BIO-3 The project owner’s CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information for the proposed biological monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the assigned duties.

Verification: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) have been trained, including the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to their first day of monitoring activities.

DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY

BIO-4 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the **Biological Resources** Conditions of Certification.

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

The Designated Biologist or Biological Monitor(s) shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the Construction/Operation Manager when to resume activities; and
3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or would be instituted, as a result of the work stoppage.

Verification: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure would be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

WESTERN BURROWING OWL IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-5 The project owner shall implement the following measures to manage their construction site, construction laydown and parking area, in a manner to avoid or minimize impacts to western burrowing owls.

Preconstruction surveys shall be conducted for western burrowing owls for any areas subject to disturbance from construction prior to the start of site mobilization. Surveys shall be conducted by walking the entire project site and in areas within 500 feet of anticipated ground disturbance, construction laydown areas, and parking area. In the event that owls or owl sign are identified during the survey(s), the project owner shall identify the date and time of owl survey visit(s) and a map depicting location(s) of owls and owl sign.

If owls are found and need to be relocated, only passive relocation of the owls would occur prior to the start of construction and only during the non-breeding season (September 1 through January 31).

During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer until the young have fledged.

Verification: Pre-construction burrowing owl surveys shall be conducted at least 30 days prior to any pre-site mobilization and/or construction activities. At least 10 days after burrowing owl surveys, but prior to any work activities associated with the project, the project owner shall submit a report to the CPM and CDFG that describes when these survey(s) were conducted, duration of the survey(s), a map depicting the results of the survey(s), and if owls are present, the measures to be implemented to avoid and minimize impacts to owls in and near the construction and laydown areas. If owls are present, the project owner shall immediately coordinate with the CPM in consultation with CDFG for approval of proposed impact avoidance and minimization measures.

B. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the project, including the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also considers site contamination and any potential cumulative impacts to soil and water resources in the vicinity of the project. Mitigation measures are included in the conditions of certification to ensure that the project will have no adverse impacts on the environment and that it will comply with all applicable laws, ordinances, regulations, and standards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Watson Project is located in the city of Carson, in Los Angeles County. The project is located on the southwest edge of the Los Angeles Basin, which is an alluvial plain bounded by the Santa Monica Mountains to the north, the Santa Ana Mountains and the San Joaquin Hills to the east, and the Pacific Ocean approximately 5 miles to the south and 8.5 miles to the west. The elevation at the project site is approximately 32 feet above mean sea level (MSL). The project is located within the existing BP Carson Refinery and the surrounding areas are highly developed. (Ex. 200, p. 4.9-5.)

1. Construction Impacts and Mitigation

a. Erosion

The soils at the proposed project site are primarily sandy loam and fine sandy loam with loam, silt loam or light clay loam. The soils within both the project site and laydown area have been modified with several feet of additional fill material to accommodate large industrial, housing, or other types of urban development. The construction laydown area is paved and is not expected to require any soil disturbance. (Ex. 200, p. 4.9-8.)

The project site and construction laydown area are both relatively flat, limiting the potential for soil erosion due to water. Some excavation and grading would be required at the 2.5-acre project site while no land disturbance is planned for the paved 25-acre construction laydown and parking area. Approximately 7,000 cubic yards of material will be excavated for foundations. This material would be removed and stockpiled for use as fill material on-site. No imported fill material is

anticipated as on-site material is expected to be adequate for construction. (Ex. 200, pp. 4.9-8 – 4.9-9.)

The Watson Project site will be subject to wind and water erosion during construction. Project construction is planned over a period of about 26 months. Watson anticipates that dust suppression measures will be required during 15 months of the construction period. (Ex. 200, pp. 3-3; 4.9-19 – 4.9-20.)

Watson prepared a preliminary draft Drainage Erosion and Sediment Control Plan (DESCP) that provides conceptual plans for erosion and drainage control measures, including Best Management Practices (BMPs) to be implemented during the construction phase of the Watson Project. Watson has proposed the following erosion control measures: scheduling to minimize disturbance of exposed areas during the rainy season; dust control at disturbed areas, haul roads, and parking areas; stockpile management including covering; and perimeter sediment barriers. Watson has also proposed use of silt fences, straw bale barriers, storm drain inlet protection, stabilized construction and site entrance/exits and street sweeping and vacuuming to trap eroded sediments. During construction, stormwater runoff from the fifth train power block area would be directed to the BP Carson Refinery's oily water treatment system. Runoff from the southern portion of the fifth train and the remainder of the existing Watson Cogeneration facility, including areas redeveloped as part of the Watson Project, would continue to drain to the existing storm drain system and subsequently the Dominguez Channel. The construction laydown area would be separated from the parking area using Jersey barriers (or K-rails) and sand bags. Storm drain inlet protection measures would be used at the existing inlets in the laydown area to prevent sediments from being discharged directly to the Dominguez Channel. (Ex. 200, p. 4.9-20.)

We find that the proposed plans are sufficient to avoid significant adverse impacts due to wind and water erosion. Implementation of Condition of Certification **SOIL&WATER-1** would require Watson to prepare a final DESCP for both construction and operations, to assure these BMPs are implemented, and to identify post-construction BMPs to stabilize the project site.

b. Contamination

A Phase I Environmental Site Assessment (ESA) for the project site was completed in 2009. The Phase I ESA found that soil and groundwater at the project site could potentially be impacted by hazardous substances used in

petroleum and maintenance operations. A limited soils investigation at the site in 1985 found evidence of hydrocarbons in the fill and underlying native soils. The Los Angeles Regional Water Quality Control Board (LARWQCB) has indicated that groundwater below the project site is significantly impacted by hydrocarbons including up to 14 feet of non-aqueous liquid phase petroleum hydrocarbons on the groundwater surface above the shallow water table. The data presented by the LARWQCB indicate that there may be a hydrocarbon source area at or in the near vicinity of the fifth train project site. (Ex. 200, p. 4.9-21.)

Watson indicates that during the project geotechnical assessment activities, soil samples will be collected in areas where ground disturbance is planned within the project footprint, and analyzed to investigate the subsurface soils for petroleum hydrocarbon impacts. During the project geotechnical assessment and during construction activities, any excavated soil would be managed pursuant to applicable BP Carson Refinery soils management plans, and the health and safety of site personnel will be managed in accordance with the site-specific health and safety plan and applicable refinery procedures. Watson has indicated that any contaminated materials encountered during construction would be temporarily stockpiled on-site and disposed of off-site in accordance with all applicable LORS. Prior to excavation at the site, a pre-assessment would be conducted to determine if any excavation will need to follow regulations (40 CFR 63 Subpart GGGGG and Air Quality Management District Rule 116) for air emission from excavated soil contaminated with volatile organic compounds. Workers would be instructed on proper BMP management as well as common sense practices to minimize the risk of exposure to soil contaminants. This includes instruction to recognize evidence of contaminated soil and avoiding handling of potentially contaminated material without proper training. (*Id*.)

A Phase II ESA would provide more detailed information regarding the extent and location of any existing soil and/or groundwater contamination. Watson would then need to prepare a site-specific Soil Management Plan (SMP) which would address soil and groundwater contamination and the level of associated risks to workers and nearby environments. The SMP should include an ecological risk screening to help guide decisions on the levels of soil contamination that require removal or remediation to protect the environment including the Dominguez Channel adjacent to the site and San Pedro Bay. The SMP would provide instructions for soil handling, stockpiling, and dust and erosion control during construction including BMPs to specifically address impacted soils. Please refer to the **Waste Management** section of this Decision

for more detailed discussion of requirements for remediation to mitigate potentially significant adverse impacts. (Ex. 200, p. 4.9-22.)

During construction, there is also the potential for hazardous chemicals to be released from construction equipment or materials storage areas which could cause potentially significant soil or groundwater contamination impacts. Watson identified a number of BMPs related to construction equipment in the draft DESCP including: use of a temporary fueling area for construction equipment and use of drip pans or absorbent pads in maintenance areas. Watson indicated that hazardous liquids would be stored in a separate enclosed building within one or more containment facilities. The diesel storage tank will be double walled with the capacity to store 100 percent of the tank volume to prevent a release in the event of a leak. (Ex. 200, p. 4.9-23.)

We find that these measures will be effective in preventing migration of existing soil and groundwater contamination and limiting the potential for a release of hazardous materials during construction of the proposed Watson Project. Condition of Certification **SOIL&WATER-2** requires Watson to prepare and implement a SWPPP for construction activity as specified by the RWQCB. The Construction SWPPP would provide details on BMPs for soil stockpile management, construction equipment maintenance and fueling, and hazardous materials storage.

c. Stormwater

The project site is located in a highly developed industrial and commercial area within the city of Carson. The project site is located within the existing Watson Cogeneration facility and is covered with pavement and gravel. Currently, stormwater runoff from the existing Watson Cogeneration facility including the Watson Project site flows to the existing on-site storm drain system which discharges to Dominguez Channel east of the existing Watson Cogeneration facility. (*Id*.)

The construction of the Watson Project will change the drainage patterns at the existing site. The fifth train power block is approximately 1.8 acres and would be isolated from the remainder of the existing site by the construction of an earthen berm. The Watson Project would utilize both the existing stormwater drainage system and existing oily water treatment system during construction. Stormwater runoff from the fifth train power block area would be captured in a number of catch basins and subsequently routed to the BP Carson Refinery's oily water

treatment system. Runoff from the remainder of the power block area, as well as the maintenance shop and transformer areas included in the Watson Project, approximately 0.7 acres, would continue to discharge to the existing storm drain system during and following construction. (Ex. 200, pp. 4.9-23 – 4.9-24.)

Watson has indicated that there is sufficient capacity in the BP Carson Refinery's existing oily water treatment system to accept the stormwater runoff generated from the Watson Project. It is estimated that 10-year and 100-year peak runoff from the project site would increase by approximately 2.5 percent as compared to existing conditions. Runoff discharged to the Dominguez Channel would be reduced because runoff from the fifth train power block area would be discharged to the oily water system rather than the storm drain system. This would prevent flooding related impacts downstream of the project site due to an increase in stormwater runoff. (Ex. 200, p. 4.9-24.)

The construction laydown area will not require any land disturbance and the drainage pattern will not be modified from existing during or following construction. Runoff currently flows to catch basins in the parking lot area which are connected to a storm drain system that discharges to the Dominguez Channel. Stormwater runoff from the laydown area would not increase or cause any flood related impacts along the Dominguez Channel. (*Id*.)

Watson prepared a preliminary draft DESCP in response to Energy Commission staff's comments, providing conceptual plans for stormwater management measures during the construction and operation phases of the project. The final DESCP will need to identify specific locations for proposed BMPs and provide calculations to demonstrate that numerically sized BMPs meet California Stormwater Quality Association (CASQA) and Los Angeles County standards. (*Id*.)

We find that Watson has a BMP plan that will avoid significant adverse impacts related to stormwater drainage and water quality during construction. Condition of Certification **SOIL&WATER-1** requires Watson to prepare a Final DESCP for both construction and operations. The LARWQCB, in implementing federal law, requires that Watson prepare and implement a SWPPP for construction activity; this is reflected in Condition of Certification **SOIL&WATER-2**. Additionally, Condition of Certification **SOIL&WATER-3** requires Watson to prepare and submit for approval a Standard Urban Stormwater Mitigation Plan (SUSMP) as required under Los Angeles County's MS4 National Pollutant Discharge Elimination System (NPDES) Permit. The SUSMP will identify pollutants of

concern and identify the means to minimize the discharge of these pollutants from the project site including the use of numerical design standards for water quality treatment BMPs.

We therefore find that through the proper sequencing of construction activities and the application of BMPs, impacts to soil and water resources from stormwater drainage during construction will be reduced to a less than significant level.

d. Construction water supply

Water will be required for dust suppression and miscellaneous activities during construction. The existing reclaimed water system at the BP Carson Refinery will be used to provide construction water. Potable water for the construction workforce will be provided from the existing Watson Cogeneration facility from a bottled water purveyor.

Although the Applicant estimated that the total water use would be 20,000 gallons per month during the 15-month construction period for a total of 300,000 gallons, Staff expressed concern that these figures may be low. Twenty thousand gallons per month equates to about 115 gallons per hour which may not be sufficient to control dust at the site and provide moisture for soil compaction during major grading operations. Energy Commission staff believes that up to 2,000 gallons per hour may be required to control dust emissions during active grading with moderate to high winds.

Regardless, the evidence shows that there is adequate water supply available at the existing Watson Cogeneration facility to suppress dust during construction. Watson should be prepared to deliver additional water as necessary for dust control and other construction needs. (Ex. 200, p. 4.9-25.)

With the use of reclaimed water from the existing on-site facilities for dust suppression and miscellaneous construction activities, water usage during construction will have a less than significant impact on the existing water supply resources.

e. Wastewater

Construction wastewater generated on-site would include equipment washdown water, water from pressure testing the service utilities, and concrete washout

wastewater. Wastewater would be discharged to BP Carson Refinery's oily water treatment system or to an on-site facility for drying, as appropriate. These facilities would provide sufficient capacity to handle anticipated amounts of wastewater. (Ex. 200, p. 4.9-26.)

Sanitary facilities would consist of portable chemical toilets and a holding tank at the construction office building. It is estimated that during construction, the project would generate approximately 450 gallons of sanitary waste per week.

Improper handling or containment of construction wastewater could cause a broader dispersion of contaminants to soil, groundwater, or surface water. The final DESCP and SWPPP should address the total estimated wastewater to be generated during construction, both for discharge to the existing oily water system and for the concrete washout containment. During construction, wastewater (including any groundwater generated by dewatering activities) would be managed with BMPs identified and implemented in accordance with the DESCP consistent with Condition of Certification **SOIL&WATER-1** and the construction SWPPP required by the LARWQCB, consistent with Condition of Certification **SOIL&WATER-2**. (Ex. 200, p. 4.9-26.) We conclude that no significant impacts from construction wastewater will occur provided that all construction wastewater is handled in accordance with BMPs described in the project's construction SWPPP and DESCP.

2. Operational Impacts and Mitigation

Operation of the Watson Project could lead to potentially significant impacts to soil, stormwater runoff, water quality, and water supply. Of particular concern is the potential for the project's use of groundwater to impact area water supplies. Wastewater discharge could cause impacts to downstream receiving waters if the quantity or quality of wastewater discharged exceeded the limitations of the wastewater treatment system.

a. Soil

During operation of the project, the site would be covered with impervious surfaces and gravel leaving no soil exposed. Hazardous materials used in operations of the project will be stored at the existing Watson Cogeneration facility in storage areas equipped with curbs or containment dikes to contain spills or leaks. As a result, impacts to soils related to erosion or hazardous materials handling during operations will not be significant.

Condition of Certification **SOIL&WATER-1** requires the implementation and maintenance of drainage and erosion control measures during operations according to plans as specified in the DESCP. Condition of Certification **SOIL&WATER-4** requires the preparation and implementation of an Industrial SWPPP as specified by the LARWQCB. The Industrial SWPPP would include BMPs to protect stormwater from impacts related to soil erosion and hazardous materials release. (Ex. 200, p. 4.9-27.) With implementation and maintenance of the BMPs detailed in the required plans, we find there would be no significant impacts to soil resources during operation of the project.

b. Stormwater

The proposed stormwater management plans were examined to determine if the Watson Project could cause significant flooding or water quality impacts for stormwater discharged from the site. Significant flooding impacts could occur along the Dominguez Channel downstream of the site if runoff peak flow rates or volumes discharged from the Watson Project increased as compared to existing conditions. Water quality impacts could occur if hazardous materials or eroded sediments were released in runoff discharged from the site.

The Watson Project site will be paved with asphalt, concrete, and gravel. Stormwater runoff from the 1.8 acre fifth train power block would be routed to the BP Carson Refinery's oily water treatment system and ultimately discharged to Los Angeles County Sanitation District's Wastewater Treatment Plant. Stormwater runoff from the remaining component areas (approximately 0.7 acres) of the Watson Project site would be routed to the existing storm drain system and discharged to the Dominguez Channel. (Ex. 200, p. 4.9-27.)

Applicant provided runoff calculations for pre- and post-development conditions including the fifth train power block. The evidence shows that stormwater runoff discharged to the Dominguez Channel from the existing Watson Cogeneration facility would actually decrease as a result of the Watson Project because the proposed project would remove 1.8 acres from the area contributing runoff to the existing storm drain system. (Ex. 200, pp. 4.9-27-4.9-28.) We therefore find that the Watson Project would not create significant flooding related impacts along the Dominguez Channel.

A Will Serve letter from BP Carson Refinery indicates that the oily water treatment system has sufficient capacity to accept and treat the additional stormwater runoff from the fifth train area. The refinery's oily water treatment

system includes storage tanks and reservoirs with a total storage capacity of about 15.4 million cubic feet. The 100-year stormwater runoff volume (42,890 cubic feet) is about 0.28 percent of the total storage capacity in the refinery's oily water treatment system. (Ex. 200, p. 4.9-28.) We find that the refinery's oily water treatment system would have adequate capacity to handle runoff from the fifth train power block at the Watson Project.

To avoid hazardous materials releases, secondary containment structures would be built around the oil-filled equipment to prevent dispersion. Hazardous materials would be stored at the existing Watson Cogeneration facility in storage areas equipped with curbs or containment dikes to contain spills or leaks. Solid wastes and small amounts of hazardous waste that are generated at the project would be properly accounted for, tracked, handled, and disposed of off-site using licensed transporters and disposal facilities. (*Id*.) Based on the proposed BMPs for hazardous materials management, we find that the Watson Project would not result in significant water quality impacts related to a release of hazardous materials.

Currently, the existing Watson Cogeneration facility uses a visual inspection program prior to discharge into the Dominguez Channel. During storm conditions, personnel from the existing Watson Cogeneration facility inspect the accumulated water in the storm drain. If the water appears clean and clear, the stormwater is discharged to the Dominguez Channel. If the water quality is questionable, a vacuum truck is used to remove the water from the sewer box until it is running clear. (Ex. 200, p. 4.9-29.)

However, sample analysis results from January, April and November 2007, and January 2008 indicate that stormwater discharged from the existing Watson Cogeneration facility had levels of metals (chromium, lead, and zinc) above California MCLs, low-level detections of several polynuclear aromatic hydrocarbons (PAHs), and elevated levels of fecal coliform and e-coli. All samples contained levels of zinc (1.3 to 3.9 mg/l) above the U.S. EPA Benchmark Value for stormwater (0.117 mg/l). Two of the four samples contained levels of copper (0.09 to 0.093 mg/l) above the stormwater benchmark (0.0636 mg/l). One sample contained pyrene at 0.0068 mg/l, just below the benchmark of 0.01 mg/l. The Dominguez Channel Estuary is listed as an impaired water body due to high levels of a number of contaminants including chromium, lead, zinc, and PAHs. (*Id*.)

The MS4 Permit requires all new development and redevelopment projects to minimize the discharge of pollutants of concern. The city of Carson has requested that Watson voluntarily implement water quality treatment BMPs that address the entire existing Watson Cogeneration facility. The LARWQCB is expected to adopt Total Maximum Daily Loads (TMDLs) for the Dominguez Channel to address numerous pollutants of concern. Once the TMDLs are adopted, the existing Watson Cogeneration facility and BP Carson Refinery will be required to install water quality treatment BMPs to address the discharge of pollutants of concern under the refinery's Industrial Stormwater NPDES permit. Given the impending requirement for treatment, conditions of certification set forth herein require that Watson implement water quality treatment for the entire existing Watson Cogeneration facility as part of the Watson Project. (Ex. 200, p. 4.9-30.)

Conditions of Certification **SOIL&WATER-1**, **-3**, and **-4** require the project owner to prepare plans for implementing, monitoring and maintaining BMPs appropriate for the operating phase in the form of a DESCP, SUSMP, and SWPPP for Industrial activity. The goal of the DESCP is to provide detailed storm drainage and erosion control plans and to identify and implement appropriate BMPs to limit stormwater and erosion related impacts. The goal of the Industrial SWPPP is to identify potential sources of contaminants that could be present during project operations and to ensure that adequate BMPs for preventing pollution of soil and water resources are incorporated into the project's final design and implemented. Condition of Certification **SOIL&WATER-3** requires Watson to prepare and submit for approval a SUSMP as required under Los Angeles County's MS4 Permit. The SUSMP would identify pollutants of concern and the means to minimize the discharge of these pollutants from the project site using numerically sized BMPs. Compliance with Conditions of Certifications **SOIL&WATER-2**, **-3**, and **-4** will ensure there are no significant impacts or conveyance of pollutants to soil and water resources down-gradient of the project site.

c. Surface Water Flooding

The Watson Project site is designated as a "C" flood zone for flood management indicating that the project site is outside of the designated 100-year floodplain and the potential for flooding is low. The proposed project would not alter drainage patterns or increase flow rates in Dominguez Channel. (Ex. 200, p. 4.9-30.) We therefore find that the operation of the project would not adversely affect surface waters or increase flooding in the vicinity of the project site.

d. Project Operations Water Supply

Watson proposes to use the Watson Cogeneration facility's freshwater supply for the existing four train plant to supply the combined five trains. The Applicant proposed maintaining annual water supply at levels of up to 4,609 AFY based on the previous 11 years of operation (2000-2010) of the Watson Cogeneration facility. The Applicant also stated that it would utilize reclaimed water if combined Watson Cogeneration and Watson Project water use increased above the cap to allow the combined units to provide additional steam and high-pressure water to the BP Carson Refinery. (Ex. 200, p. 4.9-31.)

i) Baseline Water Supply

Annual water usage for the existing four-train Watson Cogeneration facility is presented below in **Soil & Water Table 1**.

Soil & Water Table 1
Average Annual Water Use –
Watson Cogeneration Facility (four trains)

Year	Average Daily Water Use (mgd)	Annual Water Use (acre-feet)
2000	4.0	4,481
2001	4.4	4,929
2002	4.5	5,041
2003	4.5	5,041
2004	4.2	4,705
2005	4.3	4,817
2006	4.0	4,481
2007	4.1	4,593
2008	3.8	4,257
2009	3.8	4,257
2010	3.7	4,145
11-year average (2000 – 2010)	4.12	4,609
5-year average (2006 – 2010)	3.88	4,346
3-year average (2008 – 2010)	3.77	4,219
1986 Staff Assessment	3.71	4,157

(Ex. 200, p. 4.9-34.)

The parties were in dispute over the appropriate baseline quantity. The Applicant identified the average annual raw freshwater use over the previous 11 years (2000-2010) of 4,609 AFY as the baseline water use for the Watson Cogeneration facility. However, Staff noted that, as seen in **Soil & Water Table 1**, average annual raw water use over the more recent three- and five-year periods (4,219 and 4,346 AFY) was significantly lower than earlier in the decade. CEQA guidelines (Section 15162) indicate that review of proposed projects with a previous Environmental Impact Report (i.e. the CEQA equivalent Energy Commission Final Decision) should take into account the impacts considered in the original EIR. Thus, anticipated impacts for a currently proposed project should be compared to impacts analyzed in the original CEQA document. The Energy Commission staff analysis for the Watson Cogeneration facility published in March 1986, considered the use of 2,577 gpm or about 4,157 AFY of freshwater for the Watson Cogeneration plant. Thus, the Applicant's estimate of current baseline water supply at Watson Cogeneration is about 11 percent higher than the baseline water supply considered in the original licensing proceeding for the Watson Cogeneration facility. (Ex. 200, p. 4.9-33.)

In Resolution 2010-0039, the State Water Resources Control Board recently determined that the Sacramento-San Joaquin Delta is in ecological crisis and that recent Delta flows have been inadequate to support aquatic habitat for endangered native fish species. The Delta Stewardship Council's Draft Delta Plan concluded that California's total water supply is oversubscribed. (*Id*.)

In addition, the Colorado River has been experiencing an historic drought. The U.S. Bureau of Reclamation's June 2011, Colorado River Basin Water Supply and Demand Study indicates that water supplies on the Colorado River are anticipated to decrease by about nine percent over the next 50 years due to climate change with a projected increase in both drought frequency and duration. (Ex. 200, p.4.9-36.)

Energy Commission staff therefore recommended that the baseline water use be set at 4,219 AFY based on the most recent three years of operation at the Watson Cogeneration facility. Applicant maintained that 4,609 AFY should be both the baseline quantity and the cap for Watson Project water consumption, based upon the previous eleven years of operation.

There is no hard and fast rule governing how to determine the baseline quantity of water consumption. What is clear, however, is that arbitrarily choosing a period of higher-than-average water consumption to represent the baseline is not

reasonable. The chosen baseline must reflect the actual conditions in existence at the time. This issue was addressed by a California court in *Save our Peninsula Committee v. Monterey County Board of Supervisors*, (2001) (87 Cal.App.4th 99). At issue was how to determine a baseline for water consumption at the subject property, where records of water consumption for a number of prior years were available. The court said:

> If an EIR presents alternative methodologies for determining a baseline condition, however, we believe CEQA requires that each alternative be supported by reasoned analysis and evidence in the record so that the decision of the agency is an informed one. (87 Cal.App.4th at 120.)

The Committee heard evidence relevant to determination of the baseline at the Evidentiary Hearing on November 1, 2011. Staff presented the testimony of Matthew Layton, Staff's expert witness on water supply. Mr. Layton testified that Staff had reviewed the facility's water consumption for the entire 20 years of its operation, and had also determined the average consumption for the past four years of operation. That review produced the figure of 4,425 AFY, which, according to Mr. Layton, would constitute an appropriate baseline. Applicant indicated its willingness to accept that figure as the baseline. (11-1-2011 RT 25:18 – 29:21.)

We find that the approach described by Mr. Layton in his testimony at the Evidentiary Hearing is reasonable, and that 4,425 AFY is an appropriate baseline water consumption figure. The 20-year figure, in particular, impresses because it takes into account water consumption at the project for nearly all of its operational life. No convincing evidence supporting the apparently arbitrary selection of an 11-year period by Applicant was presented. Implementation of Condition of Certification **SOIL&WATER-5** would cap raw freshwater consumption for all five trains of the project at 4,425 AFY.

The evidence also shows that 4,735 AFY of reclaimed water is currently supplied to the BP Carson Refinery by the West Basin Municipal Water District (WBMWD). The refinery uses about 7,000 AFY of freshwater in addition to that reclaimed water. Condition of Certification **SOIL&WATER-5** requires that any water consumption by the Watson Cogeneration Project above the 4,425 AFY cap be reclaimed water. However, to ensure that Watson cannot circumvent the 4,425 AFY cap by using some of BP Carson's reclaimed water, thereby causing the refinery to increase its freshwater consumption to compensate for the loss of reclaimed water, Condition of Certification **SOIL&WATER-5** also requires that

the refinery use at least 4,735 AFY of reclaimed water before supplying reclaimed water to Watson. Verification will be achieved through a requirement that reclaimed water supplied to the BP Carson Refinery, the Watson Project, and to Watson Cogeneration, be metered and reported.

ii) Water Supply Efficiency

The total proposed water supply for the Watson Project would be significantly greater than for a combined cycle generating facility of a similar capacity that primarily generates electricity because the primary purpose for the project is to provide steam to the BP Carson Refinery. The average annual water demand for the fifth train at the Watson Project would be approximately 2,724 acre-feet including approximately 2,285 AFY of treated process water and 439 AFY of cooling tower makeup water. Although this annual water demand is about 32 AFY/MW, which is significantly higher than a typical wet cooled, combined cycle power plant in California, about 2,190 AFY of the total water supplied to the Watson Project would be delivered to the BP Carson Refinery as steam and high pressure water supplies. The water use efficiency for Watson Project generation, (i.e., total water supply less the steam and water) supplied to the BP Carson Refinery, would be about 534 AFY or about 6.3 AFY/MW, which is typical for wet cooled combined cycle power plants in California. (Ex. 200, p. 4.9-41.)

To help demonstrate that the project is efficiently utilizing the water supplied to the project, delivery of steam and high-pressure water to BP Carson Refinery will be monitored with a goal of delivering a minimum of 95.8 percent of all process water supplied to the fifth train to the BP Carson Refinery as steam or high-pressure water. Conditions of Certification **SOIL&WATER-6** and **-9** require installation and monitoring of metering devices on the process supply lines to the Watson Project and the steam and high-pressure water lines that deliver water to the BP Carson Refinery and to the project. All metering devices shall be operational for the life of the project. An annual summary of water use and delivery of steam and water to BP Carson Refinery shall be submitted to the Compliance Project Manager in the annual compliance report.

iii) Reclaimed Water – Impacts and Conditions

The Watson Project would use reclaimed water from WBMWD if water use at the combined Watson Project and Watson Cogeneration facilities exceeds the cap. The proposed reclaimed water supply is wastewater treatment plant effluent from WBMWD's Carson Regional Water Recycling Facility that has received tertiary

treatment to Title 22 standards, micro-filtration and either nitrification or single pass reverse-osmosis (RO) treatment. Unused wastewater in the region is discharged to the Pacific Ocean. (Ex. 200, p. 4.9-42.)

Use of tertiary treated nitrified or RO reclaimed water could lead to significant adverse impacts to municipal water supplies if the reclaimed water cross-contaminates the municipal supply pipelines. To address the potential for impacts to municipal supplies, a dual plumbing plan shall be prepared in accordance with Title 17 requirements. Condition of Certification **SOIL&WATER-7** requires Watson to receive approval from the California Department of Public Health for a dual plumbing plan for the use of tertiary treated recycled water at the Watson Project site.

Title 22 is intended to address the potential for public health impacts related the use of recycled water potentially contaminated by pathogens within the project's cooling towers. The WBMWD will need to update two Engineer's Reports to expand the Carson Regional Water Recycling Facility to provide additional recycled water for the project, one for the Carson Regional Water Recycling Facility and one for the BP Carson Refinery. Condition of Certification **SOIL&WATER-8** requires Watson to submit documentation of the approval from California Department of Public Health and the Los Angeles RWQCB for the Engineer's Reports covering the use of recycled water at the project site including an updated Water Recycling Requirements permit.

Provided that the Watson Project adheres to the standards for the use of tertiary treated recycled water, we find that there will be no significant impacts related to the project's use of reclaimed wastewater.

e. Operations Wastewater

The primary source of wastewater generated by the Watson Project during operations would be cooling tower blowdown. The wastewater would include both industrial wastewater and stormwater runoff from the fifth train power block area. These wastewater streams would be directed to the BP Carson Refinery's oily water treatment system and ultimately discharged to Los Angeles County Sanitation District's wastewater treatment plant. The project would increase the wastewater flow rate from the existing Watson Cogeneration facility (not including stormwater) by approximately 90 gpm on average from approximately 0.81 mgd to 0.94 mgd. Maximum wastewater discharge would increase by about 139 gpm from approximately 1.21 mgd to 1.41 mgd. (Ex. 200, p. 4.9-43.)

The estimated 100-year, twenty-four hour peak stormwater discharge to the BP Carson Refinery's oily water treatment system from the Watson Project is approximately 9.1 cfs or 4,100 gpm. The total volume generated by the 100-year event is estimated to be 42,900 cubic feet or 320,840 gallons. (Ex. 200, p. 4.9-44.)

The BP Carson Refinery has provided a letter to the Watson Cogeneration facility acknowledging that the oily water treatment system has sufficient capacity to accept the waste stream (including stormwater runoff) from the project while meeting its permitted discharge requirements.

We find that there would be sufficient on-site storage and treatment capacity within the BP Carson Refinery's existing oily water treatment system to handle the industrial wastewater and stormwater generated by the proposed project. We further find that by meeting the requirements of the existing industrial waste discharge requirements set forth for the BP Carson Refinery, the impact of the proposed project on existing wastewater treatment systems and water quality downstream of the site would be less than significant.

3. Cumulative impacts and mitigation

Cumulative impacts consist of impacts that may occur as a result of the proposed project in combination with impacts from other past, present and reasonably foreseeable future projects. Cumulative impacts can result from individually minor, but collectively significant actions taking place over time.

a. Surface Water/Stormwater

The Watson Project is expected to decrease flood flows and improve water quality within the Dominguez Channel and no significant cumulative impacts to surface water resources are expected.

b. Groundwater

By replacing existing groundwater supply at the BP Carson Refinery with reclaimed water supply, groundwater pumping in the basin is not expected to increase significantly. No significant cumulative impacts related to groundwater quantity or quality are anticipated as a result of the Watson Project.

c. Water Supply

The use of the existing freshwater supplies at or below baseline rates as determined in this Decision will prevent an increase in the demands on freshwater supplies in the project area including both surface water diversions from the Colorado River and State Water Project and groundwater pumped at the project site and at municipal wells in the Carson area. Provided that freshwater use does not increase above 4,425 AFY no significant cumulative impacts related to water supply are expected as a result of the Watson Project.

d. Wastewater

While wastewater discharge would increase as a result of the Watson Project, total discharge from the BP Carson Refinery's oily water treatment system would remain within the limitation set forth in the Refinery's Industrial Wastewater Discharge Permit. No significant cumulative impacts related to wastewater discharge are anticipated as a result of the Watson Project.

FINDINGS OF FACT

We find and conclude as follows:

1. With the implementation of the mitigation measures contained in the conditions of certification, wind- and water-induced erosion resulting from the temporary and permanent disturbances associated with construction and operation of the Watson Project will be less than significant.

2. Best Management Practices will be used to control erosion and the discharge of stormwater off-site. These measures will ensure no significant adverse impacts occur to area soils.

3. The Watson Project would not exacerbate flood conditions in the vicinity of the project.

4. The fresh water supply for the project will not cause significant adverse environmental impacts on current or future users of the water supply. Moreover, the project's use of water substantially complies with state water policy and Energy Commission policy.

5. With the implementation of the proposed mitigation measures contained in the conditions of certification, the Watson Project's construction and

operation activities will not cause a substantial or potentially substantial adverse change in the quantity or groundwater or surface water.

6. The conditions of certification contained in this Decision establish appropriate, predetermined performance standards for mitigation measures in accord with California environmental statutes and CEQA case law.

7. The conditions of certification, below, are adequate to ensure that construction and operation of the Watson Project will not create unmitigated project-specific or cumulative significant impacts to the matters addressed in the technical discipline of **Soils And Water Resources**.

CONCLUSION OF LAW

We therefore conclude that the project will conform to all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

SOIL&WATER-1: Prior to site mobilization, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion, and Sedimentation Control Plan (DESCP) that ensures protection of water quality and soil resources of the project site for both the construction and operational phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements (including MS4 Permit requirements), and identify all monitoring and maintenance activities. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and may incorporate by reference any SWPPP developed in conjunction with any NPDES permit.

The DESCP shall contain elements 1 through 9 below outlining site management activities and erosion- and sediment-control BMPs to be implemented during site mobilization, excavation, construction, and post construction (operating) activities.

1. **Vicinity Map** – A map(s) at a minimum scale 1”=100’ shall be provided indicating the location of all project elements (construction site, laydown area, pipelines) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

2. **Site Delineation** – All areas subject to soil disturbance for the Watson Project (project site, laydown and parking area, , and any other project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.
3. **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. It shall indicate the proximity of those features to the Watson site construction, laydown and parking areas.
4. **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale of 1”=100’ showing existing, interim, and proposed drainage swales and drainage systems and drainage-area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet.
5. **Narrative of Project Site Drainage** – The DESCP shall include a narrative of the drainage measures necessary to protect the site and potentially affected soil and water resources within the drainage downstream of the site. The narrative shall include the summary pages from the hydraulic analysis prepared by a professional engineer and erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage features. The hydraulic analysis shall be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the Watson site and laydown areas.
6. **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.
7. **Clearing and Grading Narrative** – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements (project site, laydown area, transmission and pipeline corridors, roadways, and bridges) whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.

8. **Best Management Practices Plan** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). The DESCP shall identify an appropriate water quality treatment BMP to target sediment, metals, hydrocarbons, and PAHs numerically sized to meet the requirements of the LARWQCB.

9. **Best Management Practices Narrative** – The DESCP shall show the location (as identified in 8 above), timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during all project element (site, pipelines) excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information will be available.

Verification: No later than 90 days prior to start of site mobilization, the project owner shall submit a copy of the DESCP for construction activity and operations to the city of Carson and the Los Angeles Regional Water Quality Control Board (LA RWQCB) for review and comment. No later than 60 days prior to start of site mobilization, the project owner shall submit the DESCP with the city's and LA RWQCB's comments to the CPM for review and approval. The CPM shall consider comments by the city and LA RWQCB before approval of the DESCP. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCP shall clearly show approval by the chief building official. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control measures and the results of monitoring and maintenance activities. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

SOIL&WATER-2: The project owner shall comply with the requirements of the general NPDES permit for discharge of stormwater associated with construction activity. The project owner shall develop and implement a construction stormwater pollution prevention plan (construction SWPPP) for the construction of the Watson site, laydown area, and all linear facilities.

Verification: The project owner shall submit to the compliance project manager (CPM) a copy of the construction SWPPP prior to site mobilization and retain a copy on site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the Los Angeles Regional Water Quality Control Board regarding the NPDES permit for the discharge of

stormwater associated with construction activity within 10 days of its receipt or submittal. Copies of correspondence shall include the notice of intent sent to the State Water Resources Control Board, and the board's confirmation letter indicating receipt and acceptance of the notice of intent.

SOIL&WATER-3: The project owner shall submit to the CPM a copy of the Standard Urban Stormwater Mitigation Plan (SUSMP) as required under Los Angeles County's Municipal Stormwater NPDES Permit (MS4 Permit) prior to commencement of construction of the Watson Project. The SUSMP shall identify and implement an appropriate water quality treatment Best Management Practice targeted to the pollutants of concern at the site and receiving water and sized according the numerical sizing guidelines included in the MS4 Permit.

Verification: The project owner shall submit to the compliance project manager (CPM) a copy of SUSMP prior to site mobilization. The project owner shall submit copies to the CPM of all correspondence between the project owner, the Los Angeles Regional Water Quality Control Board, and the city of Carson regarding the SUSMP for the discharge of stormwater from the Watson Cogeneration facility within 10 days of its receipt or submittal. Copies of correspondence shall include all comments on the SUSMP. The project owner shall revise the SUSMP to address all comments from the Los Angeles Regional Water Quality Control Board and the city of Carson and submit the final SUSMP for approval by the CPM prior to operation.

SOIL&WATER-4: The project owner shall comply with the requirements of the general NPDES permit for discharges of stormwater associated with industrial activity. The project owner shall develop and implement an industrial stormwater pollution prevention plan for the operation of the Watson Project.

Verification: The project owner shall submit to the CPM a copy of the industrial SWPPP for operation of the Watson Project prior to commercial operation, and shall retain a copy on site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the LA RWQCB regarding the general NPDES permit for discharge of stormwater associated with industrial activity within 10 days of its receipt or submittal. Copies of correspondence shall include the Notice of Intent sent by the project owner to the State Water Resources Control Board.

SOIL&WATER-5: Total use of raw freshwater by the Watson Project and the Watson Cogeneration facility (all five trains), including raw groundwater pumped from wells at the BP Carson Refinery and raw potable water supplied by the California Water Services Company, shall not exceed 4,425 acre-feet per year (AFY) (calendar year) for the life of the project. All water used above the cap of 4,425 AFY (calendar year) shall be reclaimed water.

Prior to commercial operation of the Watson Project, the project owner shall install and maintain metering devices as part of the project water supply and distribution system, to monitor and record in gallons per month the total volumes of water supplied to the project from each water source (nitrified reclaimed water, reverse-osmosis, reclaimed water, raw municipal water, condensate return, and raw groundwater). The metering devices shall be operational for the life of the project.

The project owner shall prepare an Annual Water Use Summary, which will include the monthly range and monthly average of daily non-potable water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. Potable water use on-site shall be recorded on a monthly basis. For subsequent years, the Annual Water Use Summary shall also include the yearly range and yearly average water use by the project. The annual summary shall be submitted to the CPM as part of the annual compliance report.

Prior to using water in excess of the cap, the reclaimed water supply must be online and plumbed to supply the Watson Project and the Watson Cogeneration facility (all five trains). Reclaimed water for Watson Cogeneration and the Watson Project water use above the cap shall be above and beyond that 4,735 AFY (calendar year) of reclaimed water already being supplied to the BP Refinery. Reclaimed water supplied to the BP Refinery, to the Watson Project, and to Watson Cogeneration shall be metered and reported.

Verification: At least 30 days prior to commercial operation of the Watson Project, the project owner shall submit documentation to the CPM that metering devices for the project have been installed on each water source (raw municipal water and raw groundwater).

At least 30 days prior to the project owner using water in excess of the cap, the project owner shall submit documentation to the CPM indicating that the reclaimed water supply project is completed and plumbed to deliver reclaimed water to the Watson Cogeneration facility/Watson Project. At least 30 days prior to delivery of reclaimed water, the project owner shall submit documentation to the CPM that metering devices have been installed on each source or reclaimed water (nitrified reclaimed water and single-pass reverse-osmosis reclaimed water). At least 30 days prior to the project owner using water in excess of the cap, the project owner shall provide copies of the reclaimed water supply contract(s) between the project, Watson Cogeneration or BP Refinery and a reclaimed water provider for the project.

The project owner shall submit the Water Use Summary to the CPM in the annual compliance report. The summary report shall distinguish between recorded water use of nitrified reclaimed water, reverse-osmosis reclaimed water, non-condensate supplements to the condensate return, municipal water, and groundwater. The project owner shall provide a report on the annual servicing, testing, and calibration of the metering devices.

SOIL&WATER-6: Prior to commercial operation, the project owner shall install and maintain metering devices as part of the project water supply and distribution system, to monitor and record in gallons per month the total volumes of process water supplied to the fifth train (Lines C and D - AFC Figure 5.5-1, Water Balance Flow Diagram) and volumes of water supplied by the fifth train to Watson Cogeneration Company's steam header and high pressure water system (Lines J and M - AFC Figure 5.5-1, Water Balance Flow Diagram). The metering devices shall be operational for the life of the project. The project owner shall attempt in good faith to ensure that no less than 95 percent of the total volume of process water supplied to the fifth train shall be delivered to the Watson Cogeneration Company's steam header and/or high-pressure water system on an annual basis. This percentage is a voluntary, non-binding goal and the project owner shall not be deemed out-of-compliance with this condition for failure to achieve this percentage, provided the project owner: 1) installs and maintains the metering devices described above; 2) attempts in good faith to achieve the non-binding percentage goal described above; and 3) the information set forth in the verification below.

Verification: At least 30 days prior to commercial operation of the project, the project owner shall submit documentation to the California Energy Commission (Energy Commission) Compliance Project Manager (CPM) that metering devices for the project have been installed on lines C, D, J, and M (AFC Figure 5.5-1, Water Balance Flow Diagram) and are operational. The project owner shall prepare an annual water usage summary giving the monthly total and annual total of water delivered to the fifth train via lines C and D, and from the fifth train to the Watson Cogeneration Company's steam header and/or high-pressure water system. The summary shall also state the annual percentage of the volume of water supplied to the fifth train that is delivered to the Watson Cogeneration steam header and/or high-pressure water system. The percentage shall be computed as (J+M)/(C+D). The annual summary shall be included in the Annual Compliance Report. To the extent that the reported percentage for any year falls below the 95 percent goal, the project owner shall include a detailed discussion of the reasons for failing to achieve the goal and any steps that it has taken or intends to take to improve the percentage over the next year.

SOIL&WATER-7: The project owner shall submit a Dual Plumbing Plan for utilizing disinfected tertiary treated recycled water for plant process and cooling uses to the California Department of Public Health for review and comment and to the Chief Building Official (CBO) for review and approval. The Dual Plumbing Plan shall be prepared in accordance with Title 17 of the State Water Code. This plan may be consolidated with the Engineer's Report for the Production, Distribution and Use of Recycled Water as specified in **SOIL&WATER-8**. The project owner shall comply with any reporting and inspection requirements set forth

by the California Department of Public Health to fulfill statutory requirements.

Verification: At least 90 days prior to the project owner using reclaimed water, the project owner shall obtain CBO approval of the Dual Plumbing Plan. The project owner shall submit the Dual Plumbing Plan to the California Department of Public Health and the CBO for review and comment and shall address all comments as necessary to obtain CBO approval. The project owner shall submit copies to the CPM of all correspondence between the project owner and the California Department of Public Health related to the Dual Plumbing Plan within 10 days of its receipt or submittal. Copies of correspondence shall include the California Department of Public Health approval of the Dual Plumbing Plan.

SOIL&WATER-8: The project owner shall submit an Engineer's Report for the Production, Distribution and Use of Recycled Water at the Watson Project to the California Department of Public Health and Los Angeles Regional Water Quality Control Board for review and approval. The Engineer's Report for the Production, Distribution and Use of Recycled Water at the Watson Project shall be prepared in accordance with Titles 17 and 22 of the California Code of Regulations, the Health and Safety Code, and the Water Code. The project shall comply with any reporting and inspection requirements set forth by the California Department of Public Health and Los Angeles Regional Water Quality Control Board.

Verification: At least 30 days prior to the project owner using reclaimed water, the project owner (in conjunction with the reclaimed water provider shall submit an updated Water Recycling Requirements permit from the Los Angeles Regional Water Quality Control Board and approval of the Engineer's Report for the Production, Distribution and Use of Recycled Water at the Watson Project from the California Department of Public Health to the CPM. The project owner shall submit copies to the CPM of all correspondence between the project owner and the California Department of Public Health and/or the Los Angeles Regional Water Quality Control Board related to the Water Recycling Requirements permit or the Engineer's Report for the Production, Distribution and Use of Recycled Water at the Watson Project within 10 days of its receipt or submittal.

SOIL&WATER-9: Condensate return to the Watson Project from Watson Cogeneration or the BP Refinery shall not be augmented with additional of non-condensate water at Watson Cogeneration or the BP Carson Refinery unless such augmentation is fully metered and reported.

Verification: The project owner shall submit the Water Use Summary to the CPM in the annual compliance report. The project owner shall provide a report on the annual servicing, testing, and calibration of the metering devices.

SOIL&WATER-10: If, after the project receives reclaimed water, the water purveyor is unable to provide reclaimed water for the project's operation above the 4735 AFY reclaimed water use baseline, then the project owner may ask the CPM if they can use freshwater above the cap of 4425 AFY. In order to use freshwater above the cap of 4425 AFY, the project owner must file a request with the CPM and demonstrate to the CPM's satisfaction that the reclaimed water supply will not be available or will be interrupted due to no fault of the project owner. The use of freshwater above the cap shall be temporary, for no more than 90 days from the date the CPM authorizes the increase to allow the project owner to:

1. Take corrective action to secure the reclaimed water supply; or
2. Petition the Commission for an amendment to the license identifying and evaluating proposed water supply and use levels.

The request to the CPM must include an analysis of the excess water use above the freshwater cap (calculated on a 12-month rolling average), that identifies whether there are any significant adverse impacts, and proposed methods of mitigation, if needed. Significant adverse impacts that are identified shall be mitigated in accordance with the CPM approved plan.

Verification: For this condition, where the use of freshwater is expected to exceed the annual cap, as based on a forecast of the rolling 12-month rolling average of annual freshwater use, the owner shall provide the CPM:

1. Notification that the project will exceed the freshwater cap, a report that identifies how much water will be used beyond the cap, and the reasons for exceeding the cap;
2. Plans for corrective action to obtain or recover the reclaimed water, if any;
3. For CPM review and approval, an analysis of freshwater use in excess of the cap and a plan to mitigate significant adverse impacts, if needed; and
4. If necessary, a petition to amend the Decision's water supply and use limits.

C. CULTURAL RESOURCES

The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Resources Code, § 5024.1; Cal. Code Regs., tit. 14, § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. Since there is often a five-year lag between resource evaluation and the date that eligibility is decided, cultural resources specialists may use 45 years as a criterion for considering potential eligibility.[1]

The CEQA Guidelines provide a definition of a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR," or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social,

[1] The Office of Historic Preservation's *Instructions for Recording Historical Resources* (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." (Cal. Code Regs., tit. 14, §15064.5(a).) Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. (Pub. Resources Code, § 5024.1(d).)

Under the CEQA Guidelines, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, is associated with the lives of persons significant in our past (Criterion 2); or, that embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3); or, that has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). (Pub. Resources Code § 5024.1.) In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. (Cal. Code Regs., tit. 14, §4852(c); Public Resources Code sections 5020.1 (j) or 5024.1.) Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The proposed Watson Project area is located in the city of Carson, which is located in the South Bay/Harbor area of the county of Los Angeles, approximately 13 miles south of downtown Los Angeles. Carson is surrounded by the city of Los Angeles on the northwest, south, and southeast. The city of Compton is adjacent to the northeast and the city of Long Beach is adjacent to the east. Unincorporated areas of Los Angeles County are located on the north, southwest, and east. The city of Carson is approximately 19.2 square miles in area, making it the eighth largest city in land area within Los Angeles County. (Ex. 200, pp. 4.3-4 – 4.3-5.)

The project, as proposed, is an expansion of a steam and electrical generating (cogeneration) facility, which completes the facility's original design. The facility has been in operation for over 20 years. The original plant design included plans for a new unit at a later date and also allocated a physical land parcel for this expansion. (*Id*.)

The baseline environmental condition of the project site is one of an industrial development within an urban setting. On the premises of the existing Watson Cogeneration Facility, the location of the proposed project, there has been much ground disturbance through extensive development, dredging, and fill activities, in addition to added hardscape and pavement. Overall, the existing topography no longer resembles its original natural environment. The project site is surrounded by existing refineries and other industrial infrastructure; the entire project site is zoned by the city of Carson as Heavy Manufacturing. The project footprint is the former location of a crude oil reservoir, which can be identified on aerial photographs as early as 1928. Between 1987 and 1988, most of that reservoir was replaced with asphalt paving. The construction excavation planned for the 2.5-acre project site would not be deeper than 10 feet below existing grade. (*Id.*)

2. Cultural Resources

The inventorying of cultural resources within what Staff defines as the appropriate area for the analysis of a project's potential impacts is the first step in the assessment of whether the proposed project may cause a significant impact to a CRHR-eligible cultural resource and therefore have an adverse effect on the environment. The area that Staff considers when identifying and assessing impacts to historical resources, called the "area of analysis" for the project, is usually defined as the area within and surrounding the project site and associated linear facility corridors. The area varies in extent depending on whether the cultural resource is an archaeological, ethnographic, or built environment resource. (Ex. 200, p. 4.3-13.)

The project area of analysis is a composite geographic area that accommodates the analysis of each:

- For archaeological resources, the area of analysis was defined by Staff as the project site footprint, plus a buffer of 200 feet, and the project linear facilities routes, plus 50 feet to either side of the routes.

- For ethnographic resources, the area of analysis is expanded to take into account traditional use areas and traditional cultural properties which may be far-ranging, including views that contribute to the historical significance of the properties. The Native American Heritage Commission (NAHC) assists project cultural resources consultants and staff in identifying these resources, and consultation with Native Americans and other ethnic or community groups may contribute to defining the area of analysis. For the Watson Project, Staff identified no ethnographic resources.
- For built-environment resources, the area of analysis is minimally defined as one parcel deep from the project site footprint in urban areas, but in rural areas is expanded to include a half-mile buffer from the project site, and from any above-ground linear facilities, to encompass resources whose setting could be adversely affected by industrial development. The area of analysis for the built environment is that minimum.
- For a historic district or a cultural landscape, Staff defines the area of analysis based on the particulars of each siting case. No historic districts or cultural landscapes were identified for the Watson Project.

As used by Staff, the term “project areas” means the footprints of the several project components, including the plant site and the laydown and parking area. (Ex. 200, p. 4.3-13.)

The California Historical Resources Information System (CHRIS) is a federation of 11 independent cultural resources data repositories governed by the California State Office of Historic Preservation. These centers are located around the state, and each holds information about the cultural resources of several surrounding counties. Qualified cultural resources specialists obtain data on known resources from these centers and in turn submit new data from their ongoing research to the centers. (Ex. 200, p. 4.3-14.)

URS, the cultural resources consultant for the Watson Project, requested an expedited records search from the South Central Coastal Information Center (SCCIC) in Fullerton. The purpose of the search was to identify all previously recorded cultural resources and previous cultural resources investigations completed within a one-mile radius of the project areas. The records search included a review of the California Points of Historical Interests (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), the California State Historic Resources Inventory (HRI), and the city of Los Angeles Historic-Cultural Monuments listings. (*Id*.)

CHRIS Results

The Applicant's CHRIS search identified 45 reports of previous cultural resources investigations known to be or potentially located within one mile of the Watson Project areas. (*Id*.)

Local Agency and Organization Consultation

On June 30, 2008, the Applicant's consultant contacted the Wilmington Historical Society and the city of Carson's Planning Department for information about any known cultural resources, either listed locally or recognized locally, by the city's museum or by the local historical society.

Results of Inquiries to Local Agencies and Organizations

There was no response from the Wilmington Historical Society. There are no locally listed cultural or historical resources in a one-mile radius, according to the city of Carson. (Ex. 200, p. 4.3-19.)

Native American Consultation

The Native American Heritage Commission (NAHC) maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans, referred to by Staff as Native American ethnographic resources. The NAHC's Sacred Lands database has records for places and objects that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. Their Contacts database has the names and contact information for individuals, representing a group or themselves, who have expressed an interest in being contacted about development projects in specified areas. An information request on the presence of sacred lands in the vicinity of a proposed project should be made and a request for a list of Native American contacts should also be made to identify both additional cultural resources and any concerns the Native Americans may have about a proposed project. *(Id.)*

On behalf of the Applicant, URS contacted the NAHC with a request to search the Native American Sacred Lands File. The NAHC responded on June 16, 2008, that a search of the Sacred Lands File (SLF) for the project area site "failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the Sacred Lands File

does not guarantee the absence of cultural resources in any area of potential effect." The NAHC provided a list of seven Native American contacts. URS subsequently contacted these persons. *(Id.)*

Results of Inquiries Made to Native Americans

Not all Native Americans contacted by URS responded to the letter or to the follow-up phone calls, but five responses were received. Mr. Qun-tan Shop, of the Chumash Clan, indicated that he would respond via email by the end of the day on July 14, 2008. There appears to be no further response from him*. (Id.)*

Mr. Johntommy Rosas, of the Gabrielino/Tongva, Administrator to the Ancestral Territorial Tribal Nation, responded in an email, dated July 12, 2008. Mr. Rosas stated that, "we object to the proposed project under the grounds and basis due to numerous of violations to our indigenous rights. This proposed project will impose severe negative impacts on our territorial resources and that is unacceptable." He stated further that he would provide more comments at a later date. To date, no further comments have been received from this organization. (Ex. 200, p. 4.3-20.)

Mr. Anthony Morales, of the Gabrielino/Tongva, San Gabriel Band of Mission Indians, called Mr. Jeremy Hollins, URS, on July 30, 2008, wanting to know about the project's time line and the extent of the ground disturbance. Information was provided to Mr. Morales about recent investigations and the excavations associated with the possible construction. Further discussion revolved around the cultural sensitivity of the area and some of the recent findings discovered from previous projects over the past 20 years. Mr. Morales requested to be involved in future phases of the project. *(Id.)*

Mr. Sam Dunlap, Tribal Secretary, of the Gabrielino/Tongva Council, responded in an email dated February 21, 2009, that, due to the proximity of a recorded archaeological site with burials and the project's close proximity to the Dominguez Channel, the project's site has an increased potential to contain buried archaeological deposits and human remains and, therefore, may have the potential to create an adverse impact to the cultural resources of his tribe. Mr. Dunlap recommended an archaeological and Native American monitoring component as a mitigation measure with the Native American monitor to be selected from the Gabrielino Tongva Nation. *(Id.)*

Mr. Robert Dorame, Tribal Chair/Cultural Resources, Gabrielino/Tongva Indians of California Tribal Council, spoke with URS staff on July 15, 2008, and expressed concern regarding the project and asked to be involved in all future aspects of the project. (*Id.*)

In summary, participants in the Native American consultation generally expressed concern over the project's potential to impact buried prehistoric deposits, including burials. Three of the five respondents were concerned about this possibility, and two of them expressed a desire to be kept informed as the project progresses. One recommended construction monitoring. A fourth respondent was severely critical of the project as a trespass on Native American rights. The fifth respondent provided no details of his group's concerns. None of the respondents identified any cultural resources known by them to be located on the proposed project site. *(Id.)*

Summary of Cultural Resources Identified In or Near the Proposed Project Site

Within a one-mile radius of the proposed project site, the CHRIS records search identified 11 cultural resources, consisting of seven archaeological sites and four built-environment resources. Within the same area, no additional cultural resources were identified through other archival research, inquiries to local planning and historical agencies and organizations, consultation with Native Americans, or archaeological field survey. The 11 previously identified cultural resources were not located where the project could have either a direct or indirect impact on any aspect of their integrity, and therefore were not evaluated regarding their eligibility for the CRHR. (Ex. 200, p. 4.3-24.)

The Applicant's built-environment field survey identified three built-environment resources located where the project could have a direct impact on their integrity of setting and integrity of feeling. These resources were evaluated for their CRHR eligibility.

Determining the Historical Significance of Cultural Resources

CEQA requires the Energy Commission, as a lead agency, to evaluate the historical significance of cultural resources by determining whether they meet several sets of specified criteria. Under CEQA, the definition of a historically significant cultural resource is that it is eligible for listing in the CRHR, and such a

cultural resource is referred to as a "historical resource, which is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR", or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (Cal. Code Regs., tit. 14, § 15064.5(a)). The term, "historical resource," therefore, indicates a cultural resource that is historically significant and eligible for the CRHR.

Consequently, under the CEQA Guidelines, to be historically significant, a cultural resource must meet the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old,[2] a resource must meet at least one (and may meet more than one) of the following four criteria. (Pub. Resources Code, § 5024.1.)

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion 2, is associated with the lives of persons significant in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.

Historical resources must also possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance. (Cal. Code Regs., tit. 14, § 4852(c).)

Additionally, cultural resources listed in or formally determined eligible for the National Register of Historical Places (NRHP) and California Registered Historical Landmarks numbered No. 770 and up are automatically listed in the

[2] The Office of Historic Preservation's *Instructions for Recording Historical Resources* (1995) endorses recording and evaluating resources over 45 years of age to accommodate a potential five-year lag in the planning process.

CRHR and are therefore also historical resources. (Pub. Resources Code, § 5024.1(d).) Even if a cultural resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows a lead agency to make a determination as to whether it is a historical resource. (Pub. Resources Code, § 21084.1.)

The assessment of potentially significant impacts to historical resources and the mitigation that may be required of a proposed project to ameliorate any such impacts depend on CRHR-eligibility evaluations.

No archaeological resources were identified on or near the proposed project site or laydown and parking area. The three built-environment resources that URS identified within the built-environment project area of analysis included the BP Carson Refinery (constructed 1922 – 1925), a portion of the Dominguez Channel (constructed in 1917), and a segment of the Southern Pacific Railroad (constructed 1869–1876). (Ex. 200, p. 4.3-26.)

The BP Carson Refinery was previously unevaluated. URS concluded that the refinery does not qualify for the CRHR and therefore is not a historical resource for the purposes of CEQA. URS states that Richfield Oil's establishment and operation of its refinery in Carson is not associated with events that made a significant contribution to the history of industrial oil production, nor is the company's opposition to the incorporation of the city of Carson associated with a significant contribution to that city's history (CRHR Criterion 1). No persons significant in our past have been associated with the refinery, so it would not qualify under CRHR Criterion 2. The refinery has seen substantial infill and alteration which has resulted in changes to the visual appearance and to the original plan, which also disqualify it (CRHR Criterion 3). The refinery represents common, utilitarian industrial design and construction that can be found in similar industrial sites of the Carson area, so the refinery cannot yield information important in history (Criterion 4). We agree with this analysis. (*Id.*)

The Dominguez Channel also was previously unevaluated. URS concluded that the portion of the channel which is located within the built-environment project area of analysis for the Watson Project, is not eligible for the CRHR because it does not have an association with a significant event, pattern of events, or person (Criteria 1 and 2). Also, being an example of the most common type of water conveyance system in California, an open canal, it does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values (Criterion 3).

Finally, again, because its design and construction are common, it does not have the potential to yield information important to history (Criterion 4). We agree with their conclusion that the recorded portion of the Dominguez Channel is not eligible for the CRHR. (*Id.*)

The URS-recorded segment of the Southern Pacific Railroad near the project site is an element of a larger resource, the Union Pacific Railroad (originally the Southern Pacific Railroad). The Union Pacific Railroad was recorded and evaluated in 1999 by Jones & Stokes, who found it to be eligible for the NRHP under Criteria A and B. URS evaluated the segment of the Southern Pacific railroad located within the project area of analysis and concluded that this segment did not appear to be a contributing element to the larger Southern Pacific railroad and also that it was not individually eligible for the CRHR because the recorded segment is not a distinctive railroad element and does not convey the significance of the entire Southern Pacific Railroad (Criterion 1); it is not associated with the lives of historical figures (Criterion 2); it does not embody the work of a master or embody distinctive style characteristics, as it is a modest example of a siding area lacking any distinguishing features, materials, and arrangements (Criterion 3); and it does not appear to be able to yield any information important to history as the original materials no longer appear to be present. (*Id.*) We agree with that conclusion.

The evidence shows that there are no historical resources in the Watson Project areas. The three newly recorded resources within the built-environment area of analysis do not qualify as historical resources for purposes of CEQA, as they are not eligible for the CRHR, and there are no archaeological resources in the Watson Project's archaeological area of analysis.

3. Potential Impacts

Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic standing structures when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can

have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations.

Generally speaking, indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility and vandalism or greater weather exposure becomes possible.

The evidence of record is uncontradicted in that no significant known archaeological resources have been identified in any of the areas affected by project construction. Subsurface disturbance, during construction, however, has the potential to disturb as yet unknown archaeological resources. The Applicant has stated that human remains are not anticipated within the project site “given the absence of a prehistoric deposit” but recommends the following provisions to be followed in case human remains are encountered: immediate halting of construction activities within vicinity of discovery; immediate contacting of County Coroner and project applicant by project supervisor; contacting of the NAHC if the remains are Native American with the NAHC determining the Most Likely Descendant (MLD) to notify this identified MLD with the request to inspect the burial and make recommendation(s) for treatment and removal. (Ex. 200, p. 4.3-28.)

We find that the proposed construction and construction-related activities of the Watson Project, would not have any direct impact on known cultural resources if the construction is implemented as proposed. However, although finding any human remains is not anticipated, in the case of any accidental discovery or recognition of any human remains the project owner will be required to proceed in accord with the provisions of CEQA. (Cal. Code Regs., tit. 14, § 15064.5, subd. (e).)

CEQA advises a lead agency to make provisions for archaeological resources unexpectedly encountered during construction, and a project owner may be required to train workers to recognize cultural resources, fund mitigation, and delay construction in the area of the find. (Pub. Resources Code, § 21083.2; Cal. Code Regs., tit. 14, §§ 15064.5(f),15126.4(b).)

Conditions of Certification **CUL-1** through **CUL-8** are intended to facilitate the identification and assessment of previously unidentified archaeological resources encountered during construction and to mitigate any significant impacts from the project on any newly found resources assessed as significant. These conditions also address concerns expressed by Native Americans, and provide for compliance with the city of Carson's historic preservation standards.

Because any ground disturbance that might occur during operation of the project due to maintenance or repairs would be in the fill known to underlie the proposed project area, we find that the operation of the project would have no adverse impacts on cultural resources. Therefore, no mitigation measures would be required, and Staff proposed no conditions of certification addressing operation impacts.

4. Cumulative Impacts

A cumulative impact is a proposed project's incremental effects considered over time together with those of other, nearby, past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project. (Pub. Resources Code, § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(a)(3), 15130, 15355.)

We find that the project would not have a significant cumulative effect on historical resources because as the evidence shows, no unique cultural resources or historical resources of an archaeological nature were identified in the project areas of analysis. Therefore, the project would not contribute to an incremental impact on cultural resources and thus would not have a cumulatively considerable impact on cultural resources.

5. Compliance with LORS

If the Watson Project is built as proposed there would be no impact on historical and cultural resources. Therefore, the project would be in compliance with applicable state laws, ordinances, regulations, and standards.

The city of Carson does not have a local historic preservation ordinance. But, the city's general plan policies encourage project proponents to provide the results of such historic preservation activities as historic resource surveys to the City's Planning and Environmental Services Division. For the Watson Project, resource

surveys have been completed. To ensure that the Watson Project is consistent with the goals of the City of Carson's General Plan Implementation Measure P-IM-9.3, this decision includes a condition of certification which would require the Applicant to provide their cultural resources survey reports to the city's Planning and Environmental Services Division. With the fulfillment of this condition, the Watson Project would be in conformance with the goals of the City of Carson's General Plan.

FINDINGS AND CONCLUSIONS

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

1. No known significant cultural resources exist in the general project area.

2. Construction activities associated with the Watson Project and related facilities could, nonetheless, present a potential for adverse impacts to unknown cultural resources.

3. The potential for impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.

4. The project owner will obtain the services of a Native American monitor to observe ground disturbance activities in areas where Native American artifacts are discovered.

5. The project owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered.

6. The Watson Project is compatible with the industrial setting of the area.

7. The potential for cumulative impacts to cultural resources is insignificant.

8. The mitigation measures contained in the conditions of certification below ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

We therefore conclude that with implementation of the conditions of certification below, the project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance (includes "preconstruction site mobilization," "construction ground disturbance," and "construction grading, boring, and trenching" as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternate CRS(s), if alternates are needed. The CRS shall manage all monitoring, mitigation, curation and reporting activities required in accordance with the conditions of certification (Conditions). The CRS may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to CPM approval of the CRS, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for non-compliance on this or other projects. After all ground disturbance is completed and the CRS has fulfilled all responsibilities specified in these cultural resources conditions, the project owner may discharge the CRS, if the CPM approves. With the discharge of the CRS, these cultural resources conditions no longer apply to the activities of this power plant.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in the Code of Federal Regulations, 36 CFR Part 61. In addition, the CRS shall have the following qualifications:

1. Qualifications appropriate to the needs of the project, including a background in anthropology, archaeology, history, architectural history, or a related field;
2. At least three years of archaeological or historic, as appropriate(per nature of predominate cultural resources on the project site), resource mitigation and field experience in California; and
3. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgeably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to implement effectively the conditions of certification.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. A BS or BA degree in anthropology, archaeology, historical archaeology or a related field and one year experience monitoring in California; or
2. An AS or AA degree in anthropology, archaeology, historical archaeology or a related field, and four years experience monitoring in California; or
3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialists, e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification: At least 45 days prior to the start of ground disturbance, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

1. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If there is no alternate CRS in place to conduct the duties of the CRS, a designated, qualified monitor may serve in place of a CRS so that project-related ground disturbance may continue up to a maximum of three days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.
2. As soon as the CPM requires monitoring, the CRS, if CRMS are to be used, shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this condition.

3. As soon as the CRS determines that additional CRMs will be needed, the CRS shall provide letters to the CPM identifying the new CRMs and attesting to their qualifications.
4. As soon as the CRS determines that any technical specialists will be needed, the resume(s) of the specialists shall be provided to the CPM for review and approval.
5. At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the Cultural Resources Conditions.

CUL-2 Prior to the start of ground disturbance, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, confidential cultural resources reports for the project, and the Energy Commission Final Staff Assessment. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until construction-related ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where construction-related ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: At least 40 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resource documents, and the Energy Commission Final Staff Assessment to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

1. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.
2. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.
3. Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
4. Within five days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

CUL-3 Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall follow the content and organization of the draft model CRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the conditions of certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in **Appendix A**."
2. A proposed general research design that includes a discussion of archaeological research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. The research design will specify that the preferred treatment strategy for any buried archaeological deposits is avoidance. A

specific mitigation plan shall be prepared for any unavoidable impacts to any CRHR-eligible (as determined by the CPM) resources. A prescriptive treatment plan may be included in the CRMMP for limited data types.

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project.
4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
5. A description of the manner in which Native American observers or monitors, if needed, will be included; the procedures to be used to select them; and their role and responsibilities.
6. Specification of the manner in which human remains and grave associated artifacts, if discovered during construction, will be treated, consistent with applicable laws and regulations and input from Native American Tribal Representatives.
7. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas identified during construction ground disturbance. The description shall address how these measures would be implemented once sensitive areas are identified and how long they would be needed to protect the resources from project-related effects.
8. A statement that all encountered cultural resources over 50 years old shall be recorded on a DPR form 523 and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, monitoring, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections* into a retrievable storage collection in a public repository or museum.
9. A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.
10. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any

cultural resource materials that are encountered during ground disturbance and cannot be treated prescriptively.

11. A description of the contents and format of the final Cultural Resource Report (CRR), which shall be prepared according to ARMR guidelines.

Verification: Upon approval of the CRS proposed by the project owner, the CPM will provide to the CRS an electronic copy of the draft model CRMMP.

1. At least 30 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval.
2. At least 30 days prior to the start of ground disturbance, a letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, monitoring, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR), if required by the CPM, to the CPM for approval. The CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The CRR shall report on all field activities including dates, times and locations, findings, samplings, and analyses. All survey reports, Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification: Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

1. Within 90 days after completion of ground disturbance (including landscaping), the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources

Commission's *Guidelines for the Curation of Archaeological Collections*, to accept cultural materials, if any, from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

2. Within 10 days after CPM approval, the project owner shall provide documentation to the CPM confirming that copies of the CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.
3. Within 30 days after requesting a suspension of ground disturbance and/or construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

CUL-5 Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment. The training shall be prepared and conducted by the CRS and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits, with particular emphasis given to distinguishing primary deposits from the general dispersal of artifacts seen in fill;
5. Instruction that the CRS, alternate CRS, and CRMs, if any, have the authority to halt project-related ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
7. An informational brochure that identifies reporting procedures in the event of a discovery;

8. An acknowledgement form signed by each worker indicating that they have received the training; and
9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification: At least 30 days prior to the beginning of pre-construction site mobilization, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.

1. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.
2. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 At the direction of the CPM, the project owner shall ensure that the CRS, alternate CRS, or CRMs monitor full time all ground disturbance in the area where a CRHR-eligible (as determined by the CPM) cultural resources discovery has been made. The level, duration, and spatial extent of monitoring shall be determined by the CPM. In the event that the CRS believes that a current level of monitoring is not appropriate, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous paragraph, for as long as the CPM requires. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than 50 feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Contact lists of interested Native Americans and guidelines

for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

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

If monitoring should be needed, as determined by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS on forms provided by the CPM. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

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

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

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

Verification: At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.

1. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.
2. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.
3. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.
4. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.
5. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.
6. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-7 The project owner shall grant authority to halt project-related ground disturbance to the CRS, alternate CRS, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources over 50 years of age (or, if younger, determined exceptionally significant by the CPM) are found, or impacts to such resources can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting as provided in other conditions shall continue during all ground-disturbing activities elsewhere on the project site. The halting

or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for mitigation of any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523 primary form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.
4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

Ground disturbance may resume only with the approval of the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt project-related ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

1. Within 48 hours of the discovery of an archaeological or ethnographic resource, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.
2. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following

the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

CUL-8 The project owner shall submit copies of the archaeological and built-environment survey reports, and all associated forms produced for the Watson Cogeneration Steam and Electric Reliability Project's Energy Commission Application for Certification, to the City of Carson's Planning and Environmental Services Division, in compliance with the city's General Plan Implementation Measure P-IM-9.3.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide documentation to the CPM confirming that copies of the archaeological and built-environment survey reports, and all associated forms produced for the Watson Cogeneration Steam and Electric Reliability Project's Energy Commission Application for Certification, have been provided to the City of Carson's Planning and Environmental Services Division. Documentation may consist of a letter of receipt from the Planning and Environmental Services Division.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

This section reviews the project's potential impacts on significant geological and paleontological resources. It also evaluates whether project-related activities could result in exposure to geological hazards, whether the facility design and construction can avoid any such hazards, and whether geologic or mineralogic resources are present. The analysis also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present.

This section considers two types of impacts: 1) geologic hazards, which could affect proper functioning of the proposed facility and include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches, and 2) potential impacts the proposed facility could have on existing geologic, mineralogic, and paleontologic resources.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site and Regional Geology

The project site is located in Los Angeles County, California, within the Los Angeles Basin at the northern end of the Peninsular Ranges geomorphic province. The Peninsular Ranges geomorphic province extends from the Los Angeles Basin in the north some 900 miles south to the tip of Baja California in Mexico. The Peninsular Ranges geomorphic province varies from approximately 30 to 100 miles in width. The highland and mountain masses of the Peninsular Range on the north and east sides of Los Angeles County are characterized by Cenozoic to Tertiary volcanic, intrusive, metamorphic, and sedimentary rocks which slope steeply downward to alluvial, colluvial and uplifted marine deposits along the Pacific coast to the south and west. Mountains of the Peninsular Range are being actively offset by northwest-trending right-lateral strike-slip faulting. In addition, active regional reverse and thrust faulting, associated with compressional tectonics, continues to cause uplift in the east-west-trending Transverse Ranges that form the northern boundary of the Peninsular Range Geomorphic Province and along blind thrusts that underlie the Los Angeles basin. Extensively folded and faulted Miocene age volcanic and marine sedimentary rocks of the Monterrey Formation form the Palos Verde Peninsula southwest of the site. (Ex. 200, pp. 5.2-3 – 5.2-4.)

The Watson Project site lies in the relatively flat flood plain of the Los Angeles River. Local surface deposits are mapped as young alluvial fan and valley deposits, which overlie old alluvial flood plain deposits. Young alluvial fan and valley deposits are described as poorly consolidated and poorly sorted clay, sand, gravel, and cobbles. Old alluvial flood plain deposits are described as fluvial sediment deposits on valley floors consisting of moderately well consolidated, poorly sorted, permeable, slightly dissected gravel, sand, silt, and clay bearing alluvium. (Ex. 200, p. 5.2-4.)

2. Paleontologic Resources

The evidence shows that no paleontological finds have been documented on the Watson plant site. (Ex. 200, p. 5.2-9.)

No important paleontological resources were observed on the Watson Project site during the paleontological field survey conducted by the Applicant. (Ex.1, p. 5.8-9.) The Natural History Museum of Los Angeles County considers the most recent unconsolidated alluvial deposits, which form the natural site surface, to hold little potential for preservation of significant fossil remains. However, the older Quaternary alluvium, which directly underlies the recent alluvium, has yielded fossils including fossil horse, mammoth, mastodon, sloth, wolf, bear, saber-toothed cats, camels, and bison from depths as shallow as eight feet below surface in other areas. For this reason, the paleontological sensitivity of older Quaternary (older Pleistocene) alluvium is considered to be high. If the site construction includes significant amounts of grading, excavation, and utility trenching, the record indicates that the probability that paleontological resources would be encountered during such activities would be high anytime excavation activities fully penetrate the recent alluvial deposits and encounter older Quaternary alluvium. Potential impacts to such resources will be effectively mitigated through the Conditions of Certification **PAL-1** through **PAL-7**. These conditions essentially require a worker education program in conjunction with the monitoring of earthwork activities by a qualified professional paleontologist. (Ex. 200, pp. 5.2-7 - 5.2-8.)

3. Seismicity

Published maps show no active faults crossing the boundary of new construction at the Watson power plant site. The nearest major active faults are the Newport-Inglewood Fault located approximately 2.6 miles north, and the Palos Verdes

Fault located approximately 4.4 miles to the south. Both are Class B right-lateral strike-slip faults. There are least 12 other active or potentially active faults which are estimated to be capable of causing site acceleration greater than 0.1g within 28 miles of the site. Since the closest known fault is over four miles away, there is minimal potential for ground rupture at the site. (Ex. 200, pp. 5.2-8 – 5.2-9.)

4. Liquefaction

Liquefaction is a condition in which a cohesionless soil may lose shear strength because of sudden increase in pore water pressure caused by an earthquake. The seismic hazards zones map for the Long Beach Quadrangle indicates the project site is in an area outside of any designated liquefaction hazard zone. The historic depth to ground water near the southwest corner of the Watson Project site may be as shallow as 10 feet below surface. The project specific geotechnical report required by the California Building Code (2010) in CCR Title 24 (CBC) will assess the liquefaction potential of the site to facilitate mitigation of any liquefaction hazard. This will include determination of the depth to ground water, the presence of liquefiable layers such as clean sands, and the relative soil compaction with depth. (Ex. 200, p. 5.2-9.)

5. Lateral Spreading

Lateral spreading of the ground surface can occur within liquefiable beds during seismic events. Lateral spreading generally requires an abrupt change in slope, such as a nearby steep hillside or deeply eroded stream bank, but can also occur on gentle slopes. Other factors such as distance from the epicenter, magnitude of the seismic event, and thickness and depth of liquefiable layers also affect the amount of lateral spreading. Because the Watson Project site is nearly flat, the potential for lateral spreading of the site surface during seismic events is very low. If the project geotechnical investigation per 2010 CBC determines that liquefaction is unlikely, the potential for lateral spreading would be considered negligible. (Ex. 200, p. 5.2-9.)

6. Dynamic Compaction

Dynamic compaction of soils can occur when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume, as the soil grains tend to rearrange causing an increase is soil density. The decrease in volume can result in settlement of

overlying structural improvements but not to the extent that it develops a life/safety issue. Mitigation of the possible effects of dynamic compaction of site native and fill soils during an earthquake will be addressed in the final project geotechnical report, per 2010 CBC requirements and **Facility Design** Conditions of Certification **GEN-1**, **GEN-5** and **CIVIL-1**. (Ex. 200, p. 5.2-10.)

7. Hydrocompaction

Hydrocompaction (also known as hydro-collapse) is generally limited to young soils that were deposited rapidly in a saturated state, most commonly by a flash flood. The soils dry quickly, leaving an unconsolidated, low density deposit with a high percentage of voids. Foundations built on these types of compressible materials can settle excessively, particularly when landscaping irrigation dissolves the weak cementation that is preventing the immediate collapse of the soil structure. Hydrocompaction does not represent a threat to life or safety. Any necessary mitigation measures for the effects of hydrocompaction of site soils should be addressed as required in the project-specific geotechnical report, per CBC (2010) requirements and **Facility Design** Conditions of Certification **GEN-1**, **GEN-5** and **CIVIL-1**. (Ex. 200, p. 5.2-10.)

8. Subsidence

Local subsidence or settlement may occur when areas containing compressible soils are subjected to foundation loads. Regional studies conducted to evaluate the effects of subsidence due to pumping of ground water, oil, and gas reserves indicate no significant regional subsidence is occurring. Subsidence does not represent a threat to life or safety. Recommendations for mitigation of the effects of normal subsidence due to foundation loads should be addressed in the project-specific geotechnical report, per CBC (2010) requirements and **Facility Design** Conditions of Certification **GEN-1**, **GEN-5** and **CIVIL-1**. When needed, mitigation is normally accomplished by over-excavation and replacement of the compressible soils. For deep-seated conditions, deep foundations are commonly used. (Ex. 200, p. 5.2-10.)

9. Expansive Soils

Soil expansion occurs when clay-rich soils with an affinity for water exist at a moisture content below their plastic limit. The addition of moisture from irrigation, precipitation, capillary tension, water line breaks, etc. causes the clay soils to

absorb water molecules into their structure, which in turn causes an increase in the overall volume of the soil. This increase in volume can correspond to excessive movement (heave) of overlying structural improvements. Expansive soils do not represent a threat to life or safety. The potential for and methods for mitigation of the effects of expansive soils should be addressed in the project-specific geotechnical report, per CBC (2010) requirements and **Facility Design** Conditions of Certification **GEN-1**, **GEN-5** and **CIVIL-1**. Expansive soil mitigation, when necessary, is normally accomplished by over-excavation and replacement of the soils. For deep-seated conditions, deep foundations are commonly used. Lime-treated (chemical modification) is often used to mitigate expansive clays in pavement areas. (Ex. 200, pp. 5.2-10 - 5.2-11.)

10. Landslides

The Watson Project site is relatively flat and the gradual slope of the site coupled with the absence of topographically high ground within or immediately upgradient from the site suggest it is not susceptible to landslide activity. The project-specific engineering geology report should verify that landslide potential is minimal, in accordance with the requirements of the CBC (2010) and **Facility Design** Condition of Certification **GEN-4**. (Ex. 200, p. 5.2-11.)

11. Flooding, Tsunamis and Seiches

The Federal Emergency Management Agency (FEMA) has identified the Watson Project site and project linears as lying in areas determined to be outside the 0.2 percent annual chance flood plain. Therefore, the potential for flooding to impact the site is considered to be low. (Ex. 200, p. 5.2-11.)

Tsunamis are large-scale seismic-sea waves caused by offshore earthquakes, landslides and/or volcanic activity. The Watson power plant site lies inland approximately four miles from the Long Beach Harbor. The potential tsunami height that might impact Southern California has been estimated at up to 11.5 feet. Recently, run-up heights up to three feet above mean sea level have been predicted on the Southern California coastline, although heights up to 16 feet could occur at San Diego due to the configuration of the bay. The Watson Project lies outside of the area designated by the California Emergency Management Agency (CalEMA) as a potential tsunami inundation area. Given the power plant footing elevation of approximately 30 feet above mean sea level, a tsunami of the maximum indicated height of 11.5 feet cannot impact the site. No large inland

surface water bodies which could produce seiches are located near the plant site. (Ex. 200, p. 5.2-11.)

12. Geologic, Mineralogic, and Paleontologic Resources

The evidence shows that there are no known geological resources within three miles of the Watson Project construction site or linear routes and given the absence of rock outcrops on or near the site surface there is very low potential for this site to have economically valuable mineral deposits. (Ex. 200, pp. 5.2-11 – 5.2-12.)

The potential to impact significant paleontological resources in older Quaternary (older Pleistocene) sediments, especially in deeper excavations may be high. Fill materials, if present and younger alluvium have a negligible paleontological sensitivity. Construction of the project will include grading, excavation, and utility trenching. The record shows the probability of encountering paleontological resources to be generally high in excavations which penetrate through the recent alluvium and encounter older Quaternary alluvium. The potential for encountering fossils would increase with the depth of excavation. (Ex. 200, p. 5.2-12.)

Conditions of Certification **PAL-1 to PAL-7** are designed to mitigate any paleontological resource impacts to a less than significant level. Essentially, these conditions require a worker education program in conjunction with monitoring of earthwork activities by qualified professional paleontologists. Earthwork in the immediate vicinity will stop any time potential fossils are recognized by either the paleontologist or the worker. When properly implemented, the conditions of certification yield a net gain to the science of paleontology since fossils that would not otherwise have been discovered can be collected, identified, studied, and properly curated. A paleontological resource specialist (PRS) is retained, for the project by Watson, to produce a monitoring and mitigation plan, conduct the worker training, and provide the on-site monitoring. During the monitoring, the PRS can and often does petition the compliance project manager (CPM) for a change in the monitoring protocol. Most commonly, this is a request for lesser monitoring after sufficient monitoring has been performed to ascertain that there is little chance of finding significant fossils. In other cases, the PRS can propose increased monitoring due to unexpected fossil discoveries or in response to repeated out-of-compliance incidents by the earthwork contractor. (Ex. 200, p. 5.2-12.)

Based upon the evidence, the record shows that the facility can be designed and constructed to minimize the effect of geologic hazards at the site during project design life and that impacts to any vertebrate fossils encountered during construction of the power plant and associated linears will be mitigated to a level of insignificance. (Ex. 200, pp. 5.2-12 – 5.2-13.)

Accordingly, we find operation of the plant facilities will not have any adverse impact on geologic, mineralogic, or paleontologic resources. Potential geologic hazards, including strong ground shaking, foundation settlement due to compressible soils, dynamic compaction, and the possible presence of expansive clay soils can be effectively mitigated through facility design, and Conditions of Certification **GEN-1, GEN-5** and **CIVIL-1** in the **Facility Design** section. (Ex. 200, p. 5.2-13.)

Further, facility closure activities are not expected to impact geologic or mineralogical resources since no such resources are known to exist either at the project location or along its linears. In addition, the decommissioning and closure of the project should not negatively affect geologic, mineralogical, or paleontological resources since the majority of the ground disturbed during plant decommissioning and closure will have been already disturbed, and mitigated as required, during construction and operation of the project. (Ex. 200, pp. 5.2-13 – 5.2-14.)

13. Cumulative Impacts

The Watson Project site is situated in an active geologic environment. Strong ground shaking potential will be mitigated through foundation and structural design as required by the CBC (2010). Expansive materials, as well as compressible soils and soils that may possibly be subject to subsidence due to dynamic compaction, will be mitigated in accordance with a design-level geotechnical investigation as required by the CBC (2010), and Conditions of Certification **GEN-1, GEN-5, and CIVIL-1** under **Facility Design**. Paleontological resources have been documented in the general area of the project and in sediments similar to those that are present at depth on the site. However, no paleontological resources have been found on the plant site to date. The potential impacts to paleontological resources due to construction activities will be mitigated as required by Conditions of Certification **PAL-1 to PAL-7**.

The record indicates that the potential for significant adverse cumulative impacts to the project from geologic hazards, during the project's design life, is low, and that the potential for impacts to geologic, mineralogical, and paleontological resources is very low. The evidence establishes that impacts to scientifically significant vertebrate and invertebrate fossils encountered during construction will be mitigated to levels of less than significant. The conditions of certification allow the CPM and project owner to adopt a compliance monitoring scheme ensuring compliance with applicable LORS for geologic hazards and geologic, mineralogical, and paleontological resources. (Ex. 200, p. 5.2-13.)

Based on the above discussion of the evidence, we find the potential for significant adverse cumulative impacts to the project from geologic hazards, during the project's design life, will be below significance, and that the potential for impacts to geologic, mineralogical, and paleontological resources will also be below significance.

14. Compliance with LORS

There are no federal LORS for geologic hazards and resources for this site. The California Building Code (2010) in CCR Title 24 (CBC) includes a series of standards used in project investigation, design, and construction, including grading and erosion control. The record contains a discussion of the other relevant LORS in relation to the Watson Project. Based on the evidence, we find that the project, if constructed and operated in a manner consistent with the Conditions of Certification set forth in this Decision, will comply with all applicable LORS pertaining to geological and paleontological resources.

PUBLIC COMMENT

There were no comments submitted on geology or paleontology.

FINDINGS OF FACT

1. No paleontological finds have been documented on the Watson plant site.

2. The potential to encounter significant paleontological resources during construction of the project is high in excavations in older Quaternary alluvium.

3. Potential impacts to paleontological resources below the surface will be effectively mitigated through the Conditions of Certification **PAL-1** through **PAL-7**.

4. There is minimal potential for ground rupture at the site.

5. The project site is in an area outside of any designated liquefaction hazard zone.

6. The potential for lateral spreading of the site surface during seismic events is very low.

7. Hydrocompaction, dynamic compaction, subsidence, expansive soils and landslides do not represent a threat to life or safety at the project site.

8. The potential for flooding to impact the site is considered to be low.

9. A tsunami of the maximum indicated height of 11.5 feet cannot impact the site.

10. There are no known geological resources within three miles of the Watson Project construction site or linear routes.

11. Potential geologic hazards to the project are effectively mitigated by standard engineering design measures as specified in Conditions **GEN-1**, **GEN-5**, and **CIVIL-1** of the **Facility Design** section of this Decision.

12. The potential for significant adverse cumulative impacts to the project from geologic hazards, during the project's design life, are less than significant.

13. The potential for impacts to geologic, mineralogical, and paleontological resources are less than significant.

14. The Conditions of Certification ensure that activities associated with construction and operation of the project will cause no significant adverse impacts to geological or paleontological resources.

CONCLUSIONS OF LAW

1. The Conditions of Certification are sufficient to ensure that the project complies with all applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

2. We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineralogic, or paleontological resources.

CONDITIONS OF CERTIFICATION

General conditions of certification with respect to engineering geology are set forth under Conditions of Certification **GEN-1**, **GEN-5**, **and CIVIL-1** in the **Facility Design** section. Paleontological Conditions of Certification follow in **PAL-1** through **PAL-7**. The record shows that the likelihood of encountering paleontologic resources is high if any excavations penetrate through the recent alluvium of the site surface. The CPM will consider reducing monitoring intensity, at the recommendation of the project PRS, following examination of sufficient, representative, deep excavations to fully understand site stratigraphy.

PAL-1 The project owner shall provide the compliance project manager (CPM) with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontologic Resource Monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project, stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.

Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan, and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet range. If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the

project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week, and until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontological resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities, and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited, to the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units

based on the occurrence of fossils either in that unit or in correlative units;

4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation, and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the Paleontological Conditions of Certification.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of a CPM-approved video or in-person presentation. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or

other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.

At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning to use a video for interim training.

If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.
2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event where construction has been halted because of a paleontological find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to

paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction.

Verification: The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved Paleontological Resource Report (see **PAL-7**). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and submit it to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

Certification of Completion
Worker Environmental Awareness Program
Watson Power Plant (09-AFC-01)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
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Cultural Trainer: _____ Signature:_____ Date: ___/___/____

PaleoTrainer: _____ Signature:_____ Date: ___/___/____

Biological Trainer: _____Signature:_____ Date:___/___/___

VIII. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise and Vibration, Socioeconomics, Traffic and Transportation** and **Visual Resources**.

A. LAND USE

The land use analysis focuses on three main issues: (1) whether the project is consistent with local land use plans, ordinances, and policies; (2) whether the project is compatible with existing and planned land uses; and (3) whether the project converts important farmlands to non-agricultural uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Description

The Watson Project site is located in the city of Carson, approximately 16 miles south of downtown Los Angeles. Carson borders the city of Long Beach to the east, the city of Torrance to the west, and the city of Compton to the northeast. The project will occupy a 2.5-acre brown field site within the boundary of the existing Watson Cogeneration Facility; a 21.7 acre site located within the overall 428-acre BP Carson refinery site (Assessor Parcel Number 7315-006-003). The site is located approximately 0.7 mile south of the 405 Freeway, bounded by East 223rd Street to the north, Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east. The street address is 22850 South Wilmington Avenue. (Ex. 200, pp. 4.5-2 - 4.5-3.)

The project will be part of the existing Watson Cogeneration Facility. The existing Facility was licensed by the Energy Commission in 1986 (85-AFC-1) and has been in operation since 1988. The existing cogeneration facility is owned by the Watson Cogeneration Company and operated by BP West Coast Products, LLC – BP Carson Refinery. (Ex. 200, p. 4.5-3.)

The refinery site and the project site are industrial in nature and the area is dominated by industrial structures, equipment, machines, and paved surfaces. The Watson Project will operate in conjunction with the existing four cogeneration units and will increase the existing capacity of the 385 MW Watson Cogeneration facility to an output of 470 MW. No new linear facilities will be constructed as the existing linear infrastructure for electric, sewer and water will be utilized. (Ex. 200, p. 4.5-3.)

The construction laydown and parking area will be a paved 25-acre parcel (Assessor Parcel Number 7315-020-019) located approximately one mile southeast of the project site, at the northeast corner of East Sepulveda Boulevard and South Alameda Street. BP owns the site and utilizes it as a truck parking and staging area. The street address of the laydown and parking area is 2149 East Sepulveda Boulevard. (Ex. 200, p. 4.5-3.)

The project site, construction laydown and parking area are located entirely on private property within the city of Carson. The project sites are designated Heavy Industrial by the City of Carson General Plan, and zoned Manufacturing, Heavy (MH) by the City of Carson Zoning Ordinance. The project sites are not located within a redevelopment project area, a design overlay or in any unincorporated communities of Los Angeles County. (Ex. 200, p. 4.5-4.)

2. Construction and Operation Impacts

The California Land Conservation Act, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners which restrict specific parcels of land to agricultural or related open space uses. The landowner commits this parcel to an annually renewing ten-year period whereby conversion of agricultural use is prohibited. The Watson Project is not located in an area that is under a Williamson Act Contract and as a result does not conflict with the Williamson Act. In addition, based on the historic and current industrial use on site and the surrounding industrial zoning the project does not conflict with existing zoning for agricultural use. (Ex. 200, p. 4.5-6.)

The Watson Project will be located entirely on private property within the city of Carson. The site is adjacent to industrial uses and located within the industrial zoned 428-acre boundary of the existing BP Carson Refinery. The nearest residential areas are located approximately 3,000 feet north, 4,700 feet southwest and 5,800 feet east. The project will be located entirely within the

Watson Cogeneration Facility. Therefore, the project and laydown area will not physically divide or disrupt any community within the city of Carson. In addition, the project will not involve the displacement of any existing development or result in new development that would physically divide an existing community. (Ex. 200, p. 4.5-7.)

As part of the certification process, the Energy Commission must determine whether a facility complies with all applicable state, regional, and local LORS. (Pub. Res. Code, § 25523(d)(1).) The Energy Commission must either find that a project conforms to all applicable LORS or make specific findings that a project's approval is justified even where the project is not in conformity with all applicable LORS. (Pub. Res. Code, § 25525.) Any conditions recommended by an agency are considered for inclusion in the conditions of certification for the project. (Ex. 200, pp. 4.5-8 - 4.5-11.)

Based on evidence in the record we find that the Watson Project is consistent with applicable LORS, the General Plan Land Use Element and the Zoning designation as well as the surrounding industrial land uses such as the existing the BP Carson refinery. Therefore, the project will not result in any physical land use incompatibilities with the existing surrounding land uses. (Ex. 200, pp. 4.5-8 - 4.5-11.)

A proposed siting location may be considered inappropriate if a new source of pollution or hazard is located in proximity to a sensitive receptor. From a land use perspective, sensitive receptor sites are those locations where people who would be more adversely affected by pollutants, toxins, noise, dust, or other project-related consequence or activity are likely to live or gather. Children, those who are ill or immune-compromised, and the elderly, are generally considered more at risk from environmental pollutants. Therefore, schools, along with day-care facilities, hospitals, nursing homes, and residential areas, are considered sensitive receptor sites for the purposes of determining a potentially significant environmental impact. (Ex. 200, p. 4.5-11.)

Depending on the applicable code, proximity is defined as "within 1,000 feet" of a school (Health & Saf. Code §§ 42301.6–42301.9) or within 0.25 mile of a sensitive receptor, under CEQA (14 Cal. Code Regs., §§ 2006 and 2008). Proximity is not necessarily a determining factor for a potentially significant impact, but is the threshold generally used to require further evaluation. (Ex. 200, p. 4.5-11.)

The Watson Project will be within one mile of residential neighborhoods, 10 schools, three parks, four day care centers, 12 churches, one nursing home and one fire station. Existing permitted industrial uses in the project area include the BP Carson refinery and the Watson Cogeneration Facility. (Ex. 200, p. 4.5-11.)

Once project construction is completed (26 months), the construction laydown and parking area will revert to the existing use of truck parking and storage. Therefore, land use impacts resulting from activities at the project site will be temporary and will not result in a significant project-related impact to any sensitive receptor location. (Ex. 200, pp. 4.5-11 - 4.5-12.)

From a land use perspective, the siting of the Watson Project at the existing location will be compatible with surrounding sensitive receptors. The **Air Quality, Hazardous Materials Management, Noise and Vibration, Public Health, Traffic and Transportation,** and **Visual Resources** sections provide detailed analyses of the dust, noise, public health hazards or nuisance, and adverse traffic or visual impacts on surrounding sensitive receptors. The analyses for these sections conclude that, with implementation of conditions of certification, there will be no unmitigated adverse impacts at any sensitive receptor location. In addition, based on the land use designation, zoning, and surrounding industrial developments the project will not result in a significant project-related impact to any sensitive receptor location. (Ex. 200, p. 4.5-12.)

3. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Cal. Code Regs., § 15065(a)(3)).

As noted above, existing projects in the vicinity of the Watson Project site include industrial facilities and uses. According to the City of Carson, five other projects are either proposed or approved within one mile of the project site: the Alameda Corridor Improvement Study; the Shell Oil Products U.S. Redevelopment; the Watson Safety, Compliance and Optimization Project; a mixed-use office, parking and recreational area located at 2254 East 223rd Street; and the expansion of an existing industrial facility located at 2116 E 220th Street. (Ex. 200, p. 8.4-9.)

The area in the vicinity of the Watson Project site is substantially built out. However, the project will be constructed on a site with four existing combustion turbine generators within a refinery and represents a similar land use type to the existing on-site and adjacent uses. Because the project is an allowable land use, discretionary land use entitlements such as a General Plan Amendment, zone change or a conditional use permits will not be required. Therefore, the Watson Project will not result in significant direct or indirect adverse land use impacts and will not combine with projects proposed within the City to result in significant cumulative impacts. (Ex. 200, p. 4.5-13.)

The Watson Project will not make a significant contribution to regional impacts related to new development and growth. The project is planned to serve the existing and anticipated electrical needs of the region by connecting to the existing electric system and other utility infrastructure. The land use effects of the project in combination with past, present and reasonably foreseeable projects in the area are not cumulatively considerable. Therefore, cumulative land use impacts will be less than significant. (Ex. 200, p. 4.5-13.)

In the **Socioeconomics** section of this Decision, census information shows that there are minority populations within six-miles of the project. For the Watson Project, the total population within the six-mile radius of the site is 778,090 persons, and the total minority population is 646,789 persons or 83.12 percent of the total population. The record does not disclose any significant adverse direct or cumulative Land Use impacts resulting from the construction or operation of the Watson Project. Accordingly, there are no Land Use environmental justice issues related to this project so no minority or low-income populations will be significantly or adversely impacted. (Ex. 200, p. 4.5-13.)

4. Public Comment

No public comment was received on the subject of land use in relation to the Watson Project.

FINDINGS OF FACT

1. The project site is designated Heavy Industrial by the City of Carson General Plan, and zoned Manufacturing, Heavy (MH) by the City of Carson Zoning Ordinance.

2. The existing zoning of the Watson Project site and vicinity is compatible with the proposed use.

3. The Watson Project will not result in a significant conversion of Farmland to non-agricultural use or conflict with existing agricultural zoning or Williamson Act contracts.

4. The Watson Project will not disrupt or divide the physical arrangement of an established community.

5. No new linear facilities will be constructed as the existing linear infrastructure for electric, sewer and water will be utilized.

6. The project will not preclude or unduly restrict existing or planned land uses.

7. The Watson Project is consistent with applicable LORS.

8. The project's cumulative land use impacts will be less than significant.

CONCLUSION OF LAW

The Watson Project is consistent with applicable LORS, the General Plan Land Use Element and the Zoning designation. The land use impacts of the Watson Project are less than significant, and therefore do not require any specific land use conditions to mitigate project impacts.

B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the project will affect the local area transportation network. The evidence of record includes an analysis of: (1) the roads and routes to be used for construction and operation; (2) potential traffic-related problems associated with the use of those routes; (3) the anticipated encroachment upon public rights-of-way during project construction; (4) the frequency of trips and probable routes associated with the delivery of hazardous materials; and (5) the possible effect of project operations on local airport flight traffic.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Vicinity

The project is within the existing Watson cogeneration facility site at 22850 South Wilmington Avenue, Carson, California. The site is located approximately 0.7 miles south of Interstate 405 (I-405) and is bounded by Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east.

Plant construction and operation traffic will use the existing transportation network within the project area, which consists primarily of city arterials, collectors, local roadways, and state-maintained freeways. I-405, Alameda Street, Wilmington Avenue, Sepulveda Boulevard, and East 223rd Street provide regional access to the site. (Exs. 1, pp. 5.11-2 – 5.11-3; 200, pp. 4.10-2 - 4.10-4.)

2. Roadway and Intersection Current Levels of Service

Five study area roadways and seven intersections were analyzed to determine pre-project operating conditions such as traffic volumes, turning movement counts, number of lanes at each intersection, volume/capacity (V/C) ratios, and levels of service (LOS). (Exs. 1, pp. 5.11-3 – 5.11-4; 200, p. 4.10-6.)

LOS is a qualitative measure that describes and quantifies the congestion level on a particular roadway or intersection in terms of such factors as speed. LOS is defined in categories ranging from A to F, with F representing the unacceptable worst condition of overcapacity operation. (Ex. 200, p. 4.10-4.)

The evidence shows that under pre-construction conditions, four of the study area roadway segments operate at LOS C or better during both morning and evening peaks and southbound I-405 between Alameda Street and Wilmington Avenue also operates at LOS C. Both directions of I-405 between Alameda Street and Wilmington Avenue operate at LOS D during the morning peak as does northbound I-405 between Alameda Street and Wilmington Avenue during the evening peak. (Exs. 1, pp. 5.11-5 – 5.11-7; 200, p. 4.10-5 [Table 3].)

The evidence also shows that all but one of the study area intersections operate at LOS C or better during the morning and evening peaks. The 223rd Street and Wilmington Avenue intersection operates at LOC E during the evening peak. (Exs. 1, p. 5.11-7; 200, p. 4.10-6 [Table 4].)

The city of Carson does not specify acceptable LOS thresholds for its roadway segments. (Ex. 200, p. 4.10-9.) Regarding intersections, both the city's General Plan Transportation and Infrastructure Element Policy and the Metropolitan Transportation Authority Congestion Management Plan identify LOS D as an acceptable LOS. (Ex. 1, p. 5.11-8; 200, p. 4.10-2.)

3. Construction Impacts and Mitigation

Construction will take about 26 months, with peak construction activities occurring in month 12. The average number of construction workers will be approximately 41 and the peak workforce will require approximately 80 workers. The majority of the construction workforce is expected to come from Los Angeles and adjoining counties, with workers likely commuting alone. (Exs. 1, pp. 5.11-8 - 5.11-10; 200, pp. 4.10-7 – 4.10-8.)

Existing paved public roadways will provide access from the construction laydown and parking area to the project site. These construction-related trips will follow a two-mile route going south on South Alameda Street to East Sepulveda Boulevard, then north on Wilmington Avenue to the project site. (Ex. 200, p. 4.10-14.)

Using information obtained from the city of Carson including growth projections and data about anticipated development, the Applicant and Staff projected pre-project baseline conditions (i.e., projected project traffic during construction month 12, but without the additional traffic generated from project construction or operation). Under the baseline conditions, all study area roadways will operate at acceptable LOS D or better and all but one study area intersection will operate at

LOS B or better. The intersection of 223rd Street and Wilmington Avenue is forecast to operate at LOS E during the evening peak. (Exs. 1, pp. 5.11-10 – 5.11-12; 200, p. 4.10-8.)

Guided by the baseline projections, the Applicant and Staff estimated project-related construction traffic impacts for the peak month of project construction (month 12) as this month represents the worst case scenario for project-related construction traffic. During construction month 12, there will be approximately 280 daily trips, with 131 peak morning trips and 131 peak evening trips to access the laydown area/project site. The evidence shows that even with these trips, all but one study area roadway will continue to operate at the same LOS as during pre-construction conditions. The roadway segment of eastbound Alameda Avenue between East 223rd Street and East Sepulveda Boulevard will change from LOS A to LOS B during the evening peak period. (Exs. 1, p. 5.11-13; 200, pp. 4.10-8 – 4.9-9.)

The evidence also shows that all study area intersections will continue operating at their respective pre-construction levels of service. (Exs. 1, p. 5.11-14; 200, p. 4.10-11.) Policy TI-2.1 of the city of Carson General Plan Transportation and Infrastructure Element provides that new projects may not cause the LOS for intersections to drop more than one level if it is already at Level A, B or C, and may not cause the LOS to drop at all if it is already at D or below, except when necessary to achieve substantial city development goals. (Ex. 200, p. 4.10-2.) The Metropolitan Transportation Authority deems LOS E as the minimum acceptable LOS for highway segments and key roadway intersections in its Congestion Management Plan. (Ex. 200, pp. 4.10-2, 4.10-12.) As discussed, project-related construction impacts will not trigger these significance thresholds.

Thus, project-related construction impacts will be less than significant on area roadways and intersections. The evidence supports a similar conclusion regarding public parking resources. Workers are expected to park in the designated temporary construction equipment laydown and parking area located within a paved 25-acre parcel approximately one mile southeast of the project site at the northeast corner of East Sepulveda Boulevard and South Alameda Street. Therefore, no construction-related parking will occur in or on public parking resources. (Exs. 1, p. 5.11-1; 200, p. 4.10-14.)

4. Operation Impacts and Mitigation

The current workforce for the BP Refinery will also serve as the workforce for the project and therefore, no additional daily traffic will be generated for project operations. (Ex. 200, p. 4.10-9.) As a result, there will be no operation-related impacts to study area roadways or intersections. Nor will there be impacts to parking resources serving the project area.

5. Airports – Impacts and Mitigation

The project site is within four miles of two airports. The Zamperini Field Airport is approximately 3.8 miles southwest and the Long Beach Airport is approximately 3.9 miles to the east. Both airports provide general aviation activities and Long Beach Airport also serves limited commercial flights. (Ex. 200, pp. 4.10-6 – 4.10-7.)

The evidence explains that power plants near airports can potentially affect low flight aircraft by creating turbulence or creating height-related obstructions. However, Staff's analysis shows that there are no potential turbulence-related impacts on low flying aircraft that might arise from thermal plumes caused by the projected main gas turbine/HRSG operation or wet cooling tower exhaust. (Ex. 200, p. 4.10-12.)

The evidence also establishes that because the project will not include structures taller than 200 feet, it will not exceed obstruction standards, be a hazard to air navigation, or trigger the need for the project owner to complete a Federal Aviation Administration Form 7460 or obtain a FAA Determination of No Hazard to Navigable Airspace. (Ex. 200, p. 4.10-12.)

6. Alternative Transportation and Public Safety– Impacts and Mitigation

The nearest rail line is approximately 1,100 feet north of the project site. The nearest transit bus lines are approximately 1,500 feet east and 1,800 feet west of the project site. (Exs. 1, p. 5.11-3; 200, p. 4.10-6.) Due to the distance between the project site and the railway and bus lines, these modes of transportation will not be directly impacted by construction or operation traffic.

Sidewalks are generally present on one or both sides on all local roadways serving the project site (Alameda Street, 223rd Street, Wilmington Avenue, and Sepulveda Boulevard). Although field observations near the project site revealed

light pedestrian activities in the vicinity of the site and no designated bicycle routes exist within the immediate vicinity of the project site and adjacent project area, it is important nonetheless to ensure pedestrian and bicycle safety along local roadways to be used during project construction. (Exs. 1, p. 5.11-3; 200, p. 4.10-6.) Condition of Certification **TRANS-1** requires the project owner to prepare a construction traffic control plan to include provisions for bicycle safety from the vehicle travel route between construction parking and staging area to the project site and provisions that identify safety procedures for exiting and entering the site access gate. With implementation of **TRANS-1**, less than significant impacts would occur to pedestrians or cyclists during project construction and operation. (Ex. 200, p. 4.10-14.)

7. Hazards and Public Safety

Implementation of the traffic control plan required by Condition of Certification **TRANS-1** will also minimize potential hazards arising from construction-related vehicles entering and exiting the project site and construction staging area. The plan must contain elements that address matters including the timing of heavy equipment and building materials deliveries; redirecting construction traffic with a flag person if required; signing, lighting, and traffic control device placement if required; and, identification of safety procedures for exiting and entering the site access gate and construction parking and staging area.

Construction traffic also creates potential safety hazards for the public arising from unexpected damage to roads by vehicles and equipment within the project area. Implementation of Condition of Certification **TRANS-2,** which requires the project owner to repair any road damaged by project construction to its original condition, will ensure that any damage to local roadways will not be a safety hazard to motorists.

The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. Implementation of Condition of Certification **TRANS-3** will ensure compliance with all applicable laws pertaining to oversize vehicles as it requires all such vehicles used on public roadways during construction comply with Caltrans, city of Carson, and other relevant jurisdictions' limitations on vehicle sizes and weights, as well as oversize vehicle routes and any other applicable limitations or other relevant jurisdictional policies.

Thus, implementation of Conditions of Certification **TRANS-1** through **TRANS-3** will ensure that the project results in less than significant hazard and safety impacts to the public.

8. Transport of Hazardous Materials

During project construction, small quantities of hazardous materials will be delivered to the project site and construction waste products will be hauled from the site. As more fully discussed in the **Hazardous Materials Management** section of this Decision, the potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal, state, and local laws. (Ex. 200, pp. 4.10-2, 4.10-13.)

9. Emergency Access

In the event of an emergency at the project site during construction or operation, emergency vehicles are expected to use Wilmington Avenue and existing BP Refinery driveways to access the project site. To maintain access for emergency vehicles and allow for adequate access into and within the facility, the project owner must comply with the Condition of Certification **TRANS-1** requirement for a construction traffic control plan that ensures access for emergency vehicles into and within the project site. Additional discussion of emergency services serving the facility is contained in the **Worker Safety and Fire Protection** section of this Decision. (Ex. 200, p. 4.10-13.)

10. Cumulative Impacts

A project may result in significant adverse cumulative impacts where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effect of probable future projects. (Cal. Code Regs., tit. 14, §§ 15130, 15065.)

As discussed above, construction impacts were evaluated using a worst-case peak construction-activity scenario. The evidence shows that the baseline conditions were developed with input from the city of Carson. This input included information about anticipated future development and growth within the project study area, including two roadway and intersection improvement projects (the I-

405 and Wilmington Avenue project and the East 223rd Street Capital Improvement Project). Therefore, the above-discussed project induced roadway congestion projections reflect an analysis of cumulative impacts of combined, anticipated projects. (Ex. 200, p. 4.10-14.)

The evidence shows that construction-related traffic and activities associated with the project would not result in cumulative traffic impacts because the project would not result in a decrease in LOS from the projected baseline conditions. And, as discussed above, construction traffic associated with the project would only temporarily degrade the segment of eastbound Alameda Avenue between East 223rd Street and East Sepulveda Boulevard during the evening peak period from LOS A to LOS B when compared to the baseline projections without project levels. Because construction related traffic is temporary and short-term, the temporary degradation of this roadway segment to LOS B does not have the potential to contribute to significant cumulative traffic impacts. Therefore, the project's cumulative contribution to this impact is considered less than significant.

Because project operations will not require daily trips beyond those currently occurring for BP Refinery operations, project operations will result in negligible traffic impacts. Thus, the project's only contribution to the area traffic network would be from temporary construction related trips as discussed above. (Ex. 200, p.4.10-15.)

We anticipate that all cumulative project development to occur in the future within the city of Carson and in the surrounding area would include environmental review and mitigation similar to that for the project (e.g., the development of a construction traffic control plan) and would require approval from all affected jurisdictions and agencies. This mitigation and approval would reduce project level transportation and traffic impacts of cumulative development as well as project-specific transportation and traffic impacts of cumulative projects. (Ex. 200, p. 4.10-15.)

The city of Carson has noted five other projects which are either proposed or approved within one mile of the project site:

- Alameda Corridor Improvement Study;
- Shell Oil Products U.S. Redevelopment;
- Watson Safety, Compliance and Optimization Project;
- a mixed-use office, parking and recreational area located at 2254 East 223rd Street; and
- expansion of an existing industrial facility located at 2116 E 220th Street.

These projects have the potential to increase the existing traffic levels in the vicinity of the Watson project. However, potential cumulative impacts would not be significant due to the existing acceptable LOS in the area, in combination with TRANS-1, which requires the applicant to consult with the city on the project's Construction Traffic Control Plan.

Furthermore, with implementation of Conditions of Certification **TRANS-1** through **TRANS-3**, the project's potential to contribute cumulatively to roadway hazards, physical damage to local transportation facilities, parking, and alternative transportation impacts will be further reduced to ensure that the project's cumulative contribution to these impacts is less than significant.

11. Environmental Justice

The evidence shows that all significant direct or cumulative impacts specific to traffic and transportation resulting from the construction or operation of the project would either be less than significant or with the implementation of the conditions of certification be reduced to less than significant levels. Therefore, the project would not result in significant and unavoidable disproportionate transportation and traffic related impacts to the low-income or minority populations discussed in the **Socioeconomics** section of this Decision. (Ex. 200, p. 4.10- 15.)

12. Compliance with LORS

The evidence shows that the project will comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision. Implementation of Conditions of Certification **TRANS-1** through **TRANS-3** will ensure project consistency with a law, ordinance, regulation, or standard where it was not already mandated by federal or state regulations. (Ex. 200, pp. 4.10-17- 4.10-18.)

FINDINGS OF FACT

We find and conclude as follows:

1. The additional traffic associated with operation of the project will not significantly affect existing levels of service for roads in the project vicinity.

2. Development and implementation of a construction traffic control program will offset any temporary, short-term increases in congestion resulting from construction of the project.

3. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws.

4. Implementation of the Conditions of Certification below ensures that both construction and operation of the project will comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision.

5. Implementation of the Conditions of Certification below ensures that any temporary project impacts on traffic will be reduced to less than significant levels.

CONCLUSION OF LAW

We therefore conclude that construction and operation of the project, as mitigated herein, will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall consult with the city of Carson and prepare and submit to the Compliance Project Manager (CPM) for approval a construction traffic control plan and implementation program. The traffic control plan must be prepared in accordance with Caltrans Manual on Uniform Traffic Control Devices and the WATCH Manual and must include but not be limited to the following issues:

- timing of heavy equipment and building materials deliveries;
- redirecting construction traffic with a flag person if required;
- signing, lighting, and traffic control device placement if required;
- ensurance of access for emergency vehicles into and within the project site;
- ensurance of pedestrian and bicycle safety from vehicle travel route between construction parking and staging area to the project site;
- specification of construction-related haul routes and employee

commute routes, construction worker, equipment, and material delivery/haul route from their points of origin to Alameda Avenue and toward the off-site Construction Laydown and Parking Area, avoiding residential neighborhoods to the maximum extent feasible; and

- identification of safety procedures for exiting and entering the site access gate and construction parking and staging area.

Verification: At least 30 days prior to site mobilization, the project owner or contractor shall provide a construction traffic control plan to the CPM for review and approval.

TRANS-2 The project owner shall enter into a secured agreement with the city of Carson to ensure that any roads that are demonstrably damaged by project construction-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed per requirements of the City of Carson Public Works Department.

Verification: At least 30 days prior to site mobilization, the project owner or contractor shall provide a copy of said agreement to the CPM. Within 30 days after completion of the project, the project owner shall meet with the CPM and city of Carson to determine and receive approval for the actions necessary and schedule to complete any necessary 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 City of Carson Public Works Department stating its satisfaction with any required road repairs.

TRANS-3 The project owner shall comply with Caltrans, city of Carson, and other relevant jurisdictions limitations on vehicle sizes, weights, and travel routes and obtain any permits required for these actions. In addition, the project owner shall obtain all necessary transportation permits from Caltrans, city of Carson, and other relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall indicate that all required permits were obtained and list the jurisdictions they were acquired from, or indicate if no permits were necessary, during that reporting period. In addition, the project owner shall retain copies of all acquired permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

C. SOCIOECONOMICS

This section analyzes the potential impact to the social and economic structure within the project vicinity and region resulting from the construction and operation of the Watson Project. This analysis considers project-related impacts to population, housing, public services (fire protection, emergency response services, law enforcement, schools, and medical services) and utilities, county tax revenue, and economic benefits from the project. Additionally, this section analyzes the cumulative impacts on the availability of labor within the area. The criteria to be used in determining whether project-related socioeconomic impacts would be significant are set forth in CEQA Guidelines, Appendix G.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Demographics, Services and Finances

The Watson plant site is located in the city of Carson, approximately 0.7 mile south of the 405 Freeway, in Southern California. The Watson Project is a 2.5-acre brown field site located within the boundary of the existing Watson Cogeneration Facility, which is a 21.7-acre area within the 428-acre parcel. The project address is 1801 Sepulveda Boulevard, Carson, California. The plant site is bounded by East 223rd Street to the north, Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east. The project is owned by the Watson Cogeneration Company and will be operated by BP West Coast Products, LLC – BP Carson Refinery. The project area is surrounded by existing refineries and industrial facilities. (Ex. 200, p. 4.8-2.)

The city of Carson is located approximately 16 miles south of downtown Los Angeles. Carson is bordered to the east by the cities of Long Beach and Los Angeles, to the west by the city of Torrance and to the south by the Los Angeles Harbor. (Ex. 1, p. 5.9-1.) The closest residential neighborhood is approximately 3,000 feet from the project site. (Ex. 200, p. 4.8-2.)

The record indicates that project construction will take place over a 26-month period. The greatest number of construction workers (peak) will occur in the twelfth month of construction. The number of construction workers would range from about one in the last month of construction to approximately 80 workers at peak construction. The average workers per month would be 41 workers during construction. (Exs. 1, p. 5.10-30; 200, p. 4.8-6.)

Project operation will not require additional full-time employees at the Watson plant site. (Ex. 1, p. 5.10-30.) The operation workers will likely commute to the project site from Los Angeles County and the surrounding communities of Ventura, Kern, San Bernardino and Orange County. (Ex. 200, p. 4.8-6.)

Due to the availability of a local workforce, the construction and operation workforce will not induce substantial growth or concentration of population, and the Watson Project will not cause people to permanently move to the area. The Watson Project will have no direct or indirect impact on population growth in a new area. (Ex. 200, p. 4.8-6.)

For January 2008, there were approximately 3,403,480 housing units in Los Angeles County. The vacancy rate for this housing averages about 4.2 percent. There are approximately 142,946 housing units which includes single-family, multi-family, and mobile homes in Carson, where there are also 255 hotel and motel rooms. Given the vacancy rate for the Los Angeles area, Carson would yield 191 hotels and motel rooms. (Exs. 1, p. 5.10-33; 200, pp. 4.8-6 - 4.8-7.)

Eighty percent of the average construction workforce of 41 (or approximately 33 workers) will likely be hired from Los Angeles County. The evidence assumed that 25 percent (two workers) of the non-local workers will relocate and 75 percent (six workers) will commute on a daily or weekly basis. (Ex.1, p.5.10-32.) We find the supply of available permanent and temporary housing adequate to accommodate the construction workers expected to relocate. The project is located in an industrial area, within the boundary of an existing refinery property. Because the 2.5-acre Watson Project site is located within the existing 21.7-acre Watson Cogeneration Facility, there will be no displacement of existing housing or need for construction of replacement housing elsewhere. (Ex. 200, p. 4.8-7.)

Operation of the Watson Project will not require any new workers. We find that there will be no significant adverse socioeconomic impacts related to housing resources as a result of the Watson Project. (Ex. 200, p. 4.8-7.)

All indirect and induced operation impacts will result from annual operations and maintenance expenditures. The economic benefits of the Watson Project are shown below in **Socioeconomics Table 1**. (Ex. 200, p. 4.8-11.)

Socioeconomics Table 1 - Noteworthy Public Benefits

Socioeconomics Table 1, Watson Economic Benefits (2008 dollars)	
Fiscal Benefits	
Estimated annual property taxes	$1.7 million to $2.0 million
State and local sales taxes: Construction	$536,250
State and local sales taxes: Operation	$25,000 annually
School Impact Fee	$4,183 to the Los Angeles Unified School District
Non-Fiscal Benefits	
Total capital costs	$125.5 million to $155.5 million
Construction payroll	$14.5 million
Annual Operations and Maintenance	
Construction materials and supplies	$6.5 million
Operations and maintenance supplies	$300,000 annually
Direct, Indirect, and Induced Benefits	
Estimated Direct	
Construction	41 workers (average per month)
Operation	N/A
Estimated Indirect and Induced	
Construction Jobs	109
Construction Income	$5.5 million
Construction Output	$15.8 million
Operation Jobs	0.5 jobs
Operation Income	$28,000
Operation Output	$85,000

Source: Ex. 200, p. 4.8-12.

The current property tax rate for the project is approximately 12 percent. The current assessed value is $146 million. Los Angeles County collected $1.8 million in property taxes from the existing project site. The $1.8 million represents 0.02 percent of the county's total property tax revenue for the 2006-2007 fiscal year. Project construction would add $140 million to $170 million to the current assessed value of $146 million. Using the property tax rate of 1.2 percent, the estimated increase in property tax revenue that would accrue to Los Angeles County annually would be approximately $1.7 million to $2.0 million. (Ex. 1, p. 5.10-36.)

The analysis contained in the record considers the increase in employment and the increase in sales tax and generation of secondary jobs and income. The evidence establishes that since the workforce will likely commute to the project, workers will not place an undue stress upon available housing. Similarly, the

evidence establishes that existing recreational, educational, police, medical, and emergency services will not be adversely impacted. (Ex. 200, pp. 4.8-7 - 4.8-9.)

2. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., tit. 14, § 15130.) In a socioeconomic analysis, cumulative impacts could occur when more than one project in the same area has an overlapping construction schedule, thus creating a demand for workers that cannot be met locally. An increased demand for labor could result in an influx of non-local workers and their dependents, resulting in a strain on housing, schools, parks and recreation, law enforcement and emergency services. (Ex. 200, p. 4.8-10.)

As shown in **Socioeconomics Table 2,** the total construction labor force by MSA for the region is more than sufficient to accommodate the labor needs for construction of power generation facilities and other large industrial projects. Because of the robust local and regional construction labor force, an influx of non-local workers and their dependents to the project area is unlikely. The evidence shows no significant impacts to housing, schools, parks and recreation, law enforcement, and emergency services. The construction or operation of the Watson Project will not contribute significantly to cumulative socioeconomic impacts.

Socioeconomics Table 2
Occupational Employment Projections by MSA

Construction and Extraction Occupations for Selected MSAs	Average Annual Employment for 2006	Average Annual Employment for 2016
Los Angeles County MSA	174,940	187,580
Ventura County MSA	21,970	22,700
San Bernardino County MSA ‘ (Part of Riverside-San Bernardino-Ontario MSA)	137,160	155,250
Kern County MSA	27,690	31,410
Orange County MSA	110,580	121,460
Source: EDD 2009 Projections of Employment by Industry and Occupation		

Source: Ex. 200, p. 4.8-10.

3. Environmental Justice

Section 65040.12 (e) of the Government Code defines “environmental justice” to mean “fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” In addition, federal guidelines encourage governmental agencies to incorporate environmental justice principles in the environmental review of this project.

The steps recommended by these guidance documents to assure that environmental justice concerns are addressed include: (1) outreach and involvement; (2) a demographic screening to determine the existence of a minority or low-income population; and (3) if warranted, a detailed examination of the distribution of impacts on segments of the population.

The record contains a demographic screening conducted in accordance with information contained in two documents: *Environmental Justice: Guidance Under the National Environmental Policy Act* (Council on Environmental Quality, 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* (National Council on Environmental Quality, 1998). The purpose of the demographic screening is to determine whether there exists a minority or low-income population within the potentially affected area. Minority populations exist, for purposes of an environmental justice analysis, where either:

- The minority population of the affected area is greater than 50 percent of the affected area’s general population; or
- The minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- One or more U.S. Census blocks in the affected area have a minority population greater than 50 percent.

Minority individuals, for present purposes, are those who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. The below poverty-level-population was also based on the 2000 U.S. Census. (Ex. 200, pp. 4.8-2 - 4.8-3.)

For the Watson Project, the total population within the six-mile radius of the site is 778,090 persons, and the total minority population is 646,789 persons or 83.12

percent of the total population. The population below the poverty level within a six-mile radius of the Watson Project consists of 161,414 people or 21.37 percent of the total population in that area. (Ex. 200, pp. 4.8-2 - 4.8-3.)

The record shows the environmental justice population is greater than fifty percent within a six-mile radius of the Watson Project. We have considered environmental justice in the environmental impact analyses in the **Executive Summary** and the technical areas of **Air Quality**, **Hazardous Materials**, **Land Use**, **Noise**, **Public Health**, **Soil and Water**, **Traffic/Transportation**, **Transmission Line Safety/Nuisance**, **Visual Resources**, and **Waste Management** of this Decision. (Ex. 200, p. 4.8-3.)

The record does not disclose any significant, direct, or cumulative socioeconomic impacts from the construction or operation of the Watson Project. We find that there are no environmental justice issues related to this project and that no minority or low-income populations will be significantly or adversely impacted. In light of our finding that all Watson Project significant impacts are mitigated below significance, we find the Watson Project will not cause or contribute to disproportionate impacts upon minority or low income populations.

4. Public Comment

Mia McNulty, representing the community as well as the Carson-Torrance branch of the NAACP, expressed concerns about high levels of asthma for elderly and small children in the area, who are missing school and requiring emergency medical care. (11/1/11 RT 66:21-67:3.)

We noted above that the evidence shows that existing educational, medical, and emergency services will not be significantly impacted by the Watson Project. These health concerns are also addressed in the **Air Quality** and **Public Health** sections of this Decision.

FINDINGS OF FACT

1. The Watson Project will draw primarily upon the local labor force from Los Angeles County for the construction and the operation workforce.
2. The project will not cause an influx of a significant number of construction or operation workers into the local area.

3. The project is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.
4. The project will have a construction payroll of approximately $14.5 million.
5. The Watson Project will result in local direct, indirect, and induced benefits; both fiscal and non-fiscal.
6. The project will likely result in generation of secondary jobs and income and increased revenue from sales taxes due to construction activities.
7. Construction and operation of the project will not result in any direct, indirect, or cumulatively considerable socioeconomic impacts.
8. The analysis of record has been performed in conformity with Federal environmental justice guidelines.
9. Minority populations exist within a six-mile radius of the site; however, the Watson Project will not cause or contribute to disproportionate impacts upon minority or low income groups.
10. Siting of the Watson Project and the analysis thereof, are consistent with the principles underlying environmental justice.
11. The Watson Project's contribution to cumulative impacts, in conjunction with the impacts from other reasonably foreseeable projects, is adequately addressed in the evidence of record and in appropriate portions of this Decision.

CONCLUSION OF LAW

Implementation of the following Condition of Certification ensures that the Watson Project will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision, and that the project will not cause indirect, direct, or cumulative significant noise impacts.

CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner shall pay the one-time statutory school development fee to the Los Angeles Unified School District as required by Education Code section 17620.

Verification: At least 30 days prior to start of project construction, the project owner shall provide the Compliance Project Manager (CPM) proof of payment of the statutory development fee.

D. NOISE AND VIBRATION

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting, which has the potential to cause structural damage and annoyance. This section analyzes whether noise and vibration produced during project construction and operation will be sufficiently mitigated to comply with applicable law.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Watson Project site is located approximately 0.7 mile south of the 405 Freeway, roughly bounded by Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east. Because the site is located within the existing refinery property boundary, the project site and surrounding areas are highly developed, and have been subject to disturbance for many years (Ex. 1, p. 5.12-1).

There is a residential neighborhood approximately 3,000 feet to the north of the project site (Ex. 1, p. 5.12-5). The project area is zoned Heavy Manufacturing and is surrounded by existing refineries, intermodal transit yards, several freight rail lines, and other industrial facilities. Land uses of adjoining and nearby properties within one mile of the project site are varied, consisting of industrial, commercial, and residential properties. (Ex. 200, p. 4.6-4.)

Noise sources in the vicinity of the project site consist of roadways, airports (Compton and Long Beach Airports), stationary sources (including industrial, commercial, and construction activity), and railways (including Union Pacific Railroad, Burlington Northern Santa Fe, the Alameda Corridor, and the Los Angeles Metro Blue Line). The record shows that the most pervasive noise source within the city, including the project area, is vehicular traffic due to large volumes of truck traffic and rail line operations. Field noise measurements, conducted in 1999 and documented in the General Plan, indicate noise levels from vehicular traffic greater than 65 dBA L_{eq} at all measured locations. (Ex. 200, p. 4.6-4.)

The evidence included the results of an ambient noise survey conducted from July 8 through July 9, 2008, which was used to establish a baseline for comparison of predicted project noise to existing ambient noise. Measurements were taken at various times throughout the day and night at the following sensitive receptor locations:

1. Location LT-1: Near the residence located at 918 East Sepulveda Boulevard, approximately 4,000 feet southwest of the project site. This location was monitored continuously from 4:00 p.m. on July 8 through 4:59 p.m. on July 9, 2008.
2. Location LT-2: Near the wall separating Avalon Village from the adjacent industrial/business complexes off of Banning, near Squaw Peak Lane. This location is approximately 4,400 feet west of the project site. This location was monitored continuously from 4:30 p.m. on July 8 through 5:29 p.m. on July 9, 2008.
3. Location LT-3: Near the closest residential receptor at 1260 east 222nd Street, approximately 3,300 feet northwest of the project site. This location was monitored continuously from 4:30 p.m. on July 8 through 5:29 p.m. on July 9, 2008.
4. Location ST-1: In the parking lot of the Stephens Middle School, located at 1830 West Columbia Street, over 1,500 feet from the project's construction laydown and parking area and over one mile from the project site. This is the nearest school to the project site. This location is also the nearest noise-sensitive receptor to the project construction laydown and parking area. Three15-minute measurements were taken at this location during the survey period.
5. Location ST-2: This measurement location was situated at the dead end of Hesperian Avenue. This location represents the nearest residential location east of the project site, over one mile from the project site. It also represents the second closest noise receptor to the project construction laydown and parking area. Three15-minute measurements were taken at this location during the survey period.

Noise Table 1 summarizes the ambient noise measurements (Ex. 1 § 5.12.1.3; Tables 5.12-4, 5.12-5, 5.12-6, 5.12-7).

Noise Table 1
Summary of Measured Ambient Noise Levels

Measurement Sites	Measured Noise Levels, dBA		
	Lowest Level L_{50}[1]	Average During Daytime Hours[2] L_{eq}	Nighttime Hours L_{90}
LT-1, Residence at 918 East Sepulveda Boulevard, Approximately 4,000 Feet Southwest of Project Site	50[3]	62	48[3]
LT-2, Avalon Village, Approximately 4,400 Feet West of Project Site	48[3]	63	46[3]
LT-3, Residence at 1260 East 222nd Street, Approximately 3,300 Feet Northwest of Site	55[3]	65	55[3]
ST-1, Stephens Middle School, more than One Mile East of Project Site	50	52	48
ST-2, Approximately One Mile East of Project Site	50	54	55

Source: Ex. 1, Tables 5.12-4, 5.12-5, 5.12-6, 5.12-7, 5.12-17.
1. The noise levels that are exceeded 50 percent of the time.
2. Staff calculation of average of the daytime hours (7 a.m. to 10 p.m.).
3. Staff calculations of average of four quietest consecutive hours of the nighttime (see Ex. 200, p. 4.6-23, APPENDIX A).

DIRECT IMPACTS AND MITIGATION

1. Noise

a. Construction

Construction noise is by nature a temporary phenomenon. Construction of the Watson Project is expected to be typical of similar projects in terms of schedule, equipment used, and other types of activities, approximately 18 months. (Ex. 200, p. 4.6-7.)

The evidence presents a prediction of the noise impacts of project construction on the nearest sensitive receptors. A comparison of construction noise estimates to measured ambient conditions is summarized below in **Noise Table 2**. (Ex. 200, p. 4.6-7.)

Noise Table 2
Predicted Construction-Related Noise Levels

Receptor	Highest Construction Noise Level (dBA) [1]	Measured Existing Ambient, Average Daytime L_{eq} (dBA) [2]	Project Plus Ambient	Change
LT-1	50	62	62	0
LT-2	49	63	63	0
LT-3	52	65	65	0
ST-1	51	52	55	+3
ST-2	49	54	55	+1

Source: Ex. 200, p. 4.6-7.

As seen in the last column of the table, construction noise would increase the existing ambient noise level at the project's identified noise-sensitive receptors by 0-3 dBA. An increase of 3 dBA is barely noticeable and the record establishes that this increase is less than significant. Nevertheless, Conditions of Certification **NOISE-1** and **NOISE-2**, establish a public notification and noise complaint process to resolve any complaints regarding demolition and construction noise.

Noisy construction activities would be limited to daytime hours. Implementation of Condition of Certification **NOISE-6** would ensure that these hours are, in fact, adhered to, in compliance with the LORS.

Typically, the loudest noise encountered during construction, inherent in building any project incorporating a steam turbine, is created by the steam blows used to flush debris from the system. High pressure steam blows, if unsilenced, can typically produce noise levels as high as 129 dBA at a distance of 50 feet; this would amount to roughly 92 dBA at LT-3, the nearest sensitive receptor. With a silencer installed on the steam blow piping, noise levels are commonly attenuated to 89 dBA at 50 feet; this would yield approximately 52 dBA at LT-3. A silencer installed on the steam blow piping would effectively reduce the noise at all sensitive receptors. (Ex. 200, p. 4.6-9)

A quieter steam blow process, referred to as *low pressure steam blow* and marketed under names such as QuietBlow™ or Silentsteam™, has become popular. This method utilizes lower pressure steam over a continuous period of about 36 hours. Resulting noise levels reach about 86 dBA at 50 feet. (*Id*.)

Implementation of Condition of Certification **NOISE-7** would ensure steam blows would not create a significant adverse noise impact at the noise-sensitive receptors.

With implementation of the mitigation measures described herein, we find the noise impacts of the Watson Project construction activities will be less than significant.

The Applicant has acknowledged the need to protect construction workers from noise hazards and has recognized applicable LORS that would protect construction workers (Ex. 1, § 5.12-24). To ensure that construction workers are, in fact, adequately protected, we will impose Condition of Certification **NOISE-3**. (Ex. 200, p. 4.6-10.)

b. Operation

The primary noise sources of the Watson Project will be the turbine generators, cooling tower, electric transformer, and various pumps and fans. The overall noise generated by these various noise sources are based on the configuration of the sources, the number and power rating of the equipment, and any noise-reducing measures incorporated. (Ex. 200, p. 4.6-10.)

In addition, the project avoids the creation of annoying tonal (pure-tone) noises by balancing the noise emissions of various power plant features during plant design (Ex. 1, p. 5.12-15 – 5.12-17; Ex. 200, p. 4.6-10).

The Applicant submitted evidence of noise modeling to determine the project's noise impacts on sensitive receptors and predicted operational noise levels as summarized in **Noise Table 3** below. (Ex. 200, p. 4.6-11)

Noise Table 3
Predicted Operational Noise Levels at all
Identified Sensitive Residential Receptors and LORS

Receptor/ Distance	Operational Noise Level (dBA)	Applicable LORS Limit (Lowest Existing Ambient) L_{50}	Project in Excess of LORS
LT-1	44	50	0
LT-2	45	48	0
LT-3	48	55	0
ST-1	38	50	0
St-2	40	50	0

Source: Ex. 200, p. 4.6-11.

As shown by the Table, the project will not exceed the prescribed limits at any of the sensitive receptors. Condition of Certification **NOISE-4** ensures compliance with local LORS.

The evidence has addressed predicted operational noise by comparing predicted power plant noise levels to the ambient night-time background noise levels at the nearest sensitive receptors. The predicted operational noise levels are shown in **NOISE Table 4** below. (Ex. 200, p. 4.6-12.)

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Noise Table 4
Predicted Operational Noise Levels at all
Identified Sensitive Residential Receptors and CEQA

Receptor/Distance	Operational Noise Level (dBA)	Ambient Nighttime Hours L_{90}	Lowest Ambient Daytime level L_{eq} At School	Project Plus Ambient	Change
LT-1	44	48		49	+1
LT-2	45	46		49	+3
LT-3	48	55		56	+1
ST-1	38		52	52	0
ST-2	40	55		55	0

Sources: Ex. 200, p. 4.6-12.

Combining the ambient noise level of 48 dBA L_{90} (**Noise Table 4**, above) with the project noise level of 44 dBA at LT-1 results in 49 dBA L_{eq}, 1 dBA above the ambient. The record establishes that an increase of up to five dBA is a less-than-significant impact. Therefore, the above noise impact at LT-1 is less than significant. (Ex. 200, pp. 4.6-12 - 4.6-13.)

Combining the ambient noise level of 46 dBA L_{90} (**Noise Table 4**) with the project noise level of 45 dBA at LT-2 results in 49 dBA L_{eq}, three dBA above the ambient. Combining the ambient noise level of 55 dBA L_{90} (**Noise Table 4**) with the project noise level of 48 dBA at LT-3 results in 56 dBA L_{eq}, one dBA above the ambient. Combining the ambient noise level of 52 dBA L_{eq} (**Noise Table 4**) with the project noise level of 38 dBA at ST-1 results in 52 dBA L_{eq}, or no change in the ambient. Combining the ambient noise level of 55 dBA L_{90} (**Noise Table 4**) with the project noise level of 40 dBA at ST-2 results in 55 dBA L_{eq}, or no change in the ambient. Thus, project operation would have no significant noise impacts at any of these sensitive receptors. Condition of Certification **NOISE-4** ensures that the noise levels due to project operation will not exceed the ambient night time levels in **Noise Table 4**, second column. (Ex. 200, p. 4.6-13.)

One possible source of annoyance could be strong tonal noises. Tonal noises are individual sounds (such as pure tones) which, while not louder than permissible levels, stand out in sound quality. To ensure that tonal noises do not cause public annoyance, Condition of Certification **NOISE-4** will ensure the project will not create tonal noises. (Ex. 200, p. 4.6-10.)

All water and gas piping will lie underground and will be silent during operation. Noise effects from the electrical interconnection line typically do not extend beyond the right-of-way easement of the line and will thus be inaudible to any receptors. (Ex. 200, p. 4.6-13.)

2. Vibration

a. Construction

The only construction operation likely to produce vibration that could be perceived off-site would be pile driving. Pile driving will not cause perceptible vibration at any of the project's receptors, because they are located relatively far from where construction would occur. The Watson Project will likely require pile driving, using traditional techniques. Noise from pile driving is projected to be approximately 77 dBA at LT-3, the nearest sensitive receptor (Ex. 1, pp. 5.12 -19 -- 5.12-20). Thus, pile driving using traditional techniques can potentially cause a significant noise impact at the nearest noise-sensitive receptor. The record indicates that pile driving can be performed using a quieter process. The evidence identified several commercially available technologies that reduce pile driving noise by 20 to 40 dBA compared to traditional pile driving techniques. These include padded hammers, "Hush" noise-attenuating enclosures, vibratory drivers, and hydraulic techniques that press the piles into the ground instead of hammering them. (Ex. 200, pp. 4.6-9 – 4.6-10.)

To ensure that pile driving noise will not cause annoyance, we will impose Condition of Certification **NOISE-8**.

b. Operation

Vibration from an operating power plant could be ground-borne or air-borne. The operating components of the project consist of a high-speed gas turbine, compressors, and various pumps. All of these pieces of equipment must be carefully balanced in order to operate; permanent vibration sensors are attached

to the turbines and generators. Gas turbine generator facilities using the GE 7EA machine have not resulted in ground-borne or airborne vibration impacts. Further, the evidence established that none of the project equipment is likely to produce noticeable low frequency noise beyond the project site boundaries. (Ex. 200, pp. 4.6-13 - 4.6-14.)

Airborne vibration (low frequency noise) can rattle windows and objects on shelves and can rattle the walls of lightweight structures. However, none of the project equipment is likely to produce noticeable low frequency noise beyond the project site boundaries. This makes it highly unlikely that the Watson Project would cause perceptible airborne vibration effects at any offsite noise-sensitive receptor. (Ex. 200, p. 4.6-14.) Based on the record, we find that ground-borne or airborne vibration from the Watson Project will be undetectable by any likely receptor.

The project owner must protect plant operating and maintenance workers from noise hazards and commits to compliance with all applicable. Signs will 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 will be required and provided. To ensure that plant operation and maintenance workers are adequately protected, we impose Condition of Certification **NOISE-5**. For further discussion of proposed worker safety conditions of certification, please see the **Worker Safety and Fire Protection** section of this Decision. (Ex. 200, p. 4.6-14.)

3. Cumulative Impacts

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. (Ex. 200, p. 4.6-14.)

According to the city of Carson, five other projects are either proposed or approved within one mile of the project site: the Alameda Corridor Improvement Study; the Shell Oil Products U.S. Redevelopment; the Watson Safety, Compliance and Optimization Project; a mixed-use office, parking and recreational area located at 2254 East 223rd Street; and the expansion of an existing industrial facility located at 2116 E 220th Street. These projects have the potential to increase the existing noise levels in the area. The Watson Project will

increase the existing nighttime ambient noise levels during the four quietest consecutive hours of the nighttime by 0-1 dBA at four of the five sensitive receptors, and by 3 dBA at the fifth receptor location. Therefore, the future contribution of the Watson Project to the noise environment would be relatively minor. It is unlikely that all of the above projects would increase the late night and early morning ambient levels at a rate that would combine with the Watson Project to create a significant noise impact. (Ex. 200, p. 4.6-14.)

Additionally, Conditions of Certification **NOISE-1** and **NOISE-2** establish a public notification and noise complaint process to resolve any complaints regarding noise throughout the life of the project. Therefore, we find the project's cumulative noise impact to be less than significant.

PUBLIC COMMENT

No public comment was submitted regarding noise caused by the Watson power plant.

FINDINGS OF FACT

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

1. The most pervasive noise source within the city, including the project area, is vehicular traffic due to large volumes of truck traffic and rail line operations.

2. Construction and operation of the Watson Project will not significantly increase noise levels above existing ambient levels in the surrounding community.

3. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by employing measures such as sound reduction devices and limiting construction to day-time hours in accordance with local noise control laws and ordinances.

4. Condition of Certification **NOISE-3** will ensure that construction workers are adequately protected.

5. Operational noise will not cause significant adverse impacts to nearby residences.

6. The project owner will implement measures to protect workers from injury due to excessive noise levels during the operation of the Watson Project.

7. The Watson Project will not create ground or airborne vibrations which cause significant off-site impacts.

8. The Watson Project's cumulative noise impact will be less than significant.

9. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

CONCLUSION OF LAW

Implementation of the following Conditions of Certification ensure that the Watson Project will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision, and that the project will not cause indirect, direct, or cumulative significant adverse noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 Prior to the demolition of the existing structures at the project site, the project owner shall notify all residents and business owners within one mile of the project site boundaries and within one half-mile of the linear facilities, by mail or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: At least 15 days prior to the start of demolition, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide that telephone number.

NOISE COMPLAINT PROCESS

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

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise in the complaint;
- If the noise is project related, take all feasible measures to reduce the source of the noise; and
- Submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the CPM, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is performed and complete.

EMPLOYEE NOISE CONTROL PROGRAM

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of demolition, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the

project will not cause the noise levels due to plant operation alone, during the four quietest consecutive hours of the nighttime, to exceed an average of 44 dBA measured at or near monitoring location LT-1 (918 East Sepulveda Boulevard), an average of 45 dBA measured at or near monitoring location LT-2 (Avalon Village), an average of 48 dBA measured at or near monitoring location LT-3 (1260 East 222nd Street), and an average of 40 dBA measured at or near monitoring location ST-2 (as shown in **Noise Figure 2**). Also, the project owner shall ensure that the operation of the project will not cause the noise levels due to plant operation alone, during the daytime hours of 7 a.m. and 10 p.m., to exceed an average of 38 dBA measured at or near monitoring location ST-1 (Stephens Middle School).

No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

A. When the project first achieves a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring locations LT-1, LT-2, LT-3, or at a closer location acceptable to the CPM. This survey shall include short-term measurements twice during the daytime hours, and a four-hour continuous measurement during the four quietest consecutive hours of the nighttime, at monitoring location ST-2. This survey shall also include continuous measurements from 7 a.m. to 10 p.m. at monitoring location ST-1 (Stephens Middle School).

   Additionally, this survey shall include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

   The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

B. If the results from the noise survey indicate that the power plant noise at the affected receptor sites exceeds the above values during the above specified period(s) of time, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 30 days of the project first achieving a sustained output of 90 percent or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

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

OCCUPATIONAL NOISE SURVEY

NOISE-5 Following the project's attainment of a sustained output of 90 percent or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures to be employed in order to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

CONSTRUCTION RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times delineated below, unless a special permit has been issued by the City of Carson:

Mondays through Saturdays:	7 a.m. to 8 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance

with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to demolition, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

STEAM BLOW RESTRICTIONS

NOISE-7 If a traditional, high-pressure steam blow process is used, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 50 feet. The steam blows shall be conducted between 8:00 a.m. and 5:00 p.m. unless arranged with the CPM such that offsite impacts would not cause annoyance to noise receptors. If a low-pressure, continuous steam blow process is used, the project owner shall submit to the CPM a description of the process, with expected noise levels and planned hours of steam blow operation.

Verification: At least 15 days prior to the first steam blow, the project owner shall notify all residents and business owners within one mile of the project site. The notification may be in the form of letters, phone calls, fliers, or other effective means as approved by the CPM. The notification shall include a description of the purpose and nature of the steam blow(s), the planned schedule, expected sound levels, and explanation that it is a one-time activity and not part of normal plant operation.

PILE DRIVING MANAGEMENT

NOISE-8 The project owner shall perform pile driving using a quieter process than the traditional pile driving techniques to ensure that noise from these operations does not cause annoyance at monitoring locations LT-1, LT-2, LT-3, ST-1, and ST-2.

Verification: At least 15 days prior to first pile driving, the project owner shall submit to the CPM a description of the pile driving technique to be employed, including calculations showing its projected noise impacts at monitoring locations LT-1, LT-2, LT-3, ST-1, and ST-2.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Watson Cogeneration Steam and Electric Reliability Project (09-AFC-1)
NOISE COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number: _____
Date complaint received: _____ Time complaint received: _____
Nature of noise complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted: _____
Initial noise levels at 3 feet from noise source _____ dBA Date: _____ Initial noise levels at complainant's property: _____ dBA Date: _____ Final noise levels at 3 feet from noise source: _____ dBA Date: _____ Final noise levels at complainant's property: _____ dBA Date: _____
Description of corrective measures taken: Complainant's signature: _____ Date: _____
Approximate installed cost of corrective measures: $ _____ Date installation completed: _____ Date first letter sent to complainant: _____ (copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct: Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

E. VISUAL RESOURCES

Visual resources are the features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings, substantially affect a scenic vista or damage scenic resources, or create a new source of substantial light or glare affecting day or nighttime views in the area. (Cal. Code Regs., tit. 14, § 15382, Appendix G.)

Key Observation Points (KOPs) represent the most critical locations from which the project would be seen. These reflect, in particular, those key sensitive viewer groups most likely to be affected by the project. Assessments of project impact are determined from these KOPs.

KOPs are rated for their level of visual sensitivity to impact. Visual simulations of the project as seen from KOPs, along with field observations, are used to evaluate the projected levels of project contrast, dominance, and view blockage. In addition, the project is evaluated for conformance with applicable LORS. Local public policy pertaining to visual resources is also taken into account in determining levels of viewer concern.

As needed, conditions of certification are imposed to mitigate potentially significant impacts, and to ensure LORS conformance.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project consists of a 2.5-acre site, and a 25-acre off-site construction parking and laydown area. The project site is a brownfield, located within the boundary of the existing 21.7-acre facility, within the 428-acre parcel for the refinery. The project site is located at 22850 South Wilmington Avenue, Carson, California. Access to the site is via an entrance road on Wilmington Avenue, approximately 0.7 mile south of the 405 Freeway. The facility is completely surrounded by the refinery and is bounded by Wilmington Avenue to the west, 223rd Street to the north, South Alameda Street to the east, and East Sepulveda Boulevard to the south. No off-site improvements are currently planned for the Watson Project. Both the project and the refinery are zoned for heavy manufacturing. (Ex. 200, p. 4.12-6.)

The existing facility has four General Electric 7EA combustion turbine generators (CTGs), four heat recovery steam generators (HRSGs) and two steam turbine generators (STG). The project would add a fifth CTG with a single-pressure HRSG to the existing configuration. The new CTG would also be a General Electric 7EA, which would add a nominal 85 MW to the existing facility. The HRSG would be equipped with a supplementary duct burner with up to 447.9 MMBtu/hr heat input. The Applicant has not proposed to use any methods to abate visible plumes from the gas turbine/HRSG exhaust.

The most visually prominent feature of the project would be the 100-foot high HRSG. All other facilities would be 50 feet and shorter. The new HRSG, pipe racks and cooling towers would replicate the existing on-site structures in their dimensions, colors and textures. The two cooling tower cells would be added to each end of the existing row of seven cooling tower cells. Both the HRSG and exhaust stack and the cooling towers would be constructed out of non-reflective materials. The existing maintenance shop would be demolished and a new one constructed to the west of the control building. The metal structure would be painted white. The new 69-kV gas insulated substation (GIS) would be constructed in an existing parking lot adjacent to the existing office building and surrounded with unpainted masonry walls. Two new 230-kV/69-kV transformers would be surrounded by tan metal walls located in an existing parking lot northwest of the control building, and across the parking lot from two existing transformers. (Ex. 200, p. 4.12-7.)

1. Direct/Indirect Impacts and Mitigation

a. Construction Impacts

The Watson Project would use existing natural gas, water and sewer pipelines. Therefore, the project does not include these new off-site linear appurtenances. There would be minor changes associated with electrical transmission system. Two new GISs would be constructed to connect to the existing electric transmission system substation at the refinery. (Ex. 200, p. 4.12-12.)

Construction activities for the project would occur over an approximate 26-month period. As the project is built, the fifth train-structure would rise above the 6-foot fence to a height of 100 feet (same as other trains) and would be visible from the facility entrance area on Wilmington Avenue. Public visibility of the construction site and activities would be limited due to the location of the site within the

refinery and the presence of a six-foot-high fence around the refinery. The Watson Project site is set back from Wilmington Avenue such that most views of the facility are screened by refinery equipment and fencing. The entrance gate off of Wilmington Avenue is the only location where the facility is noticeable from street level. In general, motorists and pedestrians could experience short term views while passing by the refinery and facility entrance road off of Wilmington Avenue. Workers in the Watson Center buildings across the street from the entrance road may have views into the site, but the construction activity would not be highly noticeable due to the dominant industrial character of the area and the construction-like activities that occur on a regular basis at the refinery and the existing facility. Activities include truck and heavy equipment traffic around the site, employees walking around, noise from heavy equipment operation associated with refinery production, and exhaust emanating from numerous equipment exhaust pipes. (Ex. 200, pp. 4.12-12 – 4.12-13.)

Project construction activity is proposed to occur typically from 6:00 a.m. to 7:00 p.m. Monday through Saturday, although longer periods could occur. During nighttime construction periods, illumination that meets state and federal worker safety regulations would be required. As a result, there would be limited times during the construction period that the project site would be brightly illuminated at night. The existing facility and refinery are currently brightly illuminated at night, therefore construction night lighting for the project would not be readily noticeable from areas outside because construction lighting would appear against the background of the existing lighting. There are no residential uses within a 0.5 mile radius of the project. (Ex. 200, p. 4.12-13.)

Construction activities are anticipated to generate noise, dust, increased traffic and equipment and vehicle emissions associated with the demolition, removal, excavation and construction associated with the project. Nearby businesses, pedestrians and motorists may experience short-term visual effects associated with these construction activities. However, the effects would not be significant or adverse due to the short-term nature of the construction activities and the existing heavy industrial uses at the refinery that surround the site. Residential areas would not be affected by the visual effects of construction due to their distance (0.5 mi and greater) from the site. (Ex.200, p. 4.12-13.)

We find that Watson Project construction activities would result in less-than-significant visual effects due to the location of the project site within the refinery, and the industrial and commercial land uses that surround the refinery, and the

over half-mile distance from the nearest residential area. We also find that construction activities will not result in a long-term visual degradation. Overall, the project's construction activities generate a less than significant visual effect.

b. Operation Impacts

KOPs are selected to be representative of the most critical viewshed locations from which the project would be seen. Because it may not be feasible to analyze all the views in which a proposed project would be seen, it is necessary to select KOPs that would most clearly represent the major visual effects of the proposed project as they would be experienced by key sensitive viewing groups. KOP 1 is the view from the intersection of Wilmington Avenue at East Watson Center Road. The KOP 1 vicinity represents the primary public viewing location of the project site and the existing facility. The project site and the existing facility cannot be seen from other roads or public use areas, including the 405 Freeway, due to its location within the existing refinery. **Visual Resources Figure 1** shows the location of KOP 1 from an aerial perspective.

VISUAL RESOURCES FIGURE 1 - KOP 1 LOCATION

Watson Cogeneration Steam and Electric Reliability Project - KOP Locations

(Ex. 1, Fig. 5.13-2.)

CEQA Guidelines Appendix G lists impacts on scenic vistas, scenic resources, visual character or quality, and light or glare as the factors to be considered in analyzing a project's visual impacts. In this case the evidence shows that there are no scenic vistas and no scenic resources in the project viewshed. (Ex. 200, pp. 4.12-11 – 4.12-12.) We thus turn to a consideration of the project's operations impacts on the existing visual character or quality.

There has been a concerted effort by the city to maintain an attractive streetscape on Wilmington Avenue. The contrast of the highly industrial refinery area with the adjacent Watson Center development results in a low level of visual intactness and unity. While the Watson Center landscaping has an aesthetic vividness, the refinery has an industrial vividness due to its dominant size and heavy manufacturing character. (Ex. 200, p. 4.12-14.)

Visual Resources Figure 2 depicts the existing facility and Watson Project site as seen from the northwest corner of Wilmington Avenue at Watson Center Road, looking southeast. KOP 1 is approximately 100 feet northwest of the Watson Project site. KOP 1 provides the most unobstructed view there is of the project, at Wilmington Avenue at Watson Center Road. From this location, the refinery entrance driveway, chain link fencing, and barbed wire can be seen. A parking area associated with the refinery can be seen that adjoins to the north side of the entrance driveway, beyond which the four blue HRSGs associated with the existing facility rise into the sky. Most other structures at the facility, such as the existing maintenance shop (where the new HRSG will be located) and control building, are obscured from view from KOP 1 by intervening slatted chain link fencing and vehicle parking in the adjoining parking lot.

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VISUAL RESOURCES FIGURE 2

Watson Cogeneration Steam and Electric Reliability Project - KOP1: Existing View of BP Watson from KOP 1

(Ex. 1, Fig. 5.13-7.)

Visual Resources Figure 3 is a photo simulation of the proposed project as seen from KOP 1. The project would introduce into the KOP 1 viewshed a 100-foot-tall, 60 by 100 feet-wide, light-blue-colored box-like HRSG and cylindrical exhaust stack similar in form, line, color and texture to the four existing HRSGs. A white, 15 foot-high, 30 by 60 foot-wide maintenance shop would be located in front of the HRSG, against the existing six foot-high slatted chain link fence that surrounds the facility. Two new cooling tower cells, 55 feet in diameter by 50 feet high, would be added to the existing cooling tower cells where they would not be seen from outside the facility. The 69-kV GIS and 230/69-kV GIS would be enclosed; the 69-kV GIS would be within unpainted masonry block walls, and the 230/69-kV GIS within tan metal walls.

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VISUAL RESOURCES FIGURE 3

Watson Cogeneration Steam and Electric Reliability Project - KOP 1: Simulated View of BP Watson from KOP 1

(Ex. 1, Fig. 5.13-8)

The only portion of the Watson Project that would be readily visible to the public would be the new HRSG and exhaust stack from the KOP 1 viewshed. While the stack would add another heavy industrial character feature to an area that is already heavily industrialized, the scale, form and color of the HRSG would not dominate the view nor would it block or disrupt any scenic views or vista. (Ex. 200, p. 4.12-16.) There would be no substantial change in visual quality since the limited visibility of the project would not result in substantial alteration of the composition, vividness, unity, or intactness of the existing landscape setting. We therefore find that the introduction of project structures would not substantially degrade the existing viewshed of KOP 1. However, to ensure that the project's appearance is consistent with the existing structures, Condition of Certification **VIS-3** would require appropriate treatment of the surfaces of all project structures.

Project operation during times of darkness will require on-site nighttime lighting for safety and security. Since the project would be located within the existing facility and surrounded by the refinery, where nighttime, safety and emergency

lighting already exist, the additional construction, nighttime, safety and emergency lighting from the Watson Project would not be visually noticeable in the existing setting. (Ex. 200, p. 4.12-17.) To ensure that any new lighting contributes no more new light or glare than is necessary, Condition of Certification **VIS-2,** would limit lighting during operation and require all fixed-position lighting to be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass.

Visible water vapor plumes from the proposed nine-cell cooling tower, which is comprised of an existing seven-cell cooling tower with two cells added for this project, are predicted to occur less than 20 percent of seasonal daylight clear hours. It is predicted that when plumes do form, the additional two cells would increase the visible plume dimensions. (Ex. 200, p. 4.12-17.) However, visible water vapor plumes from the Watson gas turbine/HRSG are not predicted to occur under normal weather conditions. Therefore, we find that water vapor plumes will not have a significant visual impact.

2. Cumulative Impacts and Mitigation

Cumulative impacts can result from individually minor but collectively significant impacts from other existing or reasonably foreseeable projects taking place over a period of time.

As discussed above, the viewshed would not be significantly altered by the project. There are no views of a scenic resource that the project would impair since the project is surrounded by larger industrial structures. Visual quality would not be significantly diminished since the project exhaust stack would be similar in form, line and color as the existing exhaust stacks and therefore would not be readily noticeable to most observers. The incremental impact of the project would not be cumulatively considerable since the heavy industrial character of the refinery would continue to dominate the visual landscape along Wilmington Avenue. There are no known projects that would remove surrounding structures and make the project more visible and no known projects that would be visible within the same view as the project. For these reasons, we find that the project would not cause any cumulative visual impacts.

3. LORS compliance

The record establishes and, accordingly, we find that implementation of conditions of certification which incorporate various visual impact mitigation measures will result in the Watson Project being in compliance with all state, federal, and local LORS. Specifically Condition of Certification **VIS-1** would ensure the project will conform to the applicable LORS.

FINDINGS OF FACT

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

1. Construction will occur over approximately 26 months.
2. Construction activities will not result in a long-term visual degradation.
3. The project's potential impacts on visual resources were analyzed from one defined key observation point (KOP) near the project site.
4. No scenic vistas exist in the KOP 1 viewshed.
5. The Watson Project will not result in a substantial new source of light and glare that could adversely affect daytime and nighttime views.
6. The Watson Project will not have a significant impact on scenic resources.
7. The Watson Project will not result in a significant visual impact at KOP 1.
8. The combustion turbine generator (CTGs) includes a cooling tower which will result in minimal plume formation and less than significant visible plume frequencies.
9. The project owner will treat project surfaces with colors that minimize visual intrusion and contrast.
10. The visual effects of the Watson Project in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable.

CONCLUSIONS OF LAW

1. Implementation of the following conditions of certification will result in the project causing no significant direct, indirect, or cumulative impacts to visual resources.

2. The project will comply with all applicable laws, ordinances, regulations and standards regarding project design, architecture, landscaping, signage, and other requirements related to **Visual Resources**.

CONDITIONS OF CERTIFICATION

Landscape Screening

VIS-1 The project owner shall prepare and implement a landscape plan for the areas shown in red and green on Visual Resources Figure 4 of the Final Staff Assessment in accordance with Carson Municipal Code sections 9162.52(A)(1) and 9162.52(B)(1) regarding landscaping along public streets and in parking lot areas.

The landscape plan will provide interior landscaping of the refinery parking lot (area outlined in red on Visual Resources Figure 4) that is adjacent to Wilmington Avenue and north of the project. No less than five percent of the parking lot area shall be landscaped so as to provide shade for vehicles and to enhance visual attractiveness as seen from adjoining streets and walkways as called for in CMC section 9162.52(A)(1).

The landscape plan will provide landscaping along the public street and walkway on Wilmington Avenue and parallel with the refinery parking lot (green line on Visual Resources Figure 4). The existing landscaping will be supplemented and/or replaced such that the refinery will be adequately screened and aesthetically pleasing from the right-of-way of Wilmington Avenue as called for in CMC section 9162.52(B)(1).

The project owner shall submit to the compliance project manager (CPM) for review and approval and simultaneously to the city of Carson for review and comment, a landscaping plan whose objective is to provide an attractive visual screen from Wilmington Avenue of the refinery, facility, and the project. The plan shall include:

a) a detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the requirements stated above shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction;

b) a list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation

objectives, with the objective of providing the widest possible range of species from which to choose;

c) maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;

d) a procedure for monitoring for, and replacement of, unsuccessful plantings for the life of the project; and

e) the plan shall not be implemented until the project owner receives final approval from the CPM.

Verification: The landscaping plan shall be submitted to the CPM for review and approval and simultaneously to the city of Carson for review and comment at least 90 days prior to installation of the landscaping.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and simultaneously to the city of Carson a revised plan for review and approval by the CPM.

The planting must occur during the first optimal planting season following site mobilization. The project owner shall simultaneously notify the CPM and the city of Carson within seven days after completing installation of the landscaping, that the landscaping is ready for inspection.

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

Construction and Operational Lighting

VIS-2 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a) all lighting shall be of minimum necessary brightness consistent with worker safety and security;

b) all fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries); and

c) wherever feasible and safe and not needed for security, lighting shall be kept off when not in use.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection. If the CPM requires modifications to the lighting, within 15 days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

Within 48 hours of receiving a lighting complaint associated with the Watson Project, the project owner shall provide the CPM with a complaint resolution form as specified in the **General Conditions** section, including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form shall be included in the subsequent Monthly Compliance Report. Where a lighting complaint cannot clearly be identified as being associated with the project or the refinery, the project owner shall work cooperatively with the refinery to resolve the lighting complaint and report the resolution in the Monthly Compliance Report for the project.

Surface Treatment of Project Structures and Buildings

VIS-3 The project owner shall treat the surfaces of all project structures and buildings on site, including those of the existing power plant, visible to the public such that (a) their colors minimize visual intrusion and contrast by blending with existing structures; (b) their colors and finishes do not create excessive glare; and (c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective; and the insulators shall be non-reflective and non-refractive.

The project owner shall submit for CPM review and approval, a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

a) description of the overall rationale for the proposed surface treatment, including the selection of the proposed colors and finishes;

b) list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name and number, or according to a universal designation system;

c) one set of color brochures or color chips showing each proposed color and finish;

d) one set of 11” x 17” color photo simulations at life-size scale, of the treatment proposed for use on project structures, including structures treated during manufacture as well as those of the existing on-site

power plant, from KOP 1 (location shown on Figure 1 of the Final Staff Assessment);

e) specific schedule for completion of the treatment; and

f) a procedure to ensure proper treatment maintenance for the life of the project.

Verification: At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the city of Carson Planning Division for review and comment.

If the CPM determines that the plan requires revision, the project owner shall provide a plan with the specified revisions for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit one set of electronic color photographs from the same key observation point identified in (d) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify: (a) the condition of the surfaces of all structures and buildings at the end of the reporting year; (b) maintenance activities that occurred during the reporting year; and (c) the schedule of maintenance activities for the next year.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

APPENDICES

AIR QUALITY

Applicable LORS	Description
Federal	
40 Code of Federal Regulations (CFR) 52	Nonattainment New Source Review (NSR) requires a permit and requires Best Available Control Technology (BACT) and Offsets. Permitting and enforcement delegated to SCAQMD. Prevention of Significant Deterioration (PSD) requires major sources to obtain permits for attainment pollutants. A major source is defined as any one pollutant exceeding 250 tons per year, unless the source is a named PSD category (which the Watson Project is not), when the limit is 100 tons per year. Since the emissions from the Watson Project are not expected to exceed 250 tons per year, PSD does not apply. However, greenhouse gases trigger PSD review. See Greenhouse Gas Appendix.
40 CFR 60 Subpart KKKK	New Source Performance Standard for gas turbines: 15 parts per million (ppm) NOx at 15% O_2 and fuel sulfur limit of 0.060 lb SOx per million Btu heat input. BACT will be more restrictive. Enforcement delegated to SCAQMD.
40 CFR Part 70	Title V: Federal permit assuring compliance with all applicable Clean Air Act requirements. Title V permit application required within one year of start of operation. Permitting and enforcement delegated to SCAQMD. Watson would be required to amend their existing Title V permit to include the new unit.
40 CFR Part 72	Acid Rain Program. Requires permit and obtaining sulfur oxides credits. Permitting and enforcement delegated to SCAQMD.
State	
Health and Safety Code (HSC) Section 40910-40930	Permitting of source needs to be consistent with approved Clean Air Plan.
HSC Section 41700	Restricts emissions that would cause nuisance or injury.
HSC Sections 21080, 39619.8, 40440.14 (AB1318)	Requires the executive officer of the South Coast Air Quality Management District, upon making a specified finding, to transfer emission reduction credits for certain pollutants from the South Coast District's internal emission credit accounts to eligible electrical generating facilities.
Local – South Coast Air Quality Management District (SCAQMD)	
Regulation II: Permits	This regulation sets forth the regulatory framework of the application for issuance of construction and operation permits for new, altered and existing equipment.
Regulation IV: Prohibitions	This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events.

AIR QUALITY

Applicable LORS	Description
Local – South Coast Air Quality Management District (SCAQMD)	
Regulation VII: Emergencies	Establishes the procedures for reporting emergencies and emergency variances.
Regulation IX: Standards of Performance for New Stationary Sources	Regulation IX incorporates provisions of 40 CFR Part 60, Chapter I, and is applicable to all new, modified, or reconstructed sources of air pollution. Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary combustion turbines (Subpart KKKK). These subparts establish limits of PM10, SO_2, and NO_2 emissions from the facility as well as monitoring and test method requirements.
Regulation XI: Source Specific Standards	Specifies the performance standards for stationary engines larger than 50 brake horse power (bhp).
Regulation XIII: New Source Review	Establishes the pre-construction review requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards and that future economic growth in the SCAQMD is not unnecessarily restricted. However, this regulation does not apply to NOx or SOx emissions from certain sources, which are addressed by Regulation XX (RECLAIM).
Regulation XVII: Prevention of Significant Deterioration	This regulation sets forth the pre-construction requirement for stationary sources to ensure that the air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth.
Regulation XX: Regional Clean Air Incentives Market (RECLAIM)	RECLAIM is designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions.
Regulation XXX: Title V Permits	The Title V federal program is the air pollution control permit system required by the federal Clean Air Act as amended in 1990. Regulation XXX defines the permit application and issuance as well as compliance requirements associated with the program. Any new or modified major source which qualifies as a Title V facility must obtain a Title V permit prior to construction, operation or modification of that source. Regulation XXX also integrates the Title V permit with the RECLAIM program such that a project cannot proceed without both.
Regulation XXXI Acid Rain Permits	Title IV of the federal Clean Air Act provides for the issuance of acid rain permits for qualifying facilities. Regulation XXXI integrates the Title V program with the RECLAIM program. Regulation XXXI requires a subject facility to obtain emission allowances for SOx emissions as well as monitoring SOx, NOx, and carbon dioxide (CO_2) emissions from the facility.

GREENHOUSE GAS

Applicable LORS	Description
Federal	
40 Code of Federal Regulations (CFR) Parts 51, 52, 70 and 71	This rule "tailors" GHG emissions to PSD and Title V permitting applicability criteria.
40 Code of Federal Regulations (CFR) Part 98	This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2 equivalent emissions per year.
40 Code of Federal Regulations (CFR) Parts 51 and 52	Effective July 1, 2011, a stationary source that emits more than 100,000 TPY of greenhouse gases (GHGs) is also considered to be a major stationary source. A major modification is any project at a major stationary source that results in a significant increase in emissions of any PSD pollutant. A PSD pollutant is a criteria pollutant for which the area is not nonattainment (for SCAQMD, the PSD pollutants are SO2, PM10, PM2.5, NOx, CO, lead, and GHGs).
State	
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	This act requires the California Air Resource Board (ARB) to enact standards that will reduce GHG emission to 1990 levels by 2020. Electricity production facilities will be regulated by the ARB.A cap-and-trade program is being developed to achieve approximately 20 percent of the GHG reductions expected by 2020.
California Code of Regulations, tit. 17, Subchapter 10, Article 2, sections 95100 et. seq.	These ARB regulations implement mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)
Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 $MTCO_2$/MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs CO_2/MWh)

ALTERNATIVES

Applicable LORS	Description
State	
California Environmental Quality Act (CEQA)	The Energy Commission is required by agency regulations to examine the "feasibility of available site and facility alternatives to the applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment." (Cal. Code Regs., tit. 20, § 1765). The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations, section 15126.6(a), requires an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." In addition, the analysis must address the "no project" alternative. (Cal. Code Regs., tit. 14, § 15126.6, subd. (e).) The analysis should identify and compare the impacts of the various alternatives, but analysis of alternatives need not be in as much detail as the analysis of the proposed project. The range of alternatives is governed by the "rule of reason," which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative. (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(3).) However, if the range of alternatives is defined too narrowly, the analysis may be inadequate. (City of Santee v. County of San Diego (4th District 1989) 214 Cal. App.3d 1438.)
Warren-Alquist Act	The Warren-Alquist Act provides clarification as to when it may not be reasonable to require an applicant to analyze alternative sites for a project. An alternative site analysis is not required as part of an AFC when a *natural gas-fired thermal power plant* is (1) proposed for development at an existing industrial site, and (2) "the project has a strong relationship to the existing industrial site and therefore it is reasonable not to analyze alternative sites for the project." [Pub, Res. Code § 25540.6, subd. (b).]

BIOLOGICAL RESOURCES

Applicable LORS	Description
Federal	
Federal Endangered Species Act (Title 16, United States Code, sections 1531 et seq.; Title 50, Code of Federal Regulations, part 17.1 et seq.)	Designates and provides for the protection of threatened and endangered plant and animal species and their critical habitat. The administering agency is the U. S. Fish and Wildlife Service (USFWS).
Migratory Bird Treaty Act (Title 16, United States Code, sections 703–711)	Prohibits the take or possession of any migratory nongame bird (or any part of such migratory nongame bird), including nests with viable eggs. As defined, this includes nearly every nongame bird in the state. The administering agency is USFWS.
State	
California Endangered Species Act (Fish and Game Code, sections 2050 et seq.)	Protects California's rare, threatened, and endangered species. The administering agency is the California Department of Fish and Game (CDFG).
California Code of Regulations (Title 14, sections 670.2 and 670.5)	Lists the plants and animals that are classified as rare, threatened, or endangered in California. The administering agency is CDFG.
Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515)	Designates certain bird, mammal, reptile, amphibian, and fish species as fully protected, and prohibits take of such species. The administering agency is CDFG.
Nest or Eggs (Fish and Game Code, section 3503)	Prohibits take, possession, or needless destruction of the nest or eggs of any bird. The administering agency is CDFG.
Migratory Birds (Fish and Game Code, section 3513)	Prohibits take or possession of any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird. The administering agency is CDFG.
Local	
City of Carson General Plan, Conservation Element and Open Space Element	The City of Carson Planning Department achieves to conserve and enhance its key natural resources including, but not limited to, trees and vegetation, open space, water, and other natural resources. The City of Carson's 2004 General Plan Conservation and Open Space Element outlines goals and policies to provide for the long-term preservation, enhancement, and enjoyment of plant, wildlife, and aquatic resources in the City of Carson by protecting and restoring these resources. The City works to ensure that proposed development projects demonstrate a high degree of compatibility with any threatened or endangered species and sensitive biological resources among other natural resources and environment that occur in the City's jurisdiction and general vicinity.

CULTURAL RESOURCES

Applicable LORS	Description
State	
Public Resources Code 5097.98(b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendents (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.
California Health and Safety Code, Section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
Los Angeles County General Plan, 2008	Policy C/OS 12.1: Support an inter-jurisdictional collaborative system that protects and enhances the County's cultural heritage resources. Policy C/OS 12.2: Support the preservation and rehabilitation of historic buildings. Policy C/OS 12.3: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004). Policy C/OS 12.4: Promote public awareness of the County's cultural heritage resources.
City of Carson General Plan, Parks, Recreation, and Human Services Element (City of Carson 2004)	Goal P-9: Protection of historic resources within the City. Policy P-9.1 Promote the preservation of historic resources in the City through the Fine Arts and Historical Commission. Policy P-9.2 Coordinate with the Departments of History and Anthropology at California State University, Dominguez Hills (CSUDH), to mutually enrich both the educational and general communities. Policy P-9.3 Create an oral history program that would archive the City's history from long-time Carson residents. Implementation Measure P-IM-9.1: Encourage the Fine Arts and Historical Commission to work with local historic societies and CSUDH to preserve important historic resources. Work with the City's Public Information Office to promote local and regional historic resources. Implementation Measure P-IM-9.2: Encourage all development or redevelopment occurring in areas identified as a potential historic archaeological site to be surveyed for historic archaeological resources prior to initiation of site preparation for development. Implementation Measure P-IM-9.3: Ensure that documentation of all historic archaeological surveys conducted in the City of Carson be provided to the Planning and Environmental Services Division.

FACILITY DESIGN

Applicable LORS	Description
Federal	
	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards
State	
	2007 (or the latest edition in effect) California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
Local	
	City of Carson regulations and ordinances
General	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

GEOLOGY AND PALEONTOLOGY

Applicable LORS	Description
Federal	
	The proposed Watson Project is not located on federal land. There are no federal LORS for geologic hazards and resources for this site.
State	
California Building Code (2010) in CCR Title 24	The CBC (2010) includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control). The CBC has adopted provisions in the International Building Code (ICC, 2009). The International Code Council authors the International Building Code.
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), section 2621–2630	Mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. The project site is not located within a designated Alquist-Priolo Fault Zone.
The Seismic Hazards Mapping Act, PRC section 2690–2699	Areas are identified that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches.
PRC, Chapter 1.7, sections 5097.5 and 30244	Regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.
Warren-Alquist Act, PRC, sections 25527 and 25550.5(i)	The Warren-Alquist Act requires the Energy Commission to “give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites…“ With respect to paleontologic resources, the Energy Commission relies on guidelines from the Society for Vertebrate Paleontology (SVP), indicated below.
California Environmental Quality Act (CEQA), PRC Chapter 21000 et seq., Guidelines 15000 et seq., Appendix G – Environmental Checklist form.	Mandates that public and private entities identify the potential impacts on the environment during proposed activities. Appendix G outlines the requirements for compliance with CEQA and provides a checklist that includes significant impacts to a paleontological resource.

GEOLOGY AND PALEONTOLOGY

Applicable LORS	Description
Local	
City of Carson General Plan	Requires steps to minimize the risk of injury, loss of life, and property damage caused by earthquake hazards.
Applicable Standard (General)	
Society for Vertebrate Paleontology (SVP), 1995	The “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” is a set of procedures and standards for assessing and mitigating impacts to vertebrate or significant invertebrate fossils or significant suites of plant fossils .The measures were adopted in October 1995 by the SVP, a national organization of professional scientists.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	Description
Federal	
The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.)	Contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III).
The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended)	Established a nationwide emergency planning and response program and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials.
The CAA section on risk management plans (42 USC §112(r))	Requires states to implement a comprehensive system informing local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.
49 CFR 172.800	The U.S. Department of Transportation (DOT) requirement that suppliers of hazardous materials prepare and implement security plans.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written spill prevention, control, and countermeasures (SPCC) plan to be prepared for facilities that store oil that could leak into navigable waters.
Title 49, Code of Federal Regulations, Part 190	Outlines gas pipeline safety program procedures.
Title 49, Code of Federal Regulations, Part 191	Addresses transportation of natural and other gas by pipeline: annual reports, incident reports, and safety-related condition reports. Requires operators of pipeline systems to notify the DOT of any reportable incident by telephone and then submit a written report within 30 days.
Title 49, Code of Federal Regulations, Part 192	Addresses transportation of natural and other gas by pipeline and minimum federal safety standards, specifies minimum safety requirements for pipelines including material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use that characterize the surrounding land. This part also contains regulations governing pipeline construction (which must be followed for Class 2 and Class 3 pipelines) and the requirements for preparing a pipeline integrity management program.
Federal Register (6 CFR Part 27) interim final rule	A regulation of the U.S. Department of Homeland Security that requires facilities that use or store certain hazardous materials to submit information to the department so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	Description
State	
Title 8, California Code of Regulations, section 5189	Requires facility owners to develop and implement effective safety management plans that ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the Risk Management Plan (RMP) process.
Title 8, California Code of Regulations, section 458 and sections 500 to 515	Sets forth requirements for the design, construction, and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.
California Health and Safety Code, section 25531 to 25543.4	The California Accidental Release Program (CalARP) requires the preparation of a Risk Management Plan (RMP) and off-site consequence analysis (OCA) and submittal to the local Certified Unified Program Agency for approval.
California Health and Safety Code, section 41700	Requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity from being discharged into sources of drinking water.
California Public Utilities Commission General Order 112-E and 58-A	Contains standards for gas piping construction and service.
Hazardous Substance Information and Training Act, 8 CCR Section 339; Section 3200 et seq., 5139 et seq., and 5160 et seq.	Requires listing and implementation of specified control measures for management of hazardous substances.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	Description
State	
California HSC Sections 25270 through 25270.13	Requires the preparation of a Spill Prevention, Control, and Countermeasures (SPCC) Plan if 10,000 gallons or more of petroleum is stored on-site. The above regulations would also require the immediate reporting of a spill or release of 42 gallons or more to the California Office of Emergency Services and the Certified Unified Program Authority (CUPA).
Process Safety Management: Title 8 CCR Section 5189	Requires facility owners to develop and implement effective process safety management plans when toxic, reactive, flammable, or explosive chemicals are maintained on site in quantities that exceed regulatory thresholds
Local	
Los Angeles County Fire Department, Health and Hazardous Materials Division	Requires new/modified businesses to complete a Hazardous Materials Business Plan and Chemical Inventory forms when handling hazardous materials in excess of threshold quantities.

LAND USE

Applicable LORS	Description
Federal	**None**
State	**None**
Local	
City of Carson General Plan-Land Use Element-Chapter 2	The General Plan is a policy document which guides future growth and development. The City of Carson's General Plan consists of ten elements, seven of which are required under state law and three optional elements. The state mandated elements consist of the Land Use, Transportation and Infrastructure, Housing, Safety, Noise, and Open Space and Conservation. The three optional elements consist of Economic Development, Parks, Recreation and Human Services and Air Quality. Each element is closely interrelated and must be internally consistent with one another. The Land Use Element serves as the central element for the general plan related to the physical development of the city. This element addresses the location, compatibility and intensity of land uses.
General Plan Designation Heavy Industrial (HI)	The purpose of the Heavy Industrial designation is to provide areas for the full range of industrial uses which are acceptable within the community, but whose operations are more intensive and may have nuisance or hazardous characteristics, which for reasons of health, safety, environmental effects, or general welfare, are best segregated from other less intensive uses. Permitted uses within this designation consist of manufacturing products, industrial processing, food manufacturing and processing, transportation, communication, utilities and public services.
City of Carson Municipal Code	The Municipal Code consists of the regulatory ordinances of the city, codified pursuant to the provisions of Articles 1-10, Sections 1100-10011.
Division 1 Section 9141.1-Uses Permitted in the Manufacturing, Heavy (MH) Zoning District	The purpose of the Manufacturing, Heavy Zoning District is to designate areas for the full range of industrial uses which are acceptable within the community as a whole, with provisions for controlling any adverse effects upon the more sensitive areas of the city.

NOISE

Applicable LORS	Description
Federal	
Occupational Safety & Health Act (OSHA): 29 U.S.C. § 651 et seq. U.S. Environmental Protection Agency (USEPA)	Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration, (OSHA) adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation. Guidelines are available from the U.S. Environmental Protection Agency (USEPA) to assist state and local government entities in developing state and local LORS for noise. Because there are existing local LORS that apply to this project, the USEPA guidelines are not applicable. There are no federal laws governing off-site (community) noise. The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 vibrational decibel (VdB), which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec. Assists state and local government entities in development of state and local LORS for noise

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NOISE

Applicable LORS	Description
State	
California Occupational Safety & Health Act (Cal-OSHA): 29 U.S.C. § 651 et seq., Cal. Code Regs., tit. 8, §§ 5095-5099	California Government Code Section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its general plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State of California, Office of Noise Control, prepared the Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. This model also defines a simple tone, or "pure tone," as one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by five A-weighted decibels (dBA). The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated occupational noise exposure regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to federal OSHA standards.
Local	
City of Carson General Plan	The City of Carson General Plan (GP) provides a blueprint for how the city anticipates directing and managing growth while minimizing potential effects for existing and future generations. The City of Carson GP has adopted community noise exposure levels based on the Department of Housing and Urban Development Guidelines and State of California Standards (City of Carson 2006).
City of Carson Noise Control Ordinance	**City of Carson Noise Control Ordinance** In 1995, the City of Carson adopted, with amendments, the Los Angeles County Noise Control Ordinance as the City of Carson Noise Control Ordinance. The City of Carson Noise Control Ordinance limits noise exposure by receiver categories (zones) or limits noise emission levels by noise-producing activities. This ordinance limits exterior noise levels at receptor locations (City of Carson 1995). The maximum exterior noise levels in terms of receptor category are shown in Noise Table 2 of the Staff's FSA.

POWER PLANT EFFICIENCY

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) apply to the efficiency of this project.

POWER PLANT RELIABILITY

No federal, state, local, or county laws, ordinances, regulations and standards (LORS) pertain to the reliability of this project.

PUBLIC HEALTH

Applicable LORS	Description
Federal	
Clean Air Act section 112 (Title 42, U.S. Code section 7412)	The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires new sources that emit more than 10 tons per year of any specified Hazardous Air Pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology.
State	
California Health and Safety Code section 25249.5 et seq. (Proposition 65)	These sections establish thresholds of exposure to carcinogenic substances above which Prop 65 exposure warnings are required.
California Health and Safety Code section 41700	This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
California Code of Regulations, Title 22, Section 60306	Requires that whenever a cooling system uses recycled water in conjunction with an air conditioning facility and a cooling tower that creates a mist that could come into contact with employees or members of the public, a drift eliminator shall be used and chlorine, or other, biocides shall be used to treat the cooling system recirculating water to minimize the growth of Legionella and other micro-organisms.
California Public Resource Code section 25523(a); Title 20 California Code of Regulations (CCR) section 1752.5, 2300–2309 and Division 2 Chapter 5, Article 1, Appendix B, Part (1); California Clean Air Act, Health and Safety Code section 39650, et seq.	These regulations require a quantitative health risk assessment for new or modified sources, including power plants that emit one or more toxic air contaminants (TACs).
California Health and Safety Code, Sections 44360 to 44366 (Air Toxic Hot Spots Information and Assessment Act)	Establishes acceptable levels for toxic contaminants based on the results of a Health Risk Assessment (HRA).
Local	
South Coast Air Quality Management District (SCAQMD) Rule 1401	This rule discusses the requirements for new source review for air toxics, the use of Best Available Control Technology (BACT) and Toxics-BACT, and the preparation of an HRA.

SOCIOECONOMICS

Applicable LORS	Description
California Education Code, Section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, Sections 65996-65997	Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

SOIL & WATER

Applicable LORS	Description
Federal	
Clean Water Act (33 U.S.C. Section 1251 et seq.)	The Clean Water Act (33 USC § 1251 et seq.) allows states to set standards to protect water quality, which includes regulation of stormwater and wastewater discharges during construction and operation of a facility. California established its regulations to comply with the Clean Water Act under the Porter-Cologne Water Quality Control Act of 1967. These are normally addressed through a general National Pollutant Discharge Elimination System (NPDES) permit. For the Watson Project, regulation of water quality is administered by the Los Angeles Regional Water Quality Control Board (LARWQCB).
Resource Conservation and Recovery Act	The Resource Conservation Recovery Act (RCRA) of 1976 (42 USC § 6901 et seq., implemented at 40 Code of Federal Regulations (CFR) Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
40 Code of Federal Regulations, Part 423	The provisions of this part of the CFR are applicable to discharges resulting from the operation of a generating unit by an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil, or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.
State	
California Constitution, Article X, Section 2	This section requires that the water resources of the State be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use or unreasonable method of use of water is prohibited.
The California Safe Drinking Water and Toxic Enforcement Act	This Act (California Health & Safety Code Section 25249.5 et seq.) prohibits actions contaminating drinking water with chemicals known to cause cancer or possessing reproductive toxicity. The Regional Water Quality Control Board (RWQCB) administers the requirements of the Act.
The Porter-Cologne Water Quality Control Act of 1967, California Water Code Sec 13000 et seq.	Requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. Those regulations require that the RWQCBs issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.

SOIL & WATER

Applicable LORS	Description
State	
California Water Code Section 13260	Requires filing with the appropriate RWQCB a report of waste discharge that could affect the water quality of the state, unless the requirement is waived pursuant to Water Code section 13269.
California Water Code Section 13550	Identifies the use of potable domestic water for industrial uses as a waste or unreasonable use of water if a suitable supply of reclaimed water is available. The availability of reclaimed water is determined provided that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources.
California Water Code Section 13552.6	Specifically identifies the use of potable domestic water for cooling towers, if suitable reclaimed water is available, as a waste or unreasonable use of water. The availability of reclaimed water is determined based on criteria listed in Section 13550 by the SWRCB. Those criteria include provisions that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources.
California Code of Regulations, Title 17	Title 17, Division 1, Chapter 5, addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines for projects that utilize reclaimed water.
California Code of Regulations, Title 22	Title 22, Division 4, Chapter 15, requires the California Department of Public Health (DPH) to review and approve the wastewater treatment systems to ensure they meet tertiary treatment standards allowing use of recycled water for industrial processes such as steam production and cooling water. DPH also specifies Secondary Drinking Water Standards in terms of Consumer Acceptance Contaminant Levels, including TDS ranging from a recommended level of 500 mg/l, an upper level of 1,000 mg/l and a short term level of 1,500 mg/l.
California Code of Regulations, Title 23	Title 23, Division 3, Chapter 15, requires the RWQCB to issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
Local	
Los Angeles County, Municipal Storm Water NPDES permit	Requires the development of a Standard Urban Stormwater Mitigation Plan (SUSMP).

SOIL & WATER

Applicable LORS	Description
Local	
Los Angeles County Grading Guidelines	Provides regulations and submittal requirements for grading projects.
Los Angeles County Building Code, Title 26	Provides regulations for building permits.
City of Carson General Plan, Water Quality Policies and Programs	These policies are intended to control the potentially significant impacts of development including non-point sources of water pollution, urban runoff, grading, construction, and agricultural activities.
State Policies and Guidance	
SWRCB Res. 2009-0011 (Recycled Water Policy)	This policy supports and promotes the use of recycled water as a means to achieve sustainable local water supplies and reduction of greenhouse gases. This policy encourages the beneficial use of recycled water over disposal of recycled water. This policy states the following recycled water use goals: • Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AF/y) by 2020 and by at least two million AF/y by 2030; • Increase the use of stormwater over use in 2007 by at least 500,000 AF/y by 2020 and by at least one million AF/y by 2030; • Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020; and • Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

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SOIL & WATER

Applicable LORS	Description
Local	
State Policies and Guidance	
SWRCB Resolutions 75-58 and 88-63	The policy of the SWRCB that addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1976, by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. Resolution 75-58 defines brackish waters as "all waters with a salinity range of 1,000 to 30,000 mg/l" and fresh inland waters as those "which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish and wildlife". In a May 23, 2002 letter from the Chairman of the SWRCB to Energy Commission Commissioners, the principal of the policy was confirmed "that the lowest quality cooling water reasonably available from both a technical and economic standpoint should be utilized as the source water for any evaporative cooling process utilized at these facilities." Resolution 88-63 defines suitability of sources of drinking water. The total dissolved solids must exceed 3,000 mg/L for it not to be considered suitable, or potentially suitable, for municipal or domestic water supply.
Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et seq)	In the 2003 IEPR, consistent with SWRCB Policy 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating they will approve the use of fresh water for cooling purposes by power plants only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound." Additionally, the Energy Commission will require zero liquid discharge technologies unless such technologies are shown to be "environmentally undesirable" or "economically unsound".
California Water Code Section 461	Encourages the conservation of water resources and the maximum reuse of wastewater, particularly in areas with limited water supply.
National Resources Conservation Service (NRCS), National Engineering Handbook, Sections 2 and 3 (1983)	Sections 2 and 3 of the USDA-NRCS National Engineering Handbook (1983) provide standards for soil conservation and erosion prevention during construction activity.

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable LORS	Description
Aviation Safety	
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards.
FAA Advisory Circular No. 70/7460-1G, " Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard.
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	
Local	
Noise Element of the City of Carson's, Noise Element and City of Carson's Noise Ordinance.	Set noise limits on noise generated around residential and commercial areas.
Hazardous and Nuisance Shocks	
State	
CPUC GO-95, "Rules for Overhead Electric Line Construction"	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable LORS	Description
Hazardous and Nuisance Shocks	
State	
CPUC GO-128, “Rules for Construction of Underground Electric Supply and Communicatons System”	Established requirements for construction and operation of underground electric lines and communications circuits.
Title 8, California Code of Regulations (CCR) Section 2700 et seq. “High Voltage Safety Orders”	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
Industry Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, “IEEE Guide for Fence Safety Clearances in Electric-Supply Stations”	Specifies the guidelines for grounding-related practices within the right-of-way and substations.
Electric and Magnetic Fields	
State	
GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.
Industry Standards	
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line.
Fire Hazards	
State	
14 CCR Sections 1250-1258, “Fire Prevention Standards for Electric Utilities”	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.

TRAFFIC AND TRANSPORTATION

Applicable LORS	Description
Federal	
Aeronautics and Space Title 14 Code of Federal Regulations (CFR), part 77 Objects Affecting Navigable Airspace (14 CFR 77)	Establishes standards for determining physical obstructions to navigable airspace; sets noticing and hearing requirements; and provides for aeronautical studies to determine the effect of physical obstructions on the safe and efficient use of airspace.
49 CFR, Subtitle B	Includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.
State	
California Vehicle Code (CVC), division 2, chapter 2.5; div. 6, chap. 7; div. 13, chap. 5; div. 14.1, chap. 1 & 2; div. 14.8; div. 15	Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.
California Streets and Highway Code, division 1 & 2, chapter 3 & chapter 5.5	Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits.
California Street andHighway Code §§117, 660-711	Requires permits from California Department of Transportation (Caltrans) for any roadway encroachment during truck transportation and delivery.
California Street and Highway Code §§660-711	Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.
Local	
Metropolitan Transportation Authority 2004 Los Angeles County Congestion Management Plan	Designates that a minimum levels of service (LOS) E performance measurement is designated for highway segments and key roadway intersections in the CMP system.
City of Carson General Plan – Transportation and Infrastructure Element	Policy TI-2.1: Require that new projects not cause the Level of Service for intersections to drop more than one level if it is at Level A, B or C, and not drop at all if it is at D or below, except when necessary to achieve substantial City development goals.

TRANSMISSION SYSTEM ENGINEERING

Applicable LORS	Description
Federal	
National Electric Safety Code, 1999	Provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
NERC/WECC Planning Standards	The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage Support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2006)

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TRANSMISSION SYSTEM ENGINEERING

Applicable LORS	Description
Federal	
NERC Reliability Standards for the Bulk Electric Systems of North America	Provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability Standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Standards, certain aspects of the NERC/WECC Standards are either more stringent or more specific than the NERC Standards for Transmission System Contingency Performance. The NERC Reliability Standards apply not only to interconnected system operation but also to individual service areas (NERC 2006).
State	
California Public Utilities Commission (CPUC) General Order 95 (GO-95)	"Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
California Public Utilities Commission (CPUC) General Order 128 (GO-128)	"Rules for Construction of Underground Electric Supply and Communications Systems," formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.
California ISO Planning Standards	Provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The CAISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The CAISO Standards apply to all participating transmission owners interconnecting to the CAISO controlled grid. They also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the CAISO (California ISO 2002a).
California ISO/FERC Electric Tariff	Provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the "Need" for the proposed project where it will promote economic efficiency or maintain system reliability. The California ISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the California ISO grid (California ISO 2007a).

VISUAL RESOURCES

Applicable LORS	Description
Federal	
Transportation Equity Act for the 21st Century of 1998 and Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005	There are no federal lands, recognized National Scenic Byways, or All American Roads within the effective viewshed of the Project.
State	
California Streets and Highways Code, sections 260 through 263 – Scenic Highways	There are no state-eligible or designated scenic highway corridors within the effective viewshed of the Project.
Local	
General Plan, City of Carson, Chapter 2, Land Use Element (City of Carson 2004)	
Policy LU-9. Develop design standards to address permanent and effective screening of areas in transition and heavy industrial uses, such as outdoor storage yards, pallet yards, salvage yards, auto dismantling yards, and similar uses.	The city's land use goal LU-9 is to eliminate all evidence of property deterioration throughout Carson.
Policy LU-12.3. Review landscape plans for new development to ensure that landscaping relates well to the proposed land use, the scale of structures, and the surrounding area.	The city's land use goal LU-12 is to create a visually attractive appearance throughout Carson.
Policy – LU 12.5. Improve city appearance by requiring landscaping to screen, buffer, and unify new and existing development. Mandate continued upkeep of landscaped areas.	
Policy – LU 13.5. Continue to require landscaping treatment along any part of a building site which is visible from city streets.	The city's land use goal LU-13 is to encourage interesting and attractive streetscapes throughout Carson.
Policy – LU 14.2. Require new commercial or industrial development adjacent to and visible from freeways and freeway ramps to incorporate full architectural and landscape treatment of the building on the freeway side.	The city's land use goal LU-14 is to enhance freeway corridors and major arterials which act as gateways into the City of Carson.

VISUAL RESOURCES

Applicable LORS	Description
General Plan, City of Carson, Chapter 8, Open Space and Conservation (OSC) (City of Carson 2004)	
Policy – OSC -1.2. Maintain existing landscaping along the City's major streets and expand the landscaping program along other arterial streets throughout the community.	The city's Open Space Goal OSC-1 is for enhanced landscaping and improved maintenance of Carson's public areas.
Policy – OSC -1.5. Utilize electric transmission and other utility corridors for greenbelt and recreational uses where appropriate.	
City of Carson Municipal Code, Article IX, Planning and Zoning, Chapter 1. Zoning, Part 4. Industrial Zones (Code Publishing Company 2010)	
Division 6. Site Development Standards, Section 9146.3 Fences, Walls and Hedges. No fence, wall, or hedge in an industrial zone shall exceed a height of 50 feet.	
Division 6. Site Development Standards, Section 9146.8 Utilities. All new utility lines, other than major transmission lines, shall be placed underground. This requirement may be waived by the Planning Commission where topography, soil, undue financial hardship, or other conditions that make such underground installation unreasonable or impractical.	
All aboveground equipment (other than pole lines when permitted), such as transformers and pedestal terminals that are visible from an adjacent public street or walkway, shall be within a solid enclosure or otherwise screened from public view. Such enclosure/screening shall be in accordance with the utility's service requirement.	

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VISUAL RESOURCES

Applicable LORS	Description
City of Carson Municipal Code, Article IX, Planning and Zoning, Chapter 1. Zoning, Part 4. Industrial Zones (Code Publishing Company 2010)	
Division 6. Site Development Standards, Section 9146.9. Site Planning and Design. In the case of a commercial or industrial use located on a corner lot, no public pedestrian entrance from a side street shall be located less than one hundred (100) feet from any residential zone.	
Mechanical equipment not enclosed within a building shall be screened from view from any adjoining public street or walkway.	
Division 7. Environmental Effects, Section 9147.1 Exterior Lighting. All lighting of buildings, landscaping, parking lots and similar facilities shall be directed away from all adjoining and nearby residential property. Such lighting shall be arranged and controlled so as not to create a nuisance or hazard to traffic or to the living environment. This Section is also applicable to arc lights, search lights and similar lighting devices.	
Division 7. Environmental Effects, Section 9147.2 Performance Standards. No use shall create a disturbance to the surrounding area in the form of vibration, noise, electromagnetic or other radiations, odor, dust, heat or glare. All uses shall comply with Federal, State and local laws and regulations pertaining to such environmental effects.	
***City of Carson Municipal Code, Article IX, Planning and Zoning,* Chapter 1. Zoning, Part 6. General Development Standards (Code Publishing Company 2010)**	
Division 2. Vehicular Parking, Loading and Maneuvering Areas, Off-street Parking, Section 9162.52 Landscaping Requirements, A. Interior Parking Lot Facilities.	

VISUAL RESOURCES

Applicable LORS	Description
City of Carson Municipal Code, Article IX, Planning and Zoning, **Chapter 1. Zoning, Part 6. General Development Standards (Code Publishing Company 2010)**	
1. Except for parking lot facilities serving retail petroleum outlets, all required automobile parking facilities and any parking facilities visible from the public right-of-way shall have interior landscaping of no less than 5% of the area of such facilities.	
2. Required setback landscaping abutting a street, sidewalk or structure, and border plantings up to five (5) feet in width abutting a building shall not be considered as interior landscaping for the purposes of this section.	
3. No interior landscaping shall be located in a truck maneuvering or truck loading area.	
4. Interior landscaping shall be arranged so as to provide shade for vehicles and to enhance visual attractiveness from adjoining streets and walkways.	
5. Interior landscaping shall be maintained with an irrigation system, permanently installed which delivers water to all landscaped areas.	
6. All landscaped areas and parking facilities shall be maintained to present attractive appearance at all times.	
7. Unless the Director shall determine that such is not feasible, all interior areas of outdoor parking facilities which, as a result of the parking design, are unused and which are visible from a public street and walkway, shall be landscaped and maintained with an irrigation system, permanently installed, which delivers water directly to all landscaped areas. Such landscaping may be included in computing the 5% interior landscaping requirement.	

WASTE MANAGEMENT

Applicable LORS	Description
Federal	
Title 42, United States Code, §§ 6901, et seq. Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al.)	The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) et al., establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation, and delegation to states, enforcement provisions, and responsibilities, as well as research, training, and grant funding provisions. RCRA Subtitle C establishes provisions for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing: • generator record keeping practices that identify quantities of hazardous wastes generated and their disposition; • waste labeling practices and use of appropriate containers; • use of a manifest when transporting wastes; • submission of periodic reports to the United States Environmental Protection Agency (U.S. EPA) or other authorized agency; and • corrective action to remediate releases of hazardous waste and contamination associated with RCRA-regulated facilities. RCRA Subtitle D establishes provisions for the design and operation of solid waste landfills. RCRA is administered at the federal level by U.S. EPA and its 10 regional offices. The Pacific Southwest regional office (Region 9) implements U.S. EPA programs in California, Nevada, Arizona, and Hawaii.
Title 42, United States Code, §§ 9601, et seq. Comprehensive Environmental Response, Compensation and Liability Act	The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things, the statute addresses: • reporting requirements for releases of hazardous substances; • requirements for remedial action at closed or abandoned hazardous waste sites and brownfields; • liability of persons responsible for releases of hazardous substances or waste; and • requirements for property owners/potential buyers to conduct “all appropriate inquiries” into previous ownership and uses of the property to 1) determine if hazardous substances have been or may have been released at the site and 2) establish that the owner/buyer did not cause or contribute to the release. A Phase I Environmental Site Assessment is commonly used to satisfy CERCLA’s “all appropriate inquiries” requirements.

WASTE MANAGEMENT

Applicable LORS	Description
Federal	
Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes	These regulations were established by U.S. EPA to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes. • Part 246 addresses source separation for materials recovery guidelines. • Part 257 addresses the criteria for classification of solid waste disposal facilities and practices. • Part 258 addresses the criteria for municipal solid waste landfills. • Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (i.e., batteries, mercury-containing equipment, and lamps). U.S. EPA implements the regulations at the federal level. However, California is an authorized state so the regulations are implemented by state agencies and authorized local agencies in lieu of U.S. EPA.
Title 40, CFR, Part 6.3, Subpart GGGGG—National Emission Standards for Hazardous Air Pollutants: Site Remediation	This subpart establishes national emissions limitations and work practice standards for hazardous air pollutants (HAP) emitted from site remediation activities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations and work practice standards.
Title 49, CFR, Parts 172 and 173 Hazardous Materials Regulations	U.S. Department of Transportation established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, and section 262.20.
State	
California Health and Safety Code, Chapter 6.5, §§ 25100, et seq. Hazardous Waste Control Act of 1972, as amended	This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements. The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified Program Agencies (CUPAs) implement some elements of the law at the local level.

WASTE MANAGEMENT

Applicable LORS	Description
Federal	
Title 22, California Code of Regulations (CCR), Division 4.5 Environmental Health Standards for the Management of Hazardous Waste	These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers, prepare manifests before transporting the waste off site, and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters. The standards addressed by Title 22, CCR include: • Identification and Listing of Hazardous Waste (Chapter 11, §§ 66261.1, et seq.) • Standards Applicable to Generators of Hazardous Waste (Chapter 12, §§ 66262.10, et seq.) • Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §§ 66263.10, et seq.) • Standards for Universal Waste Management (Chapter 23, §§ 66273.1, et seq.) • Standards for the Management of Used Oil (Chapter 29, §§ 66279.1, et seq.) • Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §§ 67450.1, et seq.) The Title 22 regulations are established and enforced at the state level by DTSC. Some generator standards are also enforced at the local level by CUPAs.
California Health and Safety Code, Chapter 6.11 §§ 25404–25404.9 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)	The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs listed below. • Aboveground Storage Tank Program • Business Plan Program • California Accidental Release Prevention (CalARP) Program • Hazardous Material Management Plan / Hazardous Material Inventory Statement Program • Hazardous Waste Generator / Tiered Permitting Program • Underground Storage Tank Program The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as CUPAs. Los Angeles County Department of Environmental Health is the area CUPA. Note: The Waste Management analysis only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. Other elements of the Unified Program may be addressed in the **Hazardous Materials** and/or **Worker Health and Safety** analysis sections.

WASTE MANAGEMENT

Applicable LORS	Description
Federal	
Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §§ 15100, et seq. Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses. • Article 9 – Unified Program Standardized Forms and Formats (§§ 15400–15410). • Article 10 – Business Reporting to CUPAs (§§ 15600–15620).
Public Resources Code, Division 30, §§ 40000, et seq. California Integrated Waste Management Act of 1989.	The California Integrated Waste Management Act of 1989 (as amended) establishes mandates and standards for management of solid waste. Among other things, the law includes provisions addressing solid waste source reduction and recycling, standards for design and construction of municipal landfills, and programs for county waste management plans and local implementation of solid waste requirements.
Title 14, CCR, Division 7, § 17200, et seq. California Integrated Waste Management Board	These regulations further implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions. • Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal. • Chapter 3.5 – Standards for Handling and Disposal of Asbestos Containing Waste. • Chapter 7 – Special Waste Standards. • Chapter 8 – Used Oil Recycling Program. • Chapter 8.2 – Electronic Waste Recovery and Recycling.
California Health and Safety Code, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq. Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14).	This law was enacted to expand the state's hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (~ 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a four-year cycle, with a summary progress report due to DTSC every fourth year.

WASTE MANAGEMENT

Applicable LORS	Description
Federal	
Title 22, CCR, § 67100.1 et seq. Hazardous Waste Source Reduction and Management Review.	These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the act.
California Health and Safety Code Section 101480 - 101490	These regulations authorize the Los Angeles County Department of Environmental Health to enter into voluntary agreements for the oversight of remedial action at sites contaminated by wastes.
Title 22, CCR, Chapter 32, §67383.1 – 67383.5	This chapter establishes minimum standards for the management of all underground and aboveground tank systems that held hazardous waste or hazardous materials, and are to be disposed, reclaimed or closed in place.
Title 8, CCR §1529 and §5208	These regulations require the proper removal of asbestos containing materials in all construction work and are enforced by California Occupational Safety and Health Administration (Cal-OSHA).
Title 27, CCR , division 2, Subdivision 1, Chapter 3, Subchapter 4	This regulation establishes that alternative daily cover (ADC) and other waste materials beneficially used at landfills constitutes diversion through recycling, and requires the California Integrated Waste Management Board to adopt regulations governing ADC.
California Porter-Cologne Water Quality Control Act of 1952: California Water Code, Division 7, Title 23, CCR, Division 3, Chapter 9	Requires adequate protection of water quality by appropriate design, sizing and construction of erosion and sediment controls.
Local	
Los Angeles County Fire Department (LACOFD) Health Hazardous Materials Division (CUPA)	Regulates enforcement responsibility for the implementation of Title 23, Division 3, Chapters 16 and 18 of the CCR, as it relates to hazardous material storage and petroleum underground storage cleanup.
LACOFD Health Hazardous Materials Division	Regulates hazardous waste generator permitting and hazardous waste handling and storage.

WASTE MANAGEMENT

Applicable LORS	Description
Local	
Los Angeles County Department of Environmental Health, Hazardous Material Division various programs	Hazardous Material Division is the CUPA for Los Angeles County that regulates and conducts inspections of businesses that handle hazardous materials, hazardous wastes, and/or have underground storage tanks. Hazardous Material Division programs include assistance with oversight on property re-development (i.e., brownfields) and voluntary or private oversight cleanup assistance.
Los Angeles County Code Section 68.905	Incorporates by reference the California Health & Safety Code Division 20, Chapter 6.11 which requires the facility to operate as a unified program facility.
Los Angeles Air Pollution Control District Regulation XI, Subpart M – Rule 361.145	This rule requires the owner or operator of a demolition or renovation to submit an Asbestos Demolition or Renovation Operational Plan (Notice of Intention) at least 10 working days before any asbestos stripping or removal work begins (such as site preparation that would break up, dislodge or similarly disturb asbestos containing materials. A Notice of Intent is required for all demolition regardless of whether there is the presence of asbestos containing material.
South Coast Air Quality Management District Rule 1166. Volatile Organic Compound Emissions from decontamination of soil	This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from VOC-contaminated soil as a result of leakage from storage or transfer facilities, from accidental spillage, or other deposition.
Policies	
Los Angeles County Code – Chapter 20.87 Los Angeles Integrated Waste Management Construction and Demolition (C&D) Ordinance.	The C&D ordinance applies to all construction and renovation projects with a value in excess of $100,000.Applicants must submit a recycling and reuse plan demonstrating how they will divert at least 50 percent of all soil, rock and gravel, and at least 50 percent of all C&D debris, excluding inert material.

WORKER SAFETY AND FIRE PROTECTION

Applicable LORS	Description
Federal	
29 U.S. Code § 651 et seq (Occupational Safety and Health Act of 1970)	This act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).
29 CFR sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.
29 CFR sections 1952.170 to 1952.175	These sections provide federal approval of California's plan for enforcement of its own safety and health requirements, in lieu of most of the federal requirements found in 29 CFR §§1910.1 to 1910.1500.
State	
8 CCR all applicable sections (Cal/OSHA regulations)	Requires that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components; fire safety; and hazardous materials use, storage, and handling.
24 CCR section 3, et seq.	Incorporates the current addition of the California Building Code. Enforced by the Los Angeles County Fire Department.
Health and Safety Code section 25500, et seq.	Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	Requires a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.
Local	
2007 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9)	National Fire Protection Association (NFPA) standards are incorporated into the California Fire Code. The fire code contains general provisions for fire safety, including road and building access, water supplies, fire protection and life safety systems, fire-resistive construction, storage of combustible materials, exits and emergency escapes, and fire alarm systems. Enforced by the Los Angeles County Fire Department.
Los Angeles County Fire Department, Health and Hazardous Materials Division	Requires new/modified businesses to complete a Hazardous Materials Business Plan and Chemical Inventory Forms when handling hazardous materials in excess of threshold quantities.

Docket Number: **09-AFC-1** Date: **November 1, 2011**

Project Name: **Watson Cogeneration Steam and Electricity Reliability Project**

EXHIBIT LIST

Applicant's Exhibits

Exhibit	Docket Transaction Number	Brief Description	Offered	Admitted	Refused
1	50584	Watson Cogeneration Steam and Electric Reliability Project, Application for Certification (AFC), dated March 2009, and docketed on March 19, 2009. [Note: Appendices J (Cultural Resources Technical Report) and K (Paleontological Resources Technical Report) were previously filed separately under the rules of confidentiality and have not been reproduced here.]	11/1/11	11/1/11	
2	52187	Watson Cogeneration Steam and Electric Reliability Project, Supplement in Response to CEC Data Adequacy Review, dated June 2009, and docketed on June 29, 2009.	11/1/11	11/1/11	
3	53444	Watson Cogeneration Steam and Electric Reliability Project, Responses to CEC Data Requests #1-39, dated September 2009, and docketed on September 25, 2009.	11/1/11	11/1/11	
4	53529	Watson Cogeneration Steam and Electric Reliability Project, Responses to CEC Data Requests (#1-39), Air Quality Response #4, Status Report 1, dated October 2009, and docketed on October 1, 2009.	11/1/11	11/1/11	
5	53800	Watson Cogeneration Steam and Electric Reliability Project, Remainder of Responses to CEC Data Requests #1-39, dated October 2009, and docketed on October 23, 3009.	11/1/11	11/1/11	

Exhibit	Docket Transaction Number	Brief Description	Offered	Admitted	Refused
6	53971	Watson Cogeneration Steam and Electric Reliability Project, Responses to CEC Data Requests (#1-39), Air Quality Response #4, Status Report 2, dated November 2009, and docketed on November 2, 2009.	11/1/11	11/1/11	
7	54193	Watson Cogeneration Steam and Electric Reliability Project, Response to SCAQMD Questions (Additional Information Request for Watson Cogeneration Steam and Electric Reliability Project, A/Ns 496922,496924, and 496925), dated November 2009, and docketed on November 18, 2009.	11/1/11	11/1/11	
8	54708	Watson Cogeneration Steam and Electric Reliability Project, Responses to CEC Data Request Set 1 (32) and Set 2 (40-48), dated January 2010, and docketed on January 6, 2010.	11/1/11	11/1/11	
9	55692	Watson Cogeneration Steam and Electric Reliability Project, Responses to Questions from the January 20, 2010 Issues Resolution Workshop, dated February 2010, and docketed on February 25, 2010.	11/1/11	11/1/11	
10	55803	Watson Cogeneration Steam and Electric Reliability Project, Addendum Application for Using Aqueous Ammonia in Watson Cogeneration Steam and Electric Reliability Project, AA/Ns 496922, 496924, and 496925 [Reference: Watson Cogeneration Company, Electric Generation (Process 17), BP Carson Refinery, Facility ID 131003] and Application for Change of Condition to Watson Cogeneration Units 1-4 (Watson Cogeneration Steam and Electric Reliability Project) [Reference: Watson Cogeneration Company at the BP Carson Refinery (Facility ID 131003; Process 17, Systems 1-4), dated February 24, 2010, and docketed on March 2, 2010.	11/1/11	11/1/11	
11	55801	Watson Cogeneration Steam and Electric Reliability Project, Aqueous Ammonia Off-Site Consequence Analysis, dated March 2010, and docketed on March 4, 2010.	11/1/11	11/1/11	

12	**56201**	**Watson Cogeneration Steam and Electric Reliability Project, Supplement to Responses to Questions from the January 20, 2010 Issues Resolution Workshop, dated April 2010, and docketed on April 2, 2010.**	**11/1/11**	**11/1/11**	
13	**56222**	**Watson Cogeneration Steam and Electric Reliability Project, Aqueous Ammonia Off-Site Consequence Analysis, Revised April 2010, and docketed on April 12, 2010.**	**11/1/11**	**11/1/11**	
14	**56861**	**Watson Cogeneration Steam and Electric Reliability Project, Responses to Questions from SCAQMD, dated May 21, 2010, and docketed on May 25, 2010.**	**11/1/11**	**11/1/11**	
15	**57099**	**Watson Cogeneration Steam and Electric Reliability Project, Response to Questions from California Energy Commission Staff, dated June 2010, and docketed on June 11, 2010.**	**11/1/11**	**11/1/11**	
16	**59501**	**Watson Cogeneration Steam and Electric Reliability Project, Comments on the Preliminary Staff Assessment, dated January 2011, and docketed on January 17, 2011.**	**11/1/11**	**11/1/11**	
17	**60150**	**Watson Cogeneration Steam and Electric Reliability Project, Responses to CEC Requests from the February 3, 2011 PSA Workshop Continuation, dated March 2011, and docketed on March 28, 2011.**	**11/1/11**	**11/1/11**	
18	**61388**	**Watson Cogeneration Steam and Electric Reliability Project, Responses to June 15, 2011 CEC Data Requests, dated July 2011, and docketed on July 14, 2011.**	**11/1/11**	**11/1/11**	
19	**61490**	**Watson Cogeneration Steam and Electric Reliability Project, Responses to June 30, 2011 LARWQCB Response to CEC Participation Request, dated July 2011, and docketed on July 21, 2011.**	**11/1/11**	**11/1/11**	
20	**61490**	**Watson Cogeneration Steam and Electric Reliability Project, Comments on the Final Staff Assessment, dated September 2011, and docketed on September 22, 2011.**	**11/1/11**	**11/1/11**	

21	**53444**	**Watson Cogeneration Steam and Electric Reliability Project, Authority to Construct Permit Application [SCAQMD ATC Application], dated March 23, 2009 [Docketed as Response 8 in Responses to CEC Data Requests #1-39, dated September 2009], and docketed on September 25, 2009.**	**11/1/11**	**11/1/11**	
22	**55803**	**Watson Cogeneration Steam and Electric Reliability Project, Addendum Application [SCAQMD ATC Application] for Watson Cogeneration Facility Authority to Construct Permit Application, dated February 24, 2010 [Docketed with the Addendum for Aqueous Ammonia], and docketed on March 2, 2010.**	**11/1/11**	**11/1/11**	
23	**62468**	**Watson Cogeneration Steam and Electric Reliability Project, Applicant's Opening Testimony, dated October 2011, and docketed on October 3, 2011.**	**11/1/11**	**11/1/11**	

Staff's Exhibits

Exhibit	Docket Transaction Number	Brief Description	Offered	Admitted	Refused
200	62050	Final Staff Assessment	11/1/11	11/1/11	
201	62553	Revised General Condition 15 – Contained in Staff's Prehearing Conference Statement dated October 11, 2011	11/1/11	11/1/11	
202		Final Determination of Compliance	11/1/11	11/1/11	
203	62517	9/28/11 letter from South Coast AQMD to Alan Solomon re: CEC Final Staff Assessment re: new PSD permitting requirements for GHGs	11/1/11	11/1/11	
204		Watson Project – Water FSA Revised Nov. 1, 2011	11/1/11	11/1/11	

CURE's Proposed Exhibits 300 – 399

Exhibit	Docket Transaction Number	Brief Description	Offered	Admitted	Refused

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

APPLICATION FOR CERTIFICATION
FOR THE *WATSON COGENERATION STEAM AND ELECTRIC RELIABILITY PROJECT*

DOCKET NO. 09-AFC-1
PROOF OF SERVICE LIST
(Revised 2/14/12)

APPLICANT

Ross Metersky
BP Products North America, Inc.
700 Louisiana Street, 12th Floor
Houston, Texas 77002
ross.metersky@bp.com

APPLICANT'S CONSULTANTS

URS Corporation
*Cynthia H. Fischer
8181 East Tufts Avenue
Denver, Colorado 80237
*cindy.fischer@urs.com

COUNSEL FOR APPLICANT

Chris Ellison
Ellison Schneider and Harris LLP
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816
cte@eslawfirm.com

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

INTERVENORS

California Unions for Reliable Energy (CURE)
c/o: Tanya A. Gulesserian
Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com

ENERGY COMMISSION – DECISIONMAKERS

CARLA PETERMAN
Commissioner and Presiding Member
cpeterma@energy.state.ca.us

KAREN DOUGLAS
Commissioner and Associate Member
kldougla@energy.state.ca.us

Jim Bartridge
Adviser to Commissioner Peterman
jbartrid@energy.state.ca.us

Galen Lemei
Adviser to Commissioner Douglas
e-mail service preferred
glemei@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

ENERGY COMMISSION STAFF

Alan Solomon
Project Manager
asolomon@energy.state.ca.us

Jeff Ogata
Staff Counsel
e-mail service preferred
jogata@energy.state.ca.us

ENERGY COMMISSION – PUBLIC ADVISER

Jennifer Jennings
Public Adviser's Office
e-mail service preferred
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I, _____, declare that on _____ 2012, I served and filed a copy of the attached _____ _____, dated _____2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at:

[www.energy.ca.gov/sitingcases/watson/index.html].

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

___ Served electronically to all e-mail addresses on the Proof of Service list;

___ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

___ by sending an original paper copy and one electronic copy, mailed with the U.S. Postal Service with first class postage thereon fully prepaid and e-mailed respectively, to the address below (preferred method); *OR*

___ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 09-AFC-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

___ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
mlevy@energy.state.ca.us

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

_____